







PASSPORT TO

HIGH ADVENTURE







BOY SCOUTS OF AMERICA®

PASSPORT TO HIGH ADVENTURE

A guidebook to enable older Scouts and Venturers, with guidance from their adult leaders, to plan and safely carry out unit high-adventure treks using Leave No Trace techniques.

PREFACE

What opportunities for high-adventure experiences are available to older Scouts and Venturers in your council? This guidebook is designed to acquaint volunteers and older youth with the wide spectrum of council high-adventure experiences available to qualified older youth in Scout troops and Venturing crews.

Your council may already have a canoeing or backpacking high-adventure program, but what about rock climbing, caving, horse packing, rafting, mountain biking, rappelling, sailing, scuba diving, bicycle touring, and skiing? Collectively, the councils that have high-adventure programs offer these activities and more. Older Scouts and Venturers seek to participate in these programs. This book will show you how.

High adventure is a highlight of Scouting outdoor experiences. It appeals to, challenges, and inspires the youth and adult leaders who participate. High adventure keeps older youth high on Scouting. Scoutmasters and crew Advisors must make it a priority to promote high-adventure opportunities and to involve members of their units who are qualified for these elite outdoor activities. The pinnacle of Scouting experiences, high adventure can be used to challenge, excite, and hold youth in Scouting.

Visit the Boy Scouts of America's directory of high-adventure programs at www.scouting.org.

BOY SCOUTS OF AMERICA®

CONTENTS

Introduction 3
The Call of Adventure: A Message to Trekkers 4
Know Before You Go 4

Chapter 1. Who Will Go? 5
Participant Qualifications 5
Crew Organization 5
Adult Adviser 6
Adult Leadership—BSA Policy 7
Youth Protection 8

Chapter 2. Trip Planning 9
Planning Group Adventures 9
Planning Where to Go 11
Religious Obligations 11
Trip Plan 12
References 14

Chapter 3. Travel, Budget, and Insurance 15
Group Travel 15
Overnight Stops Along the Way 18
Tour Plans 19
Ambassadors of Goodwill 20
Budget 20
Insurance 20

Chapter 4. Promotion and Preparation 23
Parents' Night 23
Council High-Adventure Parents' Rally 23
Annual Health and Medical Record 24
Getting in Shape 25
Mental Fitness 27
Risk Advisory 27
Recommendations Regarding Chronic Illnesses 27
Weight Guidelines for High-Adventure Activities 29
Immunizations 29
Safe Swim Defense 29
Safety Afloat 30
Trek Safely 32
Climb On Safely 33

Chapter 5. Equipment 35
Gearing Up 35
Individual Equipment 35
Packs 39
Crew Equipment 39
Cooking Gear 40
Food 41
The Outdoor Essentials 42
First-Aid Kit 42
Maps 43
Conducting a Shakedown 43

Chapter 6. Skills Practice 45
Loading a Pack 45
Backpacking Technique 46
Hiking Tips 46
Canoeing 47
Rafting 47
Kayaking 47
Riding and Packing 47
Winter Camping 47
Cross-Country Skiing 48
Rock Climbing 48
Mountain Hiking and Climbing 48
Caving 48
Bicycle Touring 49

Chapter 7. Trail Procedures 51
Assigning Duties 51
Duty Roster Tasks 51
Positive Crew Dynamics 52
Staying Healthy 53

Chapter 8. Trek Safety 57
Expect the Unexpected 57
Dangerous Weather 57
What to Do When Lost 59
Avoiding Accidents 59
Rating River Difficulty 59
Safety Around Plants 60
Safety Around Animals 60
Handling Backcountry First-Aid Emergencies 62
Medical Dangers 63
When to Stop or Turn Back 65
If an Injury or Crisis Occurs 66

Chapter 9. Leave No Trace 69
A High-Adventure Ethic 69
The Seven Principles of Leave No Trace 69
Leave No Trace Information 70
Minimum Impact for Backcountry Treks 71

Chapter 10. Wrapping Up Your Adventure 73
Keeping a Journal 73
When You Get Home 73
Evaluating Your Trek 73

Appendix 75
Unit Money-Earning Application 76
Historic Trails/50-Miler Award Applications 78
Reminders for Outings 80
Equipment Checklist 83
Resources 86

34245
ISBN 978-0-8395-4310-7

©2011 Boy Scouts of America

INTRODUCTION

Young adults today seek greater challenges to their physical and mental abilities. High-adventure activities entice them to "stretch" to attain the goal of successfully completing an exhilarating outdoor experience. A high-adventure trek is a joyous opportunity—beyond the scope of the routine. It is more than just a scenic outdoor experience. It is more than just a physical challenge. It is an experience in living and cooperating with others to meet an exciting challenge. It is learning to overcome difficulties and learning to live in harmony with nature.

In meeting these challenges, young people gain confidence, humility, and self-reliance. Trekkers become self-reliant by acquiring a wealth of knowledge and skills. High adventure develops critical thinking, judgment, and decision-making skills.

High adventure stimulates good citizenship through teamwork and opportunities for leadership. It emphasizes spirituality by bringing young people closer to nature. It connects individuals to the land, developing a bond of respect for wild places and wild things. Through high adventure, a person becomes committed to wildland stewardship.

High adventure inspires young people to undertake worthy challenges and to work together to meet common team objectives. It offers a meaningful and lasting experience in their lives.

THE CALL OF ADVENTURE: A MESSAGE TO TREKKERS

The exhilaration of being in the wild outdoors is hard to top. Free from the distractions of everyday life, a trekker has a chance to pause and reflect. There are no ringing telephones, instant messages, e-mail, televisions blaring tragic events, traffic congestion, school, work, or meetings.

Living in the outdoors is a return to a simpler life. The air is fresh and invigorating, the whisper of a gentle breeze in the trees is rejuvenating, the gurgle of a brook or stream soothes your soul, the warmth of afternoon sun rays assures you that all is right with God's world. The outdoors beckons, offering a welcome respite. It also reminds you of your commitment to leave the land as pristine as you found it.

To enjoy a trek, you must be fit. Part of preparing for marvelous outdoor experiences means undertaking a physical conditioning program to enhance your aerobic capacity and to tone your muscles. Being fit means feeling good about yourself not only physically, but mentally and emotionally, too. When you're fit, you're alert, able to sleep soundly, refreshed, and more confident. Your antenna is up—you relate more effectively to other people, your outlook is positive, and you are confident of your abilities.

Having adequately planned and trained for your trek, you will be prepared—to raft a turbulent river spewing spray in all directions, to ascend a craggy peak that requires a circuitous route to reach the summit, or to glide across fresh powder snow on skis. You will be prepared for all kinds of weather: driving rains, pelting hail, unforecasted snow, and headwinds that make progress slow.

You will be prepared to leave little or no trace of your visit. Proper planning is fundamental to wildland stewardship. You will plan and train in order to leave the land better than you found it for future generations to enjoy.

You will know that you can rely on the members of your crew. Being in the outdoors is a maturing experience as you soon realize that you can't do everything alone. Your endeavors must blend with those of others; you share your needs and they express theirs. You may have a hot spot or a blister that cries for attention, your pack may begin to separate at the seams, your sleeping bag may get soaked when you slip crossing a stream, or you may simply be hungry or tired—but you learn that you can depend on the members of your crew. And they depend on you! Everyone realizes, "We're in this together." The crew works together to meet everyone's needs.

There is great strength in knowledge—knowing about appropriate outdoor clothing, such as polypropylene, polar fleece, wool, and nylon; knowing about proper nutrition—a blend of simple and complex carbohydrates, proteins, and fats; knowing how to pace your crew so that crew members avoid overheating and sweating, making them prone to hypothermia in cold weather; knowing that drinking lots of properly treated water is crucial to your well-being; knowing how to protect yourself from sunburn that may cause pain now and skin cancer later in life; knowing how to conserve the environment and preserve the experience of future trekkers.

The best high-adventure treks are planned, led, and carried out by youth. The purpose of Scouting is to help youth grow and mature. This happens when youths are responsible for their own plans and for making their own decisions. Teenagers usually can accomplish far more than many adults are willing to acknowledge. Adult leaders should offer suggestions and alternatives and give thoughtful guidance, but should let the youths plan and carry out their trek. People learn from experience. We learn best from experiences when we are responsible for the results. We may make some mistakes, but we learn from them. Most young people are eager to learn when given the opportunity.

Perhaps the greatest outcome of high adventure is the satisfaction of successfully meeting the challenge of doing something that only a few others have attempted, and doing more than you ever thought you could. By making prudent choices and good decisions in a variety of situations, you succeed as an individual and as a crew.

KNOW BEFORE YOU GO

A schedule of preliminary outdoor training experiences is recommended to prepare older Scouts and Venturers for the specific high-adventure experience in which they have decided to participate. This preparation (see chapter 4) will stimulate personal growth, advancement, acquisition of new outdoor skills, fitness, teamwork, and eager anticipation. Through high adventure and the preparation for it, the basic objectives of the Boy Scouts of America are achieved: character development, participating citizenship, and mental, emotional, and physical fitness.

High adventure is as broad as the imagination and encompasses many different types of topography—whitewater rivers, mountains, deserts, lakes, forests, and oceans, to name a few. Each of these environments must be treated with respect and with sensitivity to the future generations who will want to enjoy similar outdoor experiences. The Boy Scouts of America's Wilderness Use Policy (see page 68) addresses these concerns. It applies to all primitive, backcountry, and natural areas as well as federally designated wildernesses.

Older Scouts, Venturers, and leaders need to participate in a Leave No Trace training experience before going into remote wilderness-type areas where improper techniques could leave permanent scars and might detract from the experiences of other users of these areas. (See chapter 9.) Members of the Boy Scouts of America must set an example for everyone.

Visit the Boy Scouts of America's directory of high-adventure programs at www.scouting.org/scoutsource/Applications/highadventuresearch.aspx

CHAPTER 1

WHO WILL GO?

Council high-adventure programs are for older Scouts and Venturers. Every participant must be at least age 13 by January 1 of the year of attendance, or have completed the seventh grade. Some of the more rugged high-adventure experiences offered require an even higher minimum age for participation. Units should use these same standards when determining which members are eligible to participate in high-adventure experiences. Younger Scouts frequently lack sufficient mental and emotional maturity to deal with the challenges of a high-adventure trek. Scout camp is designed for those younger Scouts.

PARTICIPANT QUALIFICATIONS

Every participant—youth, adult leaders, and staff members—must be in good health as verified by a current (within one year) physical examination, signed by a licensed medical practitioner. In addition, every Scout and Venturer who desires to participate must have sufficient emotional and mental maturity to withstand the stresses and pressures of an extended high-adventure experience. A basic level of skill in the chosen activity is also essential for a safe, enjoyable trek. The local council camping committee or high-adventure team should establish qualifications. Parents and Scout leaders should determine who is ready for a high-adventure experience, based on those qualifications.

A youth or leader who desires to participate, but who is not emotionally, mentally, or physically ready for a high-adventure trek, must be so informed. In the case of an unqualified youth, decide whether to counsel the youth directly or to inform the parents and let them speak with their child. Telling a young person that he or she is not qualified for an adventure can be an extremely difficult task. However, it is far better to take such action than to pit a youth against a challenge that he or she is likely to fail. It is in the youth's best interest to wait a year or two so that he or she will benefit fully from the experience.

When coaching a youth, make sure he or she understands that there will be an opportunity for a future high-adventure experience. Young people are more motivated when they are given encouragement and can work toward a specific objective.

Levels of Scouting's Outdoor Program

Every person in a high-adventure crew should have the knowledge, skill, and ability to complete the trek successfully and to enjoy it. Activities requiring a high degree of fitness, specialized skills, and prudent leadership require a mastery of fundamentals and a gradual progression to more demanding adventures.

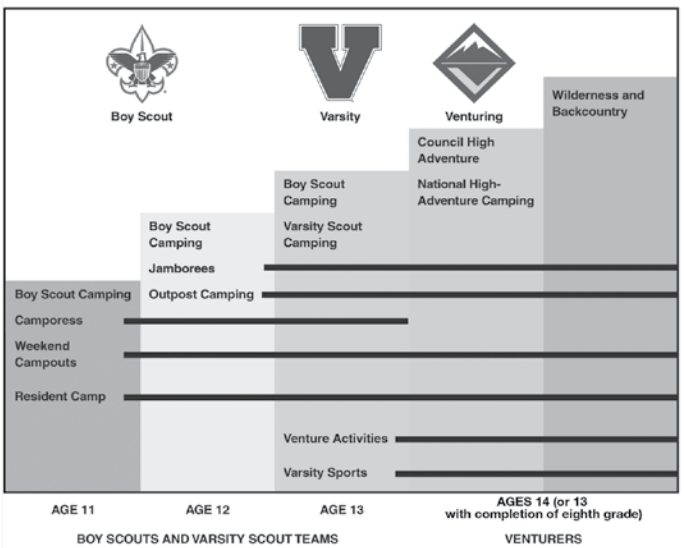
Parental Approval

Boy Scout, Varsity Scout, and Venturing treks require the written approval of a parent or guardian for each crew member.

CREW ORGANIZATION

A small, well-organized crew gets its chores accomplished quickly and has more time to enjoy the trek. A crew should be organized before it goes on a trek. If the crew is a chartered unit, organization should be easy. If the crew is a provisional council group, getting organized is especially important.

Scouting's Outdoor Program—Ever Increasing Challenge Out-of-Doors



Parental Informed Consent and Hold Harmless-Release Agreement

I understand that participation in the _____(activity) offered through the _____ Council, BSA, on _____(date) involves a certain degree of risk that could result in injury or death. In consideration of the benefits to be derived and after carefully considering the risk involved and in view of the fact that the Boy Scouts of America is an organization in which membership is voluntary, and having full confidence that precautions will be taken to ensure the safety and well-being of my (son/daughter), I have carefully considered the risk involved and have given _____(name of son/daughter) my consent to participate in _____(activity), and waive all claims I may have against the Boy Scouts of America, _____ Council, activity coordinator(s), all employees, volunteers, or other organizations associated with the _____(activity).

In case of emergency, I understand every effort will be made to contact me. In the event I cannot be reached, I hereby give my permission to the physician selected by the adult leader in charge to secure proper treatment, including hospitalization, anesthesia, surgery, or injections of medication for my child.

_____
Parent/Guardian Signature

_____
Date

Crew Size

Experience has proven that the best size for a high-adventure crew is four to 12 persons, including adult advisers. A crew of five to eight is ideal. Some public land agencies may require fewer than 12 participants per crew. Their regulations must be met. When planning a trek, ask the administering agency or landowner for the applicable regulations.

Council contingents and other large groups should organize their crews according to level of skill. Each crew can choose an itinerary that corresponds to its ability, and travel at its own pace.

Crew Leader

Each crew should elect a crew leader several months before the trek. The crew leader is a key person in a successful expedition, and the adult adviser must support the leader. The crew leader is responsible for organizing the crew, assigning duties, making decisions, and recognizing the capabilities and limitations of each member. He or she leads by example and discusses ideas and alternatives with the entire crew to hear everyone's opinion and arrive at a consensus before taking action. This responsibility requires someone with leadership ability who is respected by everyone.

The crew leader provides leadership in

- Planning the itinerary based upon the desires of the crew
- Choosing routes during the trek based upon the capabilities of the crew
- Securing regulations from the administering agency or landowner, and getting a use permit if required
- Setting up and breaking camp
- Establishing a duty roster
- Seeing that all crew and personal equipment and supplies are properly stored and that proper precautions are followed to avoid encounters with bears and other wildlife
- Making sure the BSA Wilderness Use Policy is upheld and that all crew members observe Leave No Trace principles at all times

First Aid and CPR Training

To evacuate an injured crew member from a remote backcountry location, or to get medical professionals into a remote area, may take several hours. Training in first aid and cardiopulmonary resuscitation (CPR) is essential to allow proper and prompt attention to injuries or illnesses. In every crew, at least two people, and preferably three or more—either adults or youths—should be currently trained in Wilderness First Aid—Basic (or equivalent) and CPR (having completed a minimum eight-hour course from any recognized community agency, such as the American Red Cross or National Safety Council). It's a good idea to train the entire crew as part of planning and preparation.

Equivalent training in wilderness first aid and CPR can be obtained from the following nationally recognized organizations:

American Red Cross, http://www.redcross.org
American Safety and Health Institute, http://www.ashinstitute.org
Emergency Care and Safety Institute, http://www.ECSInstitute.org
National Outdoor Leadership School, http://www.nols.edu
National Safety Council, http://www.nsc.org
Stonehearth Open Learning Opportunities, http://www.soloschools.com/wfa.html
Wilderness Medical Associates, http://www.wildmed.com
Wilderness Medical Society, http://www.wms.org
Wilderness Medicine Training Center, http://wildmedcenter.com
Wilderness Safety Council, http://www.wfa.net

ADULT ADVISER

The role of the adult adviser is to counsel and advise the crew leader and crew. If necessary, the adviser should be prepared to discipline, without verbal or physical abuse, a crew member. With the advice of the council high-adventure trek staff, the adviser helps ensure the safety and well-being of each crew member. *Insofar as possible, the adviser lets the crew leader lead the crew.* The more capable the crew leader, the more the adviser should remain in the background, giving support only when needed.

The adviser should

- Arrange transportation, overnight stops, and meals en route to and from the high-adventure activity. (Older youth can make these arrangements with adult leader guidance.)
- Assist Scouts to earn their way through fund-raising efforts.
- Help ensure the safety and well-being of everyone in the crew.
- Address crew conflicts that may require discipline.
- Serve as a counselor and coach, and give appropriate guidance to the crew leader and crew members.

ADULT LEADERSHIP—BSA POLICY

It is the responsibility of the chartered organization of any Cub Scout pack, Boy Scout troop, Varsity Scout team, or Venturing crew or ship to inform the committee and leadership of the unit that sufficient adult leadership must be provided on all trips and outings (coed overnight activities require both male and female adult leaders).

Two-deep leadership. Two registered adult leaders, or one registered leader and a parent of a participating Scout or other adult, one of whom must be 21 years of age or older, are required for all trips and outings. There are a few instances, such as patrol activities, when the presence of adult leaders is not required and adult leadership may be limited to training and guidance of the patrol leadership. With the proper training, guidance, and approval by the troop leaders, the patrol can conduct day hikes and service projects. Appropriate adult leadership must be present for all overnight Scouting activities; coed overnight activities— even those including parent and child—require male and female adult leaders, both of whom must be 21 years of age or older, and one of whom must be a registered member of the BSA. The chartered organization is responsible for ensuring that sufficient leadership is provided for all activities.

During transportation to and from planned Scout outings, do the following:

- Meet for departure at a designated area.
- Prearrange a schedule for periodic checkpoint stops as a group.
- Plan a daily destination point.
- A common departure site and a daily destination point are a must. If you cannot provide two adults for each vehicle, the minimum required is one adult and two or more youth members—never one on one.

Safety rule of four: No fewer than four individuals (always with the minimum of two adults) go on any backcountry expedition or campout. If an accident occurs, one person stays with the injured, and two go for help. Additional adult leadership requirements must reflect an awareness of such factors as size and skill level of the group, anticipated environmental conditions, and overall degree of challenge.

Male and female leaders must have separate sleeping facilities. Married couples may share the same quarters if appropriate facilities are available.

Male and female youth participants will not share the same sleeping facility.

Single-room or dormitory-type accommodations for Scouting units: Adults and youths of the same gender may occupy dormitory or single-room accommodations, provided there is a minimum of two adults and four youths. A minimum of one of the adults is required to be Youth Protection–trained. Adults must establish separation barriers or privacy zones such as a temporary blanket or a sheet wall in order to keep their sleeping area and dressing area separated from the youth area.

When staying in tents, no youth will stay in the tent of an adult other than his or her parent or guardian.

If separate shower and latrine facilities are not available, separate times for male and female use should be scheduled and posted for showers. Likewise, youth and adults must shower at different times. The buddy system should be used for latrines by having one person wait outside the entrance, or provide "Occupied" and "Unoccupied" signs and/or inside door latches. Adult leaders need to respect the privacy of youth members in situations where youth members are changing clothes or taking showers, and intrude only to the extent that health and safety require. Adults also need to protect their own privacy in similar situations.

Two-deep adult leadership is required for flying activities. For basic orientation flights, the adult licensed pilot in control of the aircraft is sufficient for the flight, while two-deep leadership is maintained on the ground.

Coed Overnight Activities Policy

All Venturing activities shall conform to the ideals and purposes of the Boy Scouts of America. In order to ensure that all coed overnight activities for Venturers and invited guests at crew, district, council, regional, or national levels meet proper moral standards, the national Venturing Committee has established the following policy:

The crew Advisor (or Skipper) or council Scout executive must give careful consideration to the number of adults necessary to provide appropriate leadership for both male and female participants. The number of adult leaders required by the hosting facility or organization (such as a BSA national high-adventure base) must be provided.

- Adult leaders must be 21 years of age or older and be approved by the committee chairman and chartered organization.
- Separate housing must be provided for male and female participants.
- An adult male leader must be housed with the male participants. An adult female leader must be housed with the female participants.
- Written parent or guardian approval is required for each Venturer or guest under 18 years of age.

Other Adult Leader Qualities

Each leader might not have all of the skills required for an activity. However, adult leaders for a high-adventure experience should have some knowledge of that activity, or enlist the help of someone who does. The combined group of leaders should complement one another. Physical fitness, first-aid training and certification, lifesaving skills, survival skills, Leave No Trace skills and ethics, outdoor experience, an ability to teach, a good understanding of young people, and sound judgment are important qualities for leaders.

The council camping committee or high-adventure team should determine what training is needed and see that leaders receive it. Attending a National Camping School Trek Leader section will help leaders learn to plan, prepare for, and carry out a high-adventure trek. The Philmont Training Center also offers practical courses on trek planning and high adventure.

Generally, council-employed seasonal staff do not assume leadership for a high-adventure group. Parents have entrusted this responsibility to the adult leaders. For council-operated programs, trek staff are important to provide guidance and training to prepare the group for its chosen experience.

Leaders should be familiar with conditions in the territory to be covered, preferably by personal experience, or at least by contacts made well in advance. They should know the kind and amount of equipment that will be required and how to care for it; the costs of foodstuffs, gasoline, oil, etc.; variations in climate; road conditions; sources of food and water supply; campsites; and places where medical attention can be secured. Some high-adventure experiences may require the services of a professional guide. If leaders are uncertain about their ability to lead, they must be willing to seek other resources.

YOUTH PROTECTION

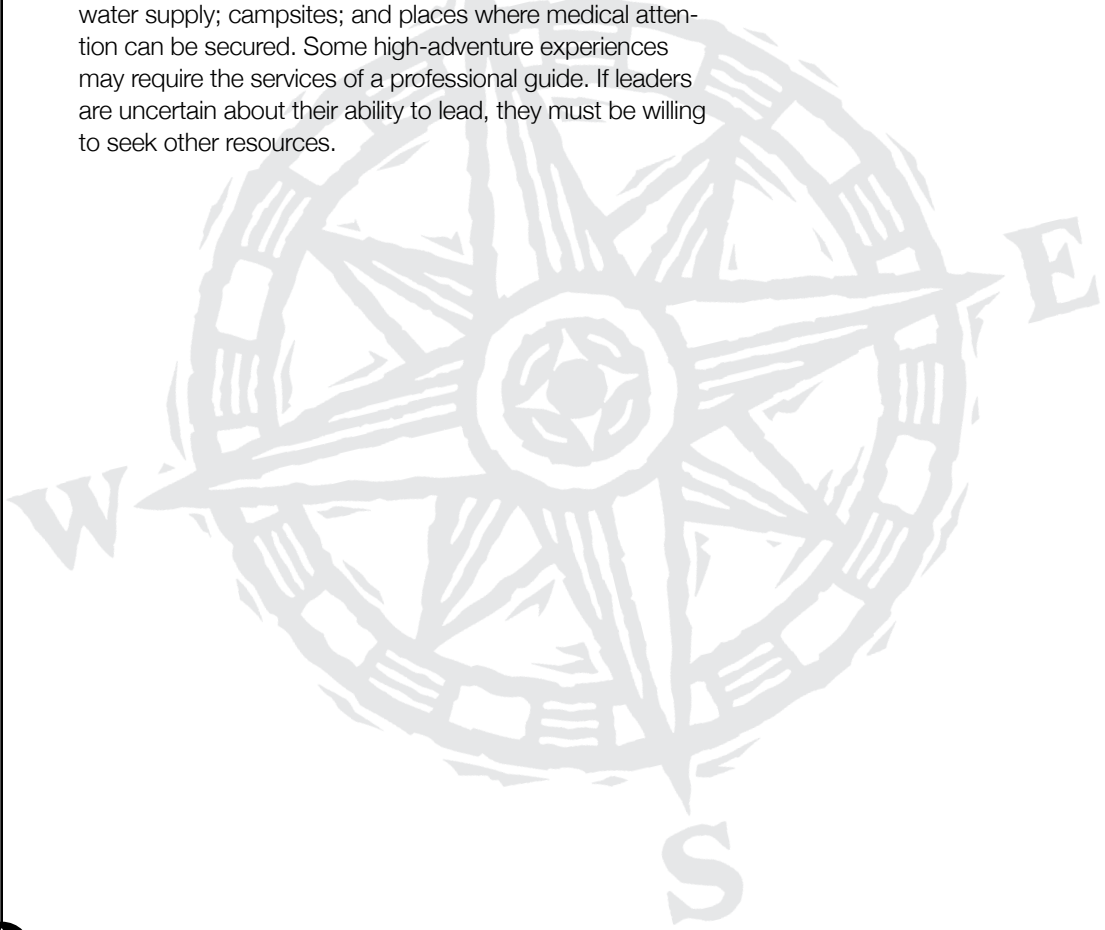
All adult trek leaders must have completed BSA Youth Protection training for participation in any Scouting event or activity. Your local council has materials about this important training, or you can complete Youth Protection training online at MyScouting.org.

Hazing and Initiations

Any form of hazing, initiations, ridicule, or inappropriate teasing is prohibited and must not be allowed.

Standards for Privacy

Adult leaders need to respect the privacy of youth members in situations where the youth are changing clothes or taking showers, and intrude only to the extent that health and safety require. Adults also need to protect their own privacy in similar situations.



CHAPTER 2

TRIP PLANNING

One of the real joys of an adventure is planning for it. Anticipation—that's what happens when crew members get out maps, talk over routes, think about favorite activities, and discuss what to see and do on a trek. As your crew writes a trip itinerary, you can imagine hiking a wilderness trail, exploring the stalactite-hung depths of a cave, or carving graceful turns with cross-country skis. As you gather your gear, you can almost see your tent pitched in a deep forest, or your canoe paddle dipping into the still waters of a quiet lake. Once everything is prepared, anticipation will turn into action and you'll be ready to travel. By planning well, you leave little to chance, and that means you can enjoy the outing to the fullest.

PLANNING GROUP ADVENTURES

Most adventures are more fun when friends travel together, and they are safer, too. Be sure to have at least four people in your crew, including two adults, so that if one person is injured, a companion can stay with the victim while two others go for help. However, you won't want a group that is too large. A crew of four to six people can travel lightly and quickly. You won't require large campsites, you'll see more wildlife, and you'll find it easier to camp without leaving a trace. Crew size must be within the group size limit specified by land management officials. Find out what restrictions apply and plan accordingly. Under no circumstances should your crew have more than 12 members.

What Are the Crew's Capabilities?

Before planning a high-adventure trek or any outdoor adventure, it is crucial to consider the capabilities of the crew. Ask these questions.

- Who will go on the trek?
- What are the ages of the crew members?
- What are the medical restrictions of those who want to go on the trek?
- How much camping experience does the crew have?
- How much experience does the crew have in the activities anticipated on the trek?
- Do the crew members cooperate with one another, and does everyone pitch in to help with crew tasks?
- Does each person accept responsibility to help other members of the crew who may have difficulty?
- Does the crew accept the crew leader's leadership?
- Does the crew leader discuss options with the crew before making decisions?
- Does the crew leader consistently use good judgment in making decisions?
- How well does the crew deal with tough problems?
- Is everyone committed to Leave No Trace?
- Is everyone committed to safety?

The answers to these questions will make a significant difference in how ambitious a trek the crew is prepared to undertake. Matching the high-adventure experience to the capabilities of the crew is the most important initial step in planning a trek. It can make the difference between a successful, enjoyable experience and a disastrous misadventure.

Matching the Adventure to the Group

There are two ways to match a group with an outing. Older Scouts and Venturers can decide on the adventure and then find companions who have the necessary abilities and interests. Or, they can decide with whom they would like to share an adventure and then tailor activities to fit the strengths and weaknesses of everyone involved.

Each member of the crew will have certain strengths that will help make the trip successful. Also consider limitations when selecting an adventure just right for the group. Take into account the following important qualities.

Experience and knowledge. The amount of experience a person has is often, but not always, an indicator of how well that person will do on a trip. Crew members should have a mastery of the skills of any activity planned. It's also valuable for them to have related experience such as first-aid training, backcountry navigational expertise, swimming and lifesaving abilities, and an understanding of weather, wildlife, and botany.

Still, abundant experience does not necessarily create abundant wisdom. People in the habit of using poor camping practices are not better campers if they repeat the same mistakes many times. Experience must be tempered with good judgment, a concern for the environment and the members of the group, and a willingness to learn from anyone who can teach better outdoor skills and ethics.

Leadership. Every group that ventures into the wild outdoors should have a leader and an alternate. The leader is responsible for monitoring the needs and desires of the group and for making decisions to ensure safety and enjoyment. A good outdoor leader learns the abilities and limitations of each individual in the group and delegates tasks accordingly.

Maturity. The more mature the members of the crew, the more demanding the adventures they can enjoy. Mature backcountry travelers can take care of themselves in the wild outdoors and help others when the need arises. They use good judgment and, rather than waiting for someone to tell them what to do, keep their eyes open and pitch in wherever they can to make an outing run smoothly and well.

Attitude. When difficulties arise while a group is away from home, the attitudes of crew members will determine the success of an adventure. Anger and withdrawal can spoil a trip, but even the worst weather and the silliest mistakes can be overcome if the group takes adversity in stride and endures. Cheerfulness is infectious. Keep spirits high; treks with the most miserable conditions may create the fondest memories.

Interests. Each member of the crew will have definite likes and dislikes. One member might love kayaking but dislike mountain climbing. Another might enjoy camp stew and hate freeze-dried chili. Still another might like to spend time alone while another person might thrive on the company of others. As the group discusses what it would like to do on an adventure, each person probably will make personal interests known. All will want to do the things they like best. Are crew members willing to try something new? Does a crew member have a skill to teach the rest of the group once in the field? Can several different interests be satisfied with one trip, or should the group focus on a single activity on this trek and do something different next time?

Physical capabilities. Different adventures require different degrees of exertion. Therefore, be certain the activities you are considering are not beyond the physical capabilities of your group. An exhausted hiker is not only miserable, but also more likely to become injured, lost, or ill. A clue to the fitness of your crew is the amount of exercise they get during a typical week. If they regularly engage in sports, walk a lot, bicycle, or go camping on weekends, they probably are in good shape.

Planning the Duration of a Trip

Determine how much time you have for a trip. A preparatory trek could be an afternoon excursion or a weekend campout, while the high adventure itself could be a wilderness trek lasting several weeks. Include in your plans sufficient time to travel to and from the points where your adventure will begin and end. If necessary, also include time to acclimate to significant changes in elevation.

To get maximum participation, the time frame for the trek should fit the schedule of a majority of the crew members. Available time is a factor—along with the physical condition of your crew and the amount of energy you wish to expend—that helps determine the shape of an adventure. Plan your trek so that you will arrive refreshed.

How Far Do You Want to Travel?

The distance a crew can cover depends on the terrain, the crew members' physical condition, the nature of your gear, and your reasons for taking a trek. Is the country rugged? A mile of flat trail is far different from a mile that gains a thousand feet in elevation. Are crew members lean and strong, or a little out of shape? As a group, do you walk with a fast, steady stride, or at a leisurely pace with frequent pauses to study flowers, watch wildlife, and take photographs?

In planning a trek, estimate the amount of time required to travel from place to place. As a general rule, an average hiker can walk about 2 miles every hour in level country. Backpacking a heavy pack over rugged terrain will take an hour to walk a mile, if conditions are good. To that, add one hour for each thousand-foot climb. For each thousand feet of elevation loss, add one-half hour. Estimate time generously to allow for unexpected problems.

Plan the distances of your first treks conservatively. With a group of backpackers, it is important to establish a moderate pace. It is better to have too much time to reach a destination than too little. By not rushing, you'll enjoy yourself a great deal more, be less apt to make mistakes, and have time for other activities such as photography, observing nature, and discussing plans for the next day.

Trek Pacing

Before you leave home, decide how strenuous a trip will be so that once you're under way, no one will be caught by surprise. Some crew members may want to travel long and hard, while others would rather spend time studying the surroundings and photographing wildlife, or making camp early so they can fix gourmet backcountry meals. Take the desires of everyone into consideration and see if you can work out compromises. Perhaps you will plan to hike hard one day and take it easy the next, or plan a leisurely preliminary outing followed by a more ambitious trek.

Any trek ought to begin gradually and, if desired, increase in difficulty after the first few days. This allows crew members to get accustomed to carrying a pack, riding a bike, paddling a canoe, etc. It also allows the crew to get organized for performing tasks more efficiently, such as pitching and breaking camp, preparing meals, and packing packs.

Preparing for a trek in the forests of the East, the plains of the Midwest, or the rolling terrain of the South can be relatively simple. Trekking at high elevations in the West, however, is quite different. Additional preparation often is needed for acclimation to areas where the air is thin. The first several days of trekking at high elevation need to be tailored to allow crew members' bodies to adjust gradually to the change. When trekking at high elevations, it is wise to plan to ascend no more than a thousand feet per day to avoid acute mountain sickness, which usually necessitates getting a crew member to a lower elevation to alleviate the symptoms.

Even the best-prepared crew should plan some leeway into a trek for unforeseen events. Give yourselves anywhere from a few hours' to several days' leeway in case the weather is bad or the terrain is more rugged than expected. A layover during a trek allows crew members to do laundry, rest and relax, take a side trip or hike to a nearby point of interest, or prepare a lavish meal. Layover days boost the spirits of everyone in the crew and allow flexibility in the total itinerary. If inclement weather or a minor accident precludes trekking on a particular day, a layover day permits the crew to get back on its original schedule. For long treks, it may be wise to include several layover days in the itinerary. The group might elect to spend three days, for instance, in one location where good fishing or numerous opportunities for side hikes exist.

PLANNING WHERE TO GO

Once you have considered the capabilities and interests of the crew and how long the crew wants to spend on the trek, the next step is to make decisions: Where to go, and when. A majority-rules vote is a good way to arrive at decisions.

Where does the group want to go? The possibilities are endless. The descriptions found online at the BSA's council high-adventure directory (http://www.scouting.org) will help your crew decide which council high-adventure program might best fit the group's needs and desires. Also consider the alternatives: National parks, national forests, Bureau of Land Management areas, U.S. Fish and Wildlife Service refuges, state recreation areas, or privately administered lands are just a few. If your trek will be on public land, contact the land-managing agency well in advance to inquire about reservations, group size limits, and permit requirements. To get information, visit your local library, purchase a guidebook for the area of your trek, or contact the following agencies.

Superintendent of Documents
U.S. Government Printing Office (GPO)
732 N. Capitol St. NW
Washington, DC 20401
GPO Order Desk: phone 202-512-1800,
fax 202-512-2250
Website: http://www.gpo.gov
(Publications available from the GPO include *The National Parks: Index; National Wildlife Refuges: A Visitor's Guide;* and *Recreation and Outdoor Activities Bibliography.*)

USDA Forest Service
1400 Independence Ave. SW
Washington, DC 20250-0003
Phone: 202-205-8333
Website: http://www.fs.fed.us

U.S. Fish and Wildlife Service
1849 C St. NW
Washington, DC 20240
Phone: 800-344-WILD
Website: http://www.fws.gov

Bureau of Land Management
1849 C St., Room 406-LS
Washington, DC 20240
Phone: 202-452-5125
Website: http://www.blm.gov
(Ask for *Recreation Guide to BLM Public Lands.*)

U.S. Army Corps of Engineers
Pulaski Building
20 Massachusetts Ave. NW
Washington, DC 20314
Phone: 202-761-0011
Website: http://www.usace.army.mil

National Park Service
1849 C St. NW
Washington, DC 20240
Phone: 202-208-6843
Website: http://www.nps.gov

Planning an Award-Winning Trek

The Boy Scouts of America through local councils makes available two interesting and valuable awards: the Historic Trails Award and the 50-Miler Award.

The Historic Trails Award may be earned by members of a Boy Scout troop, Varsity Scout team, or Venturing crew for hiking a trail listed in *Nationally Approved Historic Trails,* and completing a project related to the trail.

The 50-Miler Award is a recognition given to members in a troop, team, or crew who take a backcountry hike or a canoe or rowboat trip of no less than 50 consecutive miles in at least five consecutive days, and fulfill requirements for group service projects on the trail.

See the applications for these awards in the appendix.

RELIGIOUS OBLIGATIONS

The Boy Scouts of America is specially pledged to encourage reverence and faithfulness to religious obligations. It discourages weekend programs that preclude attending religious services or that discriminate against a member who elects to remain at home to attend services.

Scouting activities should be planned with the approval of the parents and the religious leaders and should not interfere with the Scouts' or Venturers' religious obligations. When traveling, arrange to attend religious services en route or conduct a Scout vesper service on the trail. Remember to say grace before each meal.

Itinerary Planning

An itinerary is a blueprint of your trek. Once you have the plan on paper, you'll discover that it's easy to see what meals you'll need to prepare and what equipment you'll want to take. You won't be likely to forget essential details like arranging transportation to and from the area.

The more extensive the trek being proposed, the more thorough your itinerary planning should be. Sir Edmund Hillary, the first person to climb Mount Everest, once said, "Good planning means living the experience in advance." Being able to anticipate trails and trail conditions, changes in elevation, the expected range of temperatures, the availability of water, and the availability of campsites will help your crew plan an itinerary that is appropriate for the circumstances you expect to encounter.

For any trek, it is crucial to match the itinerary to the capabilities of the crew. The trek should be sufficiently challenging for the older, more experienced youth in the crew, yet not so difficult that anyone in the crew is pitted against a situation where success is uncertain or where the challenge exceeds the participant's skill. In a crew with members of varying skill levels, the trek must accommodate the least skillful individual and offer more difficult experiences to those who have the ability. For instance, at a Class III or IV rapids, half the crew might portage while the remaining crew scouts the rapids and then applies its knowledge and skills in running it.

The crew's objective should be for everyone to meet the challenge and ensure that each crew member is committed to that goal. This may mean shouldering part of the load for another crew member who may be having difficulty for whatever reason. The crew succeeds when every member is successful.

Also crucial to the planning of any backcountry itinerary is the amount of food and equipment that must be carried. (See chapter 5.) The more food and gear that must be taken, the more often you'll need to be resupplied. Most groups find that taking four or five days of food is the maximum weight they can carry and the maximum bulk that will fit in packs or in panniers carried on bicycle or horse treks. If specialized climbing gear, cold-weather clothing, or other extra gear is required, the crew will likely need to be resupplied even more often.

An alternate plan should be devised for every itinerary in case plans are disrupted by unforeseen events. When the entire group is involved in this process, unpleasant surprises are reduced by considering what might cause a change in plans and then developing an alternate itinerary.

It is also recommended that weekend driving be kept to a minimum. This is the time when highway traffic is heaviest, and the accident hazard, therefore, greatly increases. Unless driving is absolutely necessary, Sundays might better be spent in attending religious services, sightseeing, and restful recreation in some community of particular interest along the route.

TRIP PLAN

When your crew arrives at a consensus of what your itinerary and alternate plans will be, write them down. Include a full description of your intended route, where you plan to camp, and what time you will return.

A trip plan lets people know where you're going and when you intend to be back. Be sure everyone understands your itinerary, and then stick to it. Good organization requires that everyone concerned with the group have accurate information on the whereabouts of the group at all times. Give copies of the trip plan and alternate plans to parents, the unit committee, the local council service center, and any park officials, forest rangers, or law enforcement agencies whose jurisdictions include the areas in which you'll be traveling.

Also give each member of the party a copy of the trip plan, a list of license plate numbers of the party's vehicles, and telephone numbers and addresses of scheduled stops. Make sure each person understands what to do if separated from the group. This is vitally important and should include such instructions as

- Contact the group by phone at the next scheduled stop and stay at the point of departure.
- Contact a designated person in your home community.
- Look in the telephone book to see whether there is a Boy Scouts of America local council in the vicinity; call the local Scout executive for help.
- Call the police or sheriff's office for help in locating your group.
- Notify the Scout executive of your local council by telephone.

Where Will You Get Help?

Although your travels may take you far from roads, a large network of people remains ready to assist you during an emergency if you can alert them to your needs. As you plan a trek, take time to identify, and learn how to contact, search-and-rescue teams and medical personnel. Use the Internet to research information, and think through a course of action you would take to get help. Determine

- The location of the nearest medical facility to the area of your trek
- How to evacuate an injured crew member who is unable to walk
- How to contact the nearest public land management agency in case of emergency

Emergency Phone Number List

Location of trip or expedition: _____
Location of nearest town(s), city(ies), or phone(s): _____
_____
_____
_____

Name and phone number of nearest doctor, hospital, or medical facility: _____
_____
_____
_____

Name and phone number of nearest state or federal agency station: _____
Name and phone number of nearest county sheriff's department: _____

- Where to deliver an emergency message while you are on the trek if someone in your crew becomes seriously injured
- Who the home contact person is in case an emergency occurs
- Who will pay for the cost of an evacuation if one is necessary

The nearest community of any size will probably have a medical facility, but telephone the chamber of commerce or other community-service agency to be sure.

Operate within your training and abilities. If your crew does not have the knowledge or experience to carry an injured person out of a remote backcountry area on a litter, you probably will want the administering agency, a search-and-rescue group, or an emergency medical technician (EMT) unit to handle such a rescue. They have professionally trained members with experience, who know how to manage such an operation effectively. Before your trek, find out how to contact them. Public land management agencies must be contacted to get approval for an evacuation requiring the use of motorized vehicles.

Emergency Communications

For every location on your trek, you'll need to know the location of the nearest telephone or two-way radio, so that if you have an emergency, you will know where messages can be delivered. Check to be sure that communications are available 24 hours a day. You might want to carry a mobile phone. Be aware, however, that coverage in remote areas may be lacking or spotty, or you may need to climb to the crest of a ridge or to the summit of a mountain to make contact.

Leaders must be prepared to deal with emergencies that may develop at home, requiring the immediate return of a member, as well as emergencies on the road requiring treatment and hospitalization or the return home of a member. Keep parents informed and, in emergencies, use the telephone according to prearranged plans.

If an emergency involves the entire group, it probably will be impossible for you to inform all of the parents, as well as the local council service center. An emergency contact person from your unit committee or one individual parent should be designated. You can send a message to that person and let him or her inform the others. Be sure to designate alternates in case the first person cannot be reached.

As discussed earlier, you should plan a day-by-day itinerary that shows where the crew will be staying each night and gives a telephone number if a phone is available. Distribute this itinerary to all parents. Leave the emergency contact person a highway map and backcountry map showing your intended route. Also give that individual the name and phone number of the contact person at the land-managing agency. Let your emergency contact know the time of your departure and your expected time of return. If you must deviate from your planned itinerary, inform your emergency contact, if possible, so that parents can be notified.

Plan for the Unexpected

- Determine whom to notify first in case of an accident to a member of the party.
- Determine who will take charge in case of an accident to a leader.
- Maintain a well-stocked first-aid kit to be used by trained persons.
- Make provision for the care of an injured or sick member.
- Determine responsibility for hospital and doctor bills.
- Plan what to do in case of accidental separation of the party or individual members.
- Plan how to make up the schedule and meet appointments in case of breakdown or other delay.
- Leave a forwarding address for mail expected, but not received, en route.
- Make arrangements for cashing traveler's checks, bank drafts, or money orders to prevent loss or theft of money.

If you are late in returning, people will assume you have encountered difficulties. If you don't return at your appointed time, the emergency contact person should activate a preplanned emergency response. Therefore, if you are delayed for a nonemergency reason, make every effort to notify your emergency contact so that an emergency response is not activated. And when you return, be sure to notify everyone with whom you have left a trip plan so they know you're back and don't report you missing or worry unnecessarily.

Emergency Action Plan

Perhaps the most critical test of your preparedness will be in time of emergency. Developing and rehearsing an emergency action plan will add precious time needed for response to a crisis. This is true on a day hike, an overnight or longer troop camp, and all other activities including high-adventure treks. A plan should include

- The person in charge
- Action to be taken
- Alternatives
- People and agencies to notify
- Location of nearest telephone or other means of communication throughout your trek
- Location of law enforcement
- Names and locations of fire and health facilities
- Evacuation procedures

(For more on handling trek emergencies, see chapter 8.)

Prepare an emergency phone number list, like the one shown here, for out-of-town trips. Keep the list and an ample supply of coins with your first-aid kit.

REFERENCES

Guide to Safe Scouting, No. 34416, establishes parameters for Scouting programs and activities and includes information on how to assure safety. It is available at local council service centers and on the BSA website, http://www.scouting.org. You also can visit the Boy Scouts of America's directory of high-adventure programs at http://www.scouting.org.

Online Resources

- Tour plan: www.scouting.org/forms
- Annual Health and Medical Record: www.scouting.org/forms

CHAPTER 3

TRAVEL, BUDGET, AND INSURANCE

In planning a high-adventure trek, an essential consideration is how your crew will be transported to the site of the base, trailhead, or starting point of the trek. Often this will entail several modes of transportation. Because transportation is frequently the greatest expense for high-adventure participants, it's important to carefully consider alternatives. Travel services on the Internet can be useful for identifying travel resources. A local travel agency may be able to help by getting cost estimates for alternate means of transportation. The usual transportation alternatives include travel by air, train, commercial bus, chartered bus, or private vehicles including vans, buses, and recreational vehicles.

Before choosing a mode of travel, explore the alternatives and their costs. Don't forget to consider the costs of meals, lodging, and additional vehicle insurance required in each plan. The results of this analysis may surprise you.

If you will be going during a school vacation period or over a holiday, it is important to schedule transportation well in advance to ensure space for your crew. If you will be traveling by private vehicle, you will need to arrange for enough drivers to allow plenty of relief, as specified on the tour plan.

A trek itinerary can be planned to loop back to the starting point or to end at a new destination. If the itinerary will not loop back, consider how transportation will be arranged from the new destination to your home community.

GROUP TRAVEL

Established public carriers—trains, buses, and commercial airlines—are the safest and most comfortable way for groups to travel. Chartered buses usually are the most economical transportation for groups of 20 or more. It may be necessary for small groups to travel in private automobiles; however, the use of chartered equipment from established rail, bus, and airline companies is strongly recommended. The advantages are many. These companies have excellent safety records because of their periodic inspections and approved health and safety procedures.

For long trips, scheduling an airline flight may be the most reasonable mode of travel in terms of cost. Flying usually eliminates the necessity of overnight stops, meals, and the sheer boredom of a long trip.

Traveling by train or commercial bus may be a good alternative if the carrier takes your group to the right area. For groups of 15 or more, train reservations can be scheduled through Amtrak at 800-872-1477. For groups of fewer than 15 participants, call 800-872-7245 for Amtrak reservations. The toll-free number to charter Greyhound Bus Lines is 800-454-2487.

Automobiles/Vans

It is essential that adequate, safe, and responsible transportation be used for all Scouting activities. Safety precautions are necessary even on short trips by private automobile; most accidents occur within a short distance from home.

Plan your trip so you never have to push it beyond safe driving limits. Keep your headlights on to make your vehicles extra visible. A high-adventure experience is not over until everyone is safely home.

The leadership of each group and chartered organization should select competent drivers. Age alone does not ensure driver competence. National Safety Council studies indicate that mental attitude, maturity, sound judgment, and safe-driving experience are vital to good driver performance.

Observe these rules.

- Every driver must be licensed. If the vehicle to be used is designed to carry more than 15 persons, including the driver (more than 10 persons, including the driver, in California), the driver must have a commercial driver's license (CDL).
- An adult leader (at least 21 years of age) must be in charge and accompany the group.
- A driver must be at least 18 years of age. Youth-member exception: When traveling to an area, regional, or national Boy Scouting activity or any Venturing event under the leadership of an adult (at least 21 years of age) tour leader, a youth member at least 16 years of age may be a driver, subject to the following conditions:

—The youth member must have six months' driving experience as a licensed driver. (Time on a learner's permit or equivalent is not to be counted.)

—The youth member must have a record free of accidents and moving violations.

—Parental permission must have been granted to the leader, driver, and riders.

- Driving time is limited to a maximum of 10 hours per day and should be interrupted by frequent rest, food, and recreation stops. If a vehicle has only one driver, driving time should be reduced and stops made more frequently.
- Each occupant of a vehicle must have and must wear a safety belt.
- Station wagons may be used for transporting passengers, but never permit passengers to ride on the rear deck or tailgate of a station wagon.
- Trucks may not be used for transporting passengers except in the cab. Never permit passengers to ride in the bed of a pickup or truck.
- All driving, except short trips, should be done in daylight.
- Plan for a minimum of eight or nine hours' sleep at night.
- All vehicles must be covered by automobile liability insurance with limits that meet or exceed requirements of the state in which the vehicle is licensed. (See "Adequate Coverage" later in this chapter.)

Many accidents result from driver failure or faulty driver performance. Drivers should always obey *all* traffic regulations, especially speed limits. Drive at moderate speeds, keep pace with traffic, avoid fast starts and stops, and keep at least a two-second gap between automobiles—more for larger and heavier vehicles. (To keep a distance of two seconds between automobiles, begin counting as the vehicle in front passes some stationary point such as a mileage marker or bridge abutment. Two seconds should elapse before the next vehicle reaches that same point.)

All privately owned vehicles should meet all state legal requirements and be approved by the unit committee and chartered organization as being in safe condition before the start of the tour. (Engine, brakes, steering, lights, tires, exhaust system, lubrication, horns, and windshield wipers should be in safe condition.)

Correct tire care is vitally important. Tires should be checked regularly for balance and alignment and rotated as necessary. Tread should be carefully checked—the tread pattern must have a depth of at least ⅛ inch for safe driving. Air pressure should be correct and checked frequently. Tires should be inspected regularly for damage.

Keep well off the road if your car has to stop at the roadside. Use flags by day and flares by night to warn approaching vehicles. Use flashers if the car has them. Vehicles stopped on the side of the road for any reason should be emptied completely of passengers to avoid injury in case of collision with cars approaching from the same direction. Try to avoid stopping in an acceleration lane.

Be especially alert at unprotected railroad crossings and other potentially dangerous places.

During transportation to and from planned Scout outings:
- Meet for departure at a designated area.
- Prearrange a schedule for periodic checkpoint stops as a group.
- Plan a daily destination point.

A common departure site and a daily destination point are important. Two adults for each vehicle are desirable. One adult per vehicle is adequate; however, a youth member should never travel alone with an adult. At least one other adult or youth member must be present.

Two or more cars in the same tour group should not attempt to stay together on the road. Drivers should establish points of rendezvous at suitable meeting places. Avoid driving in line "convoy style."

Keep all car doors locked while the vehicle is in motion. Keep car windows rolled up except as needed for ventilation and to keep carbon monoxide fumes from accumulating in the vehicle. Arms, heads, and any objects should be kept inside the car.

Vehicles should carry at least the following minimum emergency equipment: first-aid kit, fire extinguisher (type approved to extinguish electrical fires), flashlight, road flares, shovel, and road distress flags.

Trucks, Trailers, and Campers

Trucks are designed and constructed to transport materials and equipment, not people. *Never use the beds of trucks or trailers for carrying passengers.* Tour plans will not be issued for any trip that involves carrying passengers in a truck except in the cab. This includes vehicles converted for that use—unless they are licensed as buses and meet all requirements for buses. This also means that military trucks do not meet the requirements even though they may have benches. They haul military personnel, but they do not qualify to carry Scouts or Venturers.

Trailers may be used for carrying equipment, provided they meet all safety, lighting, and licensing requirements. If you will use a utility trailer or canoe trailer, check state laws pertaining to trailer use. Trailers are not allowed on some highways, so plan your route accordingly.

Use caution in towing trailers or campers, as a vehicle's performance, steering, and braking abilities will be altered. Get the correct trailer for the car and the correct hitch for the trailer. Distribute and anchor the load. Allow extra time to brake; changing lanes while braking can jackknife the trailer. Add safety equipment (mirrors, lights, safety chains, brakes for heavy trailers, etc.) as common sense and state laws dictate. Park in designated areas.

Buses

Commercial driver's licenses are required for all bus drivers, but be aware that possessing a license does not guarantee that a person is capable of driving a bus safely. It is essential that unit leaders and volunteers be thoroughly familiar with the bus they will be driving, including knowing the location of emergency exits and fire extinguishers and how to operate them. A driver must be prepared to handle and brake a full bus, which weighs significantly more than an empty bus.

The safety rules for automobiles apply to bus travel, with the exception of seat belts. A bus should not carry more passengers than there are seating locations. Be sure luggage and equipment is fastened securely to prevent it being thrown around in case of an accident. Keep emergency exits clear of people or things. In addition to a regular and thorough maintenance program, a bus should undergo a pretrip inspection of critical systems (signals, fuel, tires, windshield wipers, horn, etc.).

Chartered buses should travel no more than nine hours a day. Night travel by public carrier bus may be appropriate and should be considered permissible as long as passengers can rest and sleep with a reasonable degree of comfort. However, do not plan night travel on buses for two successive nights.

Trains

For safety when traveling by train, don't lean out of windows or doors. Stay out of vestibules. Keep railroad car doors closed. When changing trains, don't cross railroad tracks without permission.

In case of illness or accident, see a train official who can arrange for medical help. On overnight trips, one adult leader should be on call at all times.

Air Travel

Airplane travelers must be cautious about what they pack in their luggage. In flight, variations in temperature and air pressure can cause some hazardous materials to leak or ignite. Hazardous materials that should not be packed in luggage include matches or lighters; signal flares and other explosives; flammable liquids and gases; and bleaches, aerosols, mercury, and solvents containing dangerous chemicals that can cause toxic fumes and corrosion. This means that backpacking stoves and fuel bottles must be packed empty and fuel purchased locally near the trek site. Contact your airline for current guidelines regarding checked and carry-on luggage.

Motor Vehicle Checklist

Owner's name _____

Address _____

City, state _____ Zip _____

Driver's license no. _____ Renewal date _____

Telephone _____

Insurance company _____ Amount of liability coverage $ _____

Other drivers of same vehicle (this trip only) and driver's license numbers:

_____, _____

Make of vehicle _____

Model year _____ Color _____ Auto license no. _____

Basic Safety Check

1. Seat belts for every passenger? _____
2. Tire tread OK? _____ Spare? _____ Jack? _____
3. Brakes OK? _____
4. Windshield wipers operate? _____ Fluid in reservoir? _____
5. Current inspection sticker? _____
6. Headlights and turn signals operating? _____
7. Rearview mirrors? _____
8. Exhaust system OK? _____

Additional Safety Check

1. Flares for emergencies? _____
2. Fire extinguisher? _____
3. Flashlight? _____
4. Tow chain or rope? _____
5. First-aid kit? _____

OVERNIGHT STOPS ALONG THE WAY

Your travel provisions must include planning for meals and lodging en route. Military bases generally offer low rates and decent accommodations. *Guide to Military Installations in the U.S.* lists all active military bases. It is available at low cost by telephoning 800-368-5718; by writing to Army Times Publishing Company, Fulfillment Department, 6883 Commercial Drive, Springfield, VA 22159-0500; or by e-mail to MCOCIR4@aol.com.

You may also be able to arrange to stay overnight at a school, camp, state or national recreation area, or private campground, or with a local Scouting unit. The possibilities are endless.

In planning stopping points along the route, it is important to have complete and accurate information about the accommodations that are available. You can get information directly by phoning the managers of the places where you wish to stay. Make reservations well in advance of your trip to be sure your reservations can be confirmed. Tell the managers the number of youth members and adult leaders in your party, dates and times of arrival and departure, and the services or facilities you desire.

Council Camps

There are BSA local councils in every state in the United States. Many of them have sites at their camps for groups such as yours to use. Visiting these Scout camps can afford troops and crews wonderful opportunities to camp with Scouts from other areas of the country. Some groups will want to make such an experience a main objective of their trip, and may camp and participate in the program for an extended time. Such an experience necessitates long-range planning and, of course, the approval of the councils involved. To learn about Scout camps, call your local council service center for the phone numbers of councils en route to your destination.

Federal, State, and Local Parks

Many approved overnight group camping facilities are available through the cooperation of the USDA Forest Service, the Bureau of Land Management, the Army Corps of Engineers, the National Park Service, and state, municipal, and county park systems. Fees vary with each campsite. Many agencies have established special rates for youth groups. Generally, these sites cannot be reserved. Therefore, do not send a reservation fee. Even where reservations are not necessary, a postcard notification of arrival time will help park superintendents or forest rangers; often they will have a site for a Scout or Venturing group that shows that consideration. Be sure to notify the park superintendent or forest ranger in case of any delays or cancellations.

Military Installations

Many Army, Navy, Air Force, Marine Corps, and Coast Guard installations are located throughout the United States. The military services are interested in Scout tour groups visiting their bases and stations.

In many instances, overnight accommodations in barracks or camps can be provided for Scout and Venturing tour groups; however, the military services cannot offer these facilities in direct competition with commercial campgrounds or hostelries. Arrangements for overnight stops must be made in advance or your group will not be accepted. Your plans should allow time for an orientation tour of the base or facility, to allow your group to understand better the mission of the base as it applies to the defense of the United States.

Meals can be furnished at reasonable costs and, where bedding is provided, there may be a small charge for linens and towels. Groups should carry their own bedding in case they have to sleep on the floor.

To request information about accommodations, base tours, and nearby points of interest, address all correspondence to the public affairs officer of each installation to be visited.

To maintain good relations with our military hosts, Scout or Venturing tour groups should observe the following considerations.

- If the group is unable to arrive as scheduled, notify the installation.
- If plans change, notify the installation at least 24 hours before scheduled arrival.
- In case of emergency or breakdown, telephone the installation immediately regarding the change in scheduled arrival.
- If the number in your group changes by more than three persons, notify the installation before arrival so that necessary adjustments can be made. (Note, for example, that Scout group leaders are responsible for defraying costs of meals ordered and not consumed.)

Adult leaders with military connections should not attempt to use their reserve or military status to secure any special services or favors or changes of plan for the group.

Caution: Instruct all tour members to listen to adult leaders, to remain together, and to avoid roaming military areas indiscriminately. Be sure to tell the group that unknown terrain and all military equipment must be respected for reasons of safety and are not to be investigated. All tour groups must understand and adhere to any instructions given to them by military personnel at an installation.

Your group should understand that sometimes military installations may be in practice or training alerts at the time of your arrival, so last-minute cancellation or delay of your reservations is a possibility. Be prepared; have a backup facility or campsite in mind.

Sample Budget

Item	*Total Cost*	*Per-Person Cost*
Transportation This may or may not include meals. Check insurance coverage on packs and luggage if traveling by commercial carrier.		
Lodging Include cost of overnight stops to and from your trek, including user fees for public campgrounds.		
Meals Each individual can pay for his or her own meals en route, or meal expenses can be pooled. Include tips and snacks.		
Training Determine cost of meals and other costs for weekend training.		
Use or Participation Fees Many public areas now charge a use fee. Find out how much these fees are and include them here.		
Insurance Include vehicle insurance and accident and sickness insurance if not already covered.		
Equipment Purchase or Rental Include purchase or rental of crew equipment such as tents, backpacks, stoves, and maps.		
Side Trips and Tours Include costs of any special side trips or activities that are planned.		

Regulations

On arrival at an overnight group campsite, whether a park, forest campground, Scout camp, youth hostel, military installation, YMCA, YWCA, or college, the leader should check in with the person in charge and request a copy of the rules and regulations governing the use of the area. Leaders should then familiarize all the members of the group with the rules.

Tour Plan

The tour plan is a checklist for best practices to be prepared for safe and fun adventure. Completing the tour plan may not address all possible challenges but can help ensure that appropriate planning has been conducted, that qualified and trained leadership is in place, and that the right equipment is available for the adventure.

In addition, the plan helps to organize safe and appropriate transportation to and from an event, and defines driver qualifications and minimum limits of insurance coverage for drivers and vehicles used to transport participants.

Please complete and submit this plan at least 21 days in advance to ensure your council has enough time to review the plan and assist you in updating the plan if it is found defective. When the review is complete, the second half of the plan is returned to you to carry on your travels.

Times when a tour plan must be submitted for council review include the following:

- Trips of 500 miles or more
- Trips outside of council borders not to a council-owned property
- Trips to any national high-adventure base, national Scout jamboree, National Order of the Arrow Conference, or regionally sponsored event
- When conducting the following activities outside of council or district events:
  - Aquatics activities (swimming, boating, floating, scuba, etc.)
  - Climbing and rappelling
  - Orientation flights (process flying plan)
  - Shooting sports
  - Any activities involving motorized vehicles as part of the program (snowmobiles, boating, etc.)
  - At a council's request (contact your local council for additional guidelines or regulations concerning tour plans)

Regardless, the tour plan is an excellent tool that should be included in preparation for all activities, even those not requiring it. It guides a tour leader through itineraries, travel arrangement, two-deep leadership, qualifications of supervision, and transportation.

More information can be found at http://www.scouting.org/sitecore/content/Home/HealthandSafety/TourPlanFAQ.aspx.

AMBASSADORS OF GOODWILL

The crew leader should remind your group that they are ambassadors of goodwill for their community and for Scouting. Agree beforehand to observe good manners. Scouts and Venturers represent not only their unit and chartered organization, but also the Boy Scouts of America. Impress on your group the importance of good conduct at all times.

Here are a few guidelines for you and your crew to remember as you travel to and from your high adventure.

- Wear your Scout or Venturing uniform proudly. You are members of the Boy Scouts of America, a highly regarded youth organization. A Scout or Venturer properly uniformed, sharp in appearance, courteous, and well-mannered is the best medium for public relations.
- Use the buddy system: No person ever leaves the group alone.
- Telephone ahead to your next day's stopping place. It is inconsiderate to drop in or cancel without adequate notification.
- Do not use tobacco in public or in front of youth members. It may be offensive to those around you, and illegal in some locations.
- Express appreciation to those who extend courtesies to you along the way.

BUDGET

The finances of adventures that require special equipment or involve long-distance travel should be planned with care. In addition to calling travel agencies to learn about transportation costs, you might want to go to several grocery stores to compare food prices. Carefully estimate *all* the expenses of your trip. Develop a budget that includes not only transportation, lodging, and meals, but also training expenses, permits, campground fees, insurance, etc. It is a good idea to include a 5 percent contingency fee to cover unexpected expenses such as a delay en route or replacement of damaged equipment.

Once you have determined all possible expenses including a contingency fee, the group can decide how to pay for them. To determine each person's share, add up the costs and divide the total by the number of participants in your group. Can you each afford your share? If not, you might need to alter your plans, although for exciting, extended opportunities such as the treks offered by high-adventure programs, you can organize weekend and summer work projects to earn the funds you need.

You may want to sponsor several fund-raising events to help reduce the cost to each participant. Unit fund-raising endeavors can soften the impact on family budgets and involve youth in earning their way. Paying your way is an aspect of character development—one of the aims of the Boy Scouts of America. Youth members can feel a sense of satisfaction when they are involved in these endeavors. Pancake suppers, collections for recycling, and popcorn and ticket sales are just a few of countless possibilities for unit fund-raising.

You will also need to develop a schedule of fee payments if the total payment is not collected at one time. Consider under what circumstances you will refund monies paid if someone has to drop out. Inform parents of the requirements so that no one is surprised.

Funds for all anticipated expenses should be on hand before the trip begins and earned by means in accordance with the policies of the Boy Scouts of America. Each unit fund-raising activity should be approved by your local council. Use the Unit Money-Earning Application for your money-earning projects (see sample in the appendix).

Determine in advance whether money left over at the end of the trip will be refunded or applied toward the next trip. This should be determined before fees are paid for the current adventure so that participants, parents, and leaders know the plan in advance.

INSURANCE

Consider the possibility that an accident might befall your party, and take proper steps in advance not only to eliminate potential hazards, but also to protect yourself and others responsible for the trip. An adequate emergency fund will cover minor emergencies.

Automobile Liability Insurance

The greatest single risk on a trip is a motor vehicle accident. Make plans in advance for sound and adequate insurance coverage.

In most states, public carriers (i.e., railroads, scheduled airlines, and scheduled or chartered bus lines) are required by law to carry liability coverage. With other types of transportation, however, the owners, drivers, tour leaders, and the Boy Scouts of America could share responsibility and liability in case of an accident.

Adequate Coverage

The type and capacity of a vehicle and the number of passengers carried have a direct bearing on the amount of coverage needed. Limits of liability that constitute adequate coverage will vary in different sections of the country.

Automobile liability insurance will provide financial protection up to the limits of the policy for the owner or driver of the vehicle, or those named in the policy, for liability arising from the use of the vehicle.

The accompanying table of minimum recommended insurance coverage represents the amounts that should be carried as an absolute minimum. Higher coverage is recommended. The additional expense for higher coverage is comparatively low.

Public Liability and Property Damage Insurance Coverage

Passenger car, station wagon, or truck*†

Recommended coverage	$ 50,000 per person $100,000 per accident $ 50,000 property damage

Van, RV, and passenger bus (applies only to non-commercial carriers of 10 or more passengers)*†

Required coverage	$100,000 per person $500,000 per accident $100,000 property damage or $500,000 combined single limit

*All vehicles MUST be covered by a liability and property damage insurance policy. The amount of this coverage MUST meet or exceed the insurance requirements of the state in which the vehicle is licensed. Also, the coverage can be a combined single limit of $500,000.

†All vehicles used in travel outside the United States must carry an approved liability and property damage insurance policy that complies with or exceeds the requirements of that country.

Types of Protection

The only function of liability and property damage insurance is to pay for damage or injury resulting from an auto accident. Insurance transfers the financial responsibility of the user or operator to the insurance company.

Automobile liability insurance is not accident insurance. Don't confuse the two. Group accident and health insurance, which provides direct reimbursement to the person involved in an accident up to the amount of the policy, is also available. Leaders and parents of Scouts or Venturers are encouraged to purchase this type of insurance to cover their youths for all Scouting activities.

Group Accident and Health Insurance

Group accident and health insurance coverage for Scouts and Scouters furnishes medical reimbursement in case of injury with lasting consequences, within the limits of the policy amounts. Different forms of coverage are available, depending on your council or chartered organization. You should verify the insurance coverage available.

Although Scouting high-adventure programs are designed for safety, accidents do happen. It is recommended that units purchase accident insurance such as the coverage arranged through Mutual of Omaha and recommended by the Boy Scouts of America. The insurance coverage offered by the Mutual of Omaha plan provides benefits, while the coverage is in force, for injuries to a registered Scout or Scouter, anywhere in the world, while (a) participating in any official activity of the Boy Scouts of America or Learning for Life or, (b) traveling directly to or from such activities (travel is not limited to travel "as a group").

The medical benefits provided under group accident and health insurance plans are not intended to replace family health insurance. They are designed to assure prompt medical attention is made available without concern for the payment of bills, especially in an emergency. Unit leaders should contact the local council for more information regarding enrollment, renewal, and claims procedures.

For council-sponsored high-adventure activities, the Campers Accident and Sickness Insurance Plan applies. Covered medical expenses are limited to $6,000, but this benefit is increased to $25,000 for medically necessary treatment due to the loss of sight in both eyes, dismemberment, paralysis, irreversible coma, complete loss of speech, or loss of hearing in both ears. The plan pays for the first $150 without regard to other available benefits.

In addition, many local councils participate in the Council Accident and Sickness Insurance Plan, which combines the benefits provided under unit and campers' plans. If your council participates, you have accident and sickness coverage for all authorized activities. An adult leader should carry claims forms and medical records for the entire group. The crew leader and other adult leaders should know where these are kept.

Leaders should point out to parents and youth that they are paying for such insurance so that there can be no assumption of responsibility on the part of the council or unit to pay for medical expenses.

CHAPTER 4

PROMOTION AND PREPARATION

When your crew has chosen a high-adventure activity and decided where and when to go, how to get there, and how to fund the trek, then it's time to promote and to prepare for the experience. Promotion helps secure the support of parents and also informs the community of your plans. Preparation helps ensure that every member of the crew will meet the challenge and enjoy the adventure.

PARENTS' NIGHT

A parents' night is a good way to promote the high-adventure experience and to share information with parents and youth. If the council produces a video or slides of its high-adventure program, these can be shown, or perhaps a previous participant has a home video. When parents can see and hear what the program involves, their enthusiasm builds for permitting their son or daughter to participate.

A parents' night should be used to communicate the plans and details of the trip, including

- Introduction of the leaders
- Dates and times of departure and return
- Cost for the trip and how it will be funded
- Personal expenses not covered by trip fees (film, snacks, souvenirs, etc.)
- Clothing and equipment needed by each participant
- Means of transportation/drivers
- Overnight stops and side tours
- Physical examination required
- Physical conditioning and preparatory treks
- Review of the risks involved
- Emergency contact
- Fees and payment schedule
- Standards of conduct
- Who pays if a youth is sent home for medical or disciplinary reasons

- To acquaint parents and youth with the council high-adventure program
- To share with them the calendar of events leading up to departure
- To inform them of procedures regarding payment of fees, medical forms, equipment needs, plan en route to and from the program, age requirement
- To have parents meet the leaders of the expeditions

COUNCIL HIGH-ADVENTURE PARENTS' RALLY

A Suggested Program

Opening

- Have maps posted on wall with photos of previous trips.
- Lay out a table with snapshots, souvenirs, mementos, etc.
- Display personal equipment needed and have a packing demonstration.

Meeting

- Welcome and introductions
- What is council high adventure?
  - Present a talk by a youth member or adviser who has been to the program and slides of the previous year's trek. Keep this fast-paced and limited to 30 minutes.
- Administrative details:
  - Discuss possible risks involved and how they will be managed.
  - Explain the budget and items within the budget (use flip chart or handouts).
  - Remind participants of fee payments; emphasize deadlines.
- Travel plans—instructions:
  - Uniform
  - List of personal equipment required for the trek
  - Packing of items needed for the trek (recommend the official BSA pack and frame)
  - Small carrying bag for items essential while traveling
  - Boots for hiking—lightweight, comfortable, well broken in
  - Guide for pocket money—how much?
  - Organization of crews
  - Plans for shakedown hike(s) and camp(s)
- Distribute application forms and collect the $_____ reservation fee.
- Have a question-and-answer period.

Closing

- Close with a short inspirational message from a youth member or adult leader.

Note: Additional organizational meetings may be necessary.

Suggestion for Subsequent Meeting

- Plan a cookout using dehydrated and freeze-dried menus, and invite parents.

Promotion and Preparation Plan

When	A Suggested Plan	Your Checklist
August	Reserve dates for participation in council high-adventure program.	
	Confirm two-deep adult leadership.	
October	CONDUCT PARENTS' RALLY.	
	Invite prospects and parents.	
	Make program exciting.	
	Share risk advisory statement (see page 25) with parents.	
	Distribute schedule of fee payments.	
	Sign up 100% of quota by end of month. (Your quota is the number of people for whom reservations have been made for program participation.)	
November	Arrange transportation and overnight accommodations to and from council high-adventure base.	
December	Unit committee meets with all selected expedition leaders and reviews plans.	
	Make plans for training and parents' meeting.	
	Obtain health and medical records.	
January	Schedule medical exams.	
February	Develop physical training plan.	
March	Develop plans for the summer.	
	Conduct series of training experiences. Start easy and end with a challenging experience involving several days of camping, hiking with full packs, canoeing, etc.	
	Submit tour plan application through council.	
April	Send reminder for final fee payments.	
	Share accident and sickness insurance information, base address, and emergency telephone number with parents.	
May	Submit final fee payments.	
	Complete details. Confirm travel plans in writing.	
	Prepare and release story to news media.	
June	This year's expedition is set to go!	
	Bring completed health and medical records, first-aid/CPR certificates, approved tour plan, and crew roster to council high-adventure base.	
August	Evaluate trek and preparations. Prepare for next high-adventure experience.	

ANNUAL HEALTH AND MEDICAL RECORD

In order to provide better care for its members and to assist them in better understanding their own physical capabilities, the Boy Scouts of America recommends that everyone who participates in a Scouting event have an annual medical evaluation by a certified and licensed health-care provider—a physician (MD or DO), nurse practitioner, or physician assistant.

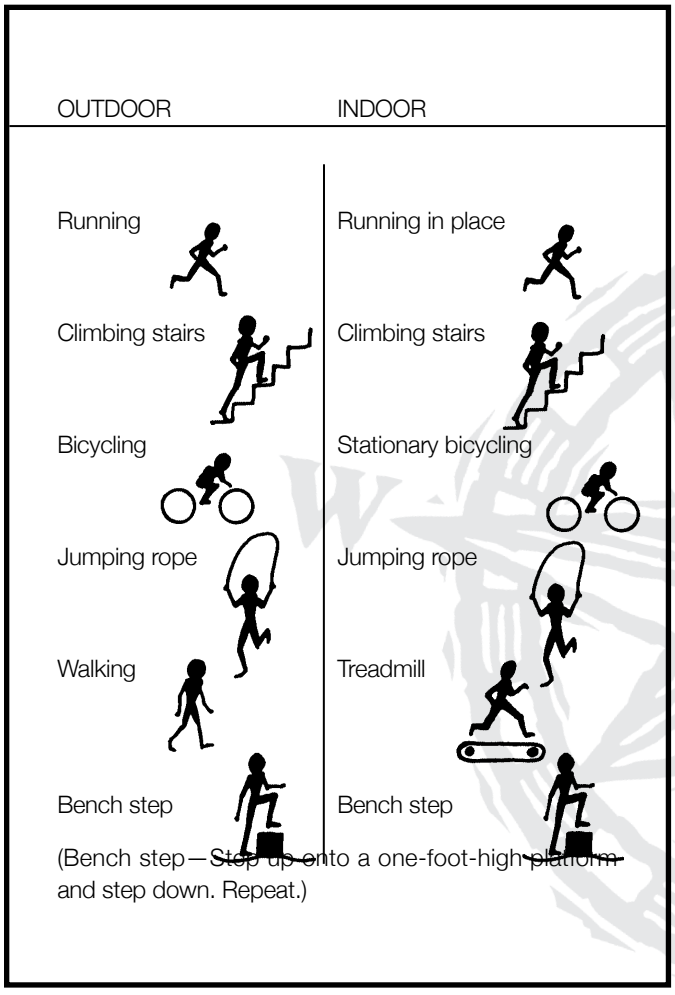
Providing your medical information on this four-part form will help ensure you meet the minimum standards for participation in various activities. Note that unit leaders must always protect the privacy of unit participants by protecting their medical information.

Parts A and B are to be completed at least annually by participants in all Scouting events. This health history, parental/guardian informed consent and hold harmless/release agreement, and talent release statement is to be completed by the participant and parents/guardians.

Part C is the physical exam that is required for participants in any event that exceeds 72 consecutive hours, for all high-adventure base participants, or when the nature of the activity is strenuous and demanding. Service projects or work weekends may fit this description. Part C is to be completed and signed by a certified and licensed health-care provider—physician (MD or DO), nurse practitioner, or physician assistant. It is important to note that the height/weight limits must be strictly adhered to when the event will take the unit more than 30 minutes away from an emergency vehicle, accessible roadway, or when the program requires it, such as backpacking trips, high-adventure activities, and conservation projects in remote areas.

Part D is required to be reviewed by all participants of a high-adventure program at one of the national high-adventure bases and shared with the examining health-care provider before completing Part C.

For more information on the Annual Health and Medical Record, visit http://www.scouting.org/scoutsource/HealthandSafety/ahmr.aspx.



(Bench step—Step up onto a one-foot-high platform and step down. Repeat.)

GETTING IN SHAPE

To enjoy a high-adventure experience, everyone who plans to go on a trek should be physically conditioned. Any trek is physically demanding. Council high-adventure programs may involve portaging a canoe or carrying a 30- to 40-pound backpack, or strenuous physical activity such as cross-country skiing or bicycling. Steep trails, high elevations, long distances, and inclement weather impose additional demands. The more difficult your planned trek, the more time you will need to devote to getting in shape. A regular program of physical conditioning for at least three to six months before a trek is essential. A longer period is required for those who are more than 25 pounds overweight and for those unaccustomed to physical exercise.

Developing an Exercise Plan

A program of regular aerobic exercise is highly recommended. Plan to exercise for 30 to 60 minutes, three to five times a week. Exercise at an intensity that boosts your pulse rate to about 75 percent of your maximum. An average maximum heart rate is 220 minus your age.

Do exercises that you enjoy. Jogging, running uphill or up long flights of stairs, and hiking with a full pack are excellent preparation. How fast you run or how far you go is not nearly as important as regular exercise. Other aerobic exercises such as swimming, bicycling, skiing, stationary cycling, aerobic exercise classes, and walking are also excellent.

Exercise individually or with other members of your crew. Set aside regular periods of time to do it. Start slowly and gradually increase the duration and intensity of your exercises. Plan to be in top physical shape for an extended trek. You'll enjoy your experience more and be less likely to have a medical problem.

Starting Out

Trying to do too much in the beginning can cause strained muscles and pulled ligaments. If possible, enlist the help of a school physical education teacher or coach to help develop an exercise program that takes into consideration crew members' current physical condition. Work out slowly at first so that muscles can adjust to new activities. You and your crew can then get a feel for how far, how fast, and how hard you can exercise without hurting yourselves. If you do much running, wear shoes that give feet adequate cushioning and support.

Warming Up

Warming up at the beginning of an exercise session stretches and loosens muscles and prepares them for action, and gradually raises heart rate and temperature. The more strenuous the exercise will be, the longer and more vigorous a warmup period is needed.

Many athletes spend fifteen minutes or more going through stretching routines. Others begin a session with slow, easy exercises or a short game of catch. Runners may start by jogging very slowly for a few hundred yards, and gradually increase their speed as they feel their muscles loosening.

Recording Workouts

Keep track of when and how you exercise. By writing down the routines you use and the number of repetitions of each exercise, you'll have a record of your physical progress that will give you a sense of accomplishment as it reminds you when to exercise next. Calendars or small notebooks make good record keepers. Write your entries immediately after you exercise.

Anyone who has questions about physical conditioning should contact a physician.

Training

The best way to train for a high-adventure trek is to backpack, canoe, climb, cycle, ride horses, go skiing or sailing, or do whatever you will be doing during the trek. It is highly recommended that everyone in a high-adventure crew fulfill the requirements for the related merit badge, such as Backpacking, Canoeing, Climbing, Cycling, Horsemanship, Small-Boat Sailing, or Whitewater. Fulfilling these requirements will enable all crew members to enjoy a high-adventure trek. The Venture activity pamphlets—including *Backpacking, Caving, Cycling, Orienteering, Rock Climbing and Rappelling,* and *Whitewater*—also have excellent tips for preparing for a high-adventure trek.

Make a crew's preparatory hikes and treks short and easy, and gradually increase the difficulty. You'll have time to get acquainted with one another, practice using equipment, and hone skills while becoming accustomed to the rigors of the outdoors. Gradually extend the length and duration of outings so the physical development of crew members can keep pace.

For instance, if you are preparing for a backpacking trek, select a hilly area for your training. Start with a short hike and a light pack. Increase the mileage and your pack weight as your training progresses. Work up to several day hikes carrying a full backpack, then schedule several overnight experiences. This will help you sharpen your outdoor skills as well as prepare you physically. It is important to hike often enough, while carrying a pack and wearing the boots that you will use on the high-adventure trek, to toughen your feet and break in your boots.

Suggested Program of Conditioning and Training

Month	Activity
January	Complete health history on individual medical forms and get parent's approval (signature). Be examined by a physician or osteopath. Call physician's attention to the rigors of a high-adventure trek. Ask the physician about any special medical needs or areas of concern. If overweight, get physician's recommendation for how to lose weight through dieting and/or exercise.
February	Walk, jog in place, swim, or pedal exercise bike indoors for 20 minutes or more at least three to five times a week. Gradually increase the length and the intensity of exercises.
March	When weather permits, jog, run, or walk outdoors. If you will be paddling or climbing, do some weight lifting. Start with 20-minute sessions and gradually increase the length and the intensity.
April	Continue exercising. Schedule a couple of 5- to 10-mile day hikes. Carry a full backpack on the second hike. Or paddle a canoe or raft and do a portage on the second trip.
May	Continue exercising. Schedule at least two overnight backpacking treks of 10 to 20 miles or two canoeing trips of 20 to 40 miles. Plan the second trek to cover more-rugged terrain or increase the mileage. Depending on the high-adventure program selected, consider meeting the requirements for the appropriate merit badge. The Backpacking merit badge, for example, requires three three-day backpacking treks of at least 15 miles each, and one five-day trek covering at least 30 miles.
June–July	Continue exercising until the day you depart for high adventure. Come to the trek in top physical and mental condition, ready for vigorous physical activity.

MENTAL FITNESS

Physical and mental fitness are tightly intertwined. People who keep themselves well-conditioned physically have done much to ensure their ability to think clearly and to concentrate for long periods of time.

While we don't often think of exercising our minds in the same rigorous way we do our bodies, there are ways to increase one's ability to think clearly under pressure, to develop leadership qualities, and to enjoy more fully the experience of being in the wild. The time may come when alertness, resourcefulness, and mental toughness will get a crew through a tight spot, but crew members must prepare for that possibility now, long before the difficult situation arises.

Be thorough. Stick with every task until it's done and done right. Perseverance is just as essential in finishing a project at work or a homework assignment as it is for finding shelter in a bad storm, or keeping an accident victim safe and warm until help arrives.

Be confident. Confidence comes through training and experience. Learn what to expect in the out-of-doors by reading, asking questions, and watching others. Then practice backcountry skills until they become instinctive.

Be assertive. Wisely take advantage of new experiences. It's important to push beyond what you've done before, but only in reasonable, safe ways. Take the lead to get things accomplished. Assertive crew members who see camp tasks that need doing take the initiative to complete them. High-adventure trekkers who aren't sure where they are pull out map and compass and pinpoint their location. If they believe a river is too swift to cross or a snowfield too steep to traverse, they're assertive enough to turn back and take a safer route.

Be willing to learn from successes and failures. Campers with many years of experience in the woods are not necessarily good campers if they've made the same mistakes over and over. When things go well during a trek, figure out why and try to repeat them. When things go badly, determine what went wrong in the planning or execution of the trip, and do things differently next time.

Be conscientious. There aren't many people in the backcountry, and often no one is around to watch what you are doing. Because of that, your activities must be guided by your own standards. Camp and hike without leaving a trace, and be ready at all times to help other travelers.

One excellent way to prepare for a trek is to have the crew participate in Project COPE. Project COPE—a Challenging Outdoor Personal Experience—includes a variety of adventure-challenge events. The seven goals of Project COPE—teamwork, communication, trust, leadership, decision making, problem solving, and self-esteem—foster positive crew dynamics that will enhance the crew's high-adventure experience. For more information, refer to the *Project COPE* manual, No. 34371.

RISK ADVISORY

Parents, guardians, and potential participants in high-adventure experiences are advised that journeying to and from council high-adventure programs and participating in them can involve exposure to accident, illness, or injury associated with physically demanding activities in remote, often rugged areas. Campers may be exposed to occasional severe weather such as lightning, hail, flash floods, and excessive heat or cold. Other possibilities include injuries from falls, motor vehicle accidents, accidents on the water, asthma- and diabetes-related incidents, heart attacks, heat exhaustion, hypothermia, and horseback-riding accidents.

Each participant, including adult leaders and youth members, must have a medical examination by a licensed health-care practitioner within a 12-month period preceding the event.

Wild animals such as bears, mountain lions, and venomous snakes usually present little danger if proper precautions are taken. (See chapter 8.) Speak with previous participants for further information concerning risks associated with a particular high-adventure activity, and measures that can be taken to avoid accidents.

Council high-adventure staff members are trained in preventing accidents and in first aid and CPR, and are prepared to assist in recognizing and responding to accidents, injuries, and illnesses. Medical and search-and-rescue services are available in response to accidents or emergencies.

RECOMMENDATIONS REGARDING CHRONIC ILLNESSES

Cardiac or Cardiovascular Disease

Adults who have had any of the following should undergo a thorough evaluation by a physician before considering participation in high adventure.

1. Angina (chest pain caused by coronary artery disease or congenital heart disease)
2. Myocardial infarction (heart attack)
3. Surgery or angioplasty to treat coronary artery disease
4. Stroke or transient ischemic attacks
5. Claudication (leg pain felt during exercise; caused by hardening of the arteries)
6. Family history of heart disease in individuals under age 50
7. Weight in excess of recommended guidelines (see page 27)

The physical exertion of high adventure may cause a heart attack or stroke in susceptible persons. An adult who is 40 years of age or older or who has experienced any of the conditions above should speak with his or her doctor about the possible need for an exercise stress test with thallium (a metallic element that helps in the diagnosis of stress) within three to six months before the scheduled trek to assess the

adequacy of the heart muscle's blood supply. It is recommended that an adult who is over 40 years of age who has *not* experienced any of the conditions above have an ordinary stress test without thallium. **Even if the stress test is normal, the results of testing done without the exertions of a trek do not guarantee safety.** If test results are abnormal, the individual is advised not to participate.

Hypertension (High Blood Pressure)

The combination of stress and altitude appears to cause significant increase in blood pressure in many individuals participating in high adventure. Occasionally, hypertension reaches such a level that it no longer is safe for an individual to engage in strenuous activity. Persons whose blood pressures are increased mildly (to greater than 135/85) may benefit from treatment before coming to a high-adventure base and during the trek. Individuals who are hypertensive (having blood pressure greater than 140/90) are urged strongly to be treated and to have normal blood pressure (less than 135/85) before arriving at the base of operations. Medications should be continued during the high-adventure trek.

Each participant 18 years of age or older will usually have his or her blood pressure checked upon arrival at a high-adventure base. Those individuals with blood pressure greater than 150/90 will probably be kept off the trek until the blood pressure decreases.

Insulin-Dependent Diabetes Mellitus

Exercise and the type of food eaten affect insulin requirements. Any individual with insulin-dependent diabetes mellitus should be able to monitor personal blood glucose and know how to adjust insulin doses based on these factors. The diabetic person also should know how to give a self-injection. Both the diabetic person and one other person in the group should be able to recognize indications of excessively high blood sugar (hyperglycemia or diabetic ketoacidosis) and to recognize indications of excessively low blood sugar (hypoglycemia). The diabetic person and at least one other individual in the group should know the appropriate initial responses for these conditions.

It is recommended that the diabetic person and one other individual (in case of accidents) carry insulin on the trek and that a third vial be kept at the base for backup. Insulin can be carried in a small thermos, which can be resupplied with ice or cold water at intervals.

A diabetic person who has had frequent hospitalizations for diabetic ketoacidosis or who has had frequent problems with hypoglycemia probably should not participate in a high-adventure trek until better control of the diabetes has been achieved.

Excessive Body Weight

Any participant or adviser who exceeds the maximum weight limits on the recommended weight chart should not be permitted to participate in a high-adventure trek. Anyone who exceeds these limits is at extreme risk for health problems.

Seizure Disorders or Epilepsy

A seizure disorder or epilepsy does not exclude an individual from participating in high adventure. However, the seizure disorder should be well-controlled by medications. A seizure-free period of at least one year is considered adequate. Exceptions to this guideline may be considered by medical staff and will be based on the specific type of seizure and the likely risks to the individual and to other members of the crew.

Asthma

It is expected that an individual with asthma will have consulted a physician in order to establish control of the condition. The asthma should be controlled to essentially normal lung function with the use of oral or aerosol bronchodilators. The patient should bring ample supplies of medication on the trek. Individuals undergoing allergic desensitization therapy who require injections on the trek should bring their medications and store a portion at base camp upon arrival.

At least one other crew member should know how to recognize an asthma attack, how to recognize worsening of an attack, and how to administer bronchodilator therapy. Any person who is approved to go on a trek who has required medical treatment for asthma within the past six years should carry a full-size prescribed inhaler on the trek. Asthmatic individuals whose exercise-induced asthma cannot be prevented with bronchodilator premedication, who require systemic corticosteroid therapy, or who have required multiple hospitalizations for asthma should not attempt to participate in the strenuous activities of high adventure.

Recent Orthopedic Surgery

Every high-adventure participant will put a great deal of strain on feet, ankles, and knees. Experience has shown that participants who have had orthopedic surgery or problems within the past six months find it difficult or impossible to negotiate steep, rocky trails. These problems should be reviewed by the medical staff to determine if a person's participation in a trek will be permitted. A person with a cast on any extremity may participate only if approved by the medical staff.

Medications

Each high-adventure participant who has a condition requiring medication should bring an appropriate supply in a locked pouch. In certain circumstances, duplicate or even triplicate supplies of vital medications are appropriate. Leaders should be aware of medications needed and monitor their use.

An individual should always contact the family physician first and call the council if there is a question about the advisability of participation. The medical staff for a high-adventure program reserves the right to make medical decisions regarding any individual's participation.

WEIGHT GUIDELINES FOR HIGH-ADVENTURE ACTIVITIES

Each participant and adviser who will take part in a high-adventure trek is encouraged to meet the recommended guidelines in the height-weight chart below. Every backpacking trek means carrying a backpack weighing 30 to 40 pounds. Steep trails and high elevations make this even more rigorous. Most canoeing treks involve portaging a 70- to 90-pound canoe over some distance on frequently rocky trails. Participants who fall within the guidelines are more likely to have an enjoyable trek and to avoid incurring health risks.

The right-hand column shows the **maximum recommended weight** for participating in a high-adventure trek. Anyone who exceeds these limits is at extreme risk for health problems. Individuals who exceed these limits may not be permitted to participate in a high-adventure trek.

	Recommended Weight (lbs.)*		
Height	**19–34 Years**	**35+ Years**	**Maximum**
5'0"	97–128	108–138	166
5'1"	101–132	111–143	172
5'2"	104–137	115–148	178
5'3"	107–141	119–152	183
5'4"	111–146	122–157	189
5'5"	114–150	126–162	195
5'6"	118–155	130–167	201
5'7"	121–160	134–172	207
5'8"	125–164	138–178	214
5'9"	129–169	142–183	220
5'10"	132–174	146–188	226
5'11"	136–179	151–194	233
6'0"	140–184	155–199	239
6'1"	144–189	159–205	246
6'2"	148–195	164–210	252
6'3"	152–200	168–216	260
6'4"	156–205	173–222	267
6'5"	160–211	177–228	274
6'6"	164–216	182–234	281

*This table is based on the revised Dietary Guidelines for Americans from the U.S. Department of Agriculture and the Department of Health and Human Services.

IMMUNIZATIONS

Verification of the following protections is strongly recommended before participation in activities conducted by the Boy Scouts of America.

- Tetanus and diphtheria toxoid within the past ten years
- Measles, mumps, and rubella (MMR) given between 15 months and 12 years of age
- Trivalent oral polio vaccine (TOPV); four doses since birth

Religious Beliefs and Medical Care

The following is the policy of the Boy Scouts of America regarding medical requirements.

Medical examinations for camp attendance are required of all campers for the protection of the entire camp group. The immunization requirement is waived for persons with religious beliefs against immunization.

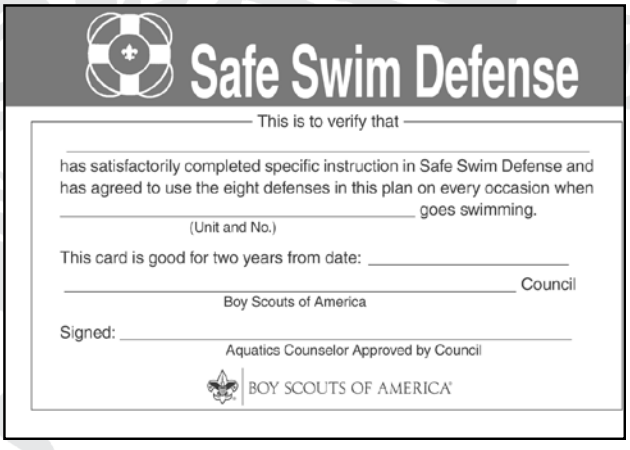
SAFE SWIM DEFENSE

Most accidents in aquatics activities are caused by the lack of adult supervision and discipline. Almost every accidental drowning can be attributed to the violation of one or more Safe Swim defenses. Safe Swim Defense is required for any trek or activity that includes swimming. Before a BSA group may engage in swimming activities of any kind, a minimum of one adult leader must complete Safe Swim Defense training; have a commitment card (No. 34243) with them; and agree to use the eight defenses in this plan. (One of the best opportunities for Safe Swim Defense training is summer camp.)

The eight defenses are:

1. Qualified Supervision

All swimming activity must be supervised by a mature and conscientious adult age 21 or older who understands and knowingly accepts responsibility for the well-being and safety of youth members in his or her care, who is experienced in the water and confident of his or her ability to respond in the event of an emergency, and who is trained in and committed to compliance with the eight points of BSA Safe Swim Defense. (It is strongly recommended that all units have at least one adult or


Safe Swim Defense

This is to verify that

_____

has satisfactorily completed specific instruction in Safe Swim Defense and has agreed to use the eight defenses in this plan on every occasion when _____ goes swimming.
(Unit and No.)

This card is good for two years from date: _____

_____ Council
Boy Scouts of America

Signed: _____
Aquatics Counselor Approved by Council

BOY SCOUTS OF AMERICA

older youth member currently certified as a BSA Lifeguard to assist in the planning and conduct of all swimming activity.)

2. Physical Fitness

Require evidence of fitness for swimming activity with a complete health history from physician, parent, or legal guardian. The adult supervisor should adjust all supervision, discipline, and protection to anticipate any potential risks associated with individual health conditions. In the event of any significant health conditions, the unit leader should require proof of an examination by a physician.

Those with physical disabilities can enjoy and benefit from aquatics if the disabilities are known and necessary precautions are taken.

3. Safe Area

Have lifeguards and swimmers systematically examine the bottom of the swimming area to determine varying depths, deep holes, rocks, and stumps. **Mark off the area for three groups: not more than 3½ feet deep for nonswimmers; from shallow water to just over the head for beginners; water not more than 12 feet deep for swimmers.** For boundary markers, use poles stuck in the bottom or plastic bottles, balloons, or sticks attached with twine to rock anchors. Enclose nonswimmer and beginner areas with buoy lines (twine and floats) between markers. Mark the outer bounds of the swimmer area with floats. Be sure that water depth is at least 7 feet before allowing anyone to dive into the water from the side of a pool or from piers or floating docks.

4. Lifeguards on Duty

Designate as lifeguards two persons who are capable swimmers. Station them ashore, equipped with lifeline (100-foot length of quarter-inch nylon rope). In an emergency, one carries out the line and the other feeds it out from shore, then pulls in the partner and the person being assisted. In addition, if a boat is available, crew it with two persons, preferably capable swimmers, one rowing and the other equipped with a 10-foot pole or an extra oar. Provide one guard for every 10 participants.

5. Lookout

Station a lookout on the shore where it is possible to see and hear everything in all areas. The lookout may be the adult in charge of the swim and may give the buddy signals.

6. Ability Groups

Tests to determine swimming ability should be renewed each year at the beginning of the season. With the results, leaders can divide the youth into three classifications—nonswimmers, beginners, and swimmers—and keep each group in its own area.

7. Buddy System

Pair every youth with another in the same ability group. Buddies check in and out of the swimming area together. Check everyone in the water about every 10 minutes, or as needed to keep the buddies swimming and together. The adult in charge signals for a buddy check with a single blast of a whistle or ring of a bell and a call of "Buddies!" The adult counts slowly to 10 while buddies join and raise hands and remain still and silent. Guards check all areas, count the pairs, and compare the total with the number known to be in the water. Signal two blasts or bells to resume swimming. Signal three blasts or bells for checkout.

8. Discipline

Be sure everyone understands and agrees that **swimming is allowed only with proper supervision and use of the complete Safe Swim Defense.** Advise parents of this policy. When the participants know the reason for rules and procedures, they are more likely to follow them. Be strict and fair, showing no favoritism.

SAFETY AFLOAT



Safety Afloat has been developed to promote boating and boating safety and to set standards for safe unit activity afloat. Before a BSA group may engage in an excursion, expedition, or trip on the water (by canoe, raft, sailboat, motorboat, rowboat, tube, or other craft), adult leaders for such activity must complete Safety Afloat Training, No. 34159; have a commitment card, No. 34242, with them; and be dedicated to full compliance with all nine points of Safety Afloat. Watching the *Safety Afloat* videotape, No. AV-09002, is a good way to begin.

1. Qualified Supervision

All activity afloat must be supervised by a mature and conscientious adult age 21 or older who understands and knowingly accepts responsibility for the well-being and safety of youth members in his or her care, who is experienced and qualified in the particular watercraft skills and equipment involved in the activity, and who is committed to compliance with the nine points of BSA Safety Afloat. One such supervisor is required for each ten people, with a minimum of two adults for any one group. All supervisors must complete BSA Safety Afloat and Safe Swim Defense training, and at least one must be certified in CPR. (It is strongly recommended that all units have at least one adult or older youth member currently certified as a BSA Lifeguard to assist in the planning and conduct of all activity afloat.)

2. Physical Fitness

All persons must present evidence of fitness assured by a complete health history from physician, parent, or legal guardian. The adult supervisor should adjust all supervision, discipline, and protection to anticipate any potential risks associated with individual health conditions. In the event of any significant health conditions, the adult leader should require a medical examination by a physician.

Those with physical handicaps can enjoy and benefit from aquatics if the handicaps are known and necessary precautions taken.

3. Swimming Ability

A person who has not been classified as a "swimmer" may ride as a passenger in a rowboat or motorboat with an adult swimmer, or in a canoe, raft, or sailboat with an adult who is certified as a lifeguard or a lifesaver by a recognized agency. In all other circumstances, the person must be a swimmer to participate in an activity afloat. Swimmers must pass this test:

Jump feetfirst into water over the head in depth, level off, and begin swimming. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be swum continuously and include at least one sharp turn. After completing the swim, rest by floating.

This qualification test should be renewed annually.

4. Life Jackets

Properly fitted U.S. Coast Guard–approved life jackets must be worn by all persons engaged in activity on the open water (rowing, canoeing, sailing, boardsailing, motorboating, waterskiing, rafting, tubing, kayaking, and surfboarding). Type II and III PFDs are recommended.

5. Buddy System

All activity afloat must adhere to the principles of the buddy system. The buddy system assures that for every person involved in aquatics activity, at least one other person is always aware of his or her situation and prepared to lend assistance immediately when needed. Not only must every individual have a buddy, but every craft should have a "buddy boat" when on the water.

6. Skill Proficiency

All participants in activity afloat must be trained and practiced in watercraft handling skills, safety, and emergency procedures.

a. All persons planning to participate in unit activity on white water must complete special training conducted by an Aquatics Instructor, BSA, or qualified equivalent.

b. Powerboat operators must complete state certification and be able to meet requirements for the Motorboating merit badge or equivalent (American Red Cross, U.S. Coast Guard, U.S. Coast Guard Auxiliary, or U.S. Power Squadron).

c. Except for whitewater and powerboat operation as noted above, a minimum of three hours' training and supervised practice or fulfilling the requirements for basic handling tests is required for all unpowered craft.

7. Planning

a. Float Plan. Know exactly where the unit will put in, where the unit will pull out, and precisely what course will be followed. Determine all stopover points in advance. Estimate travel time with ample margins to avoid traveling under time pressures. Obtain accurate and current maps and information on the waterway to be traveled, and discuss the course with others who have made the trip under similar seasonal conditions. (It is preferred that an adult member of the group run the course before the unit trip.)

b. Local Rules. Determine which state and local laws or regulations are applicable. If private property is to be used or crossed, obtain written permission from the owners. All such rules must be strictly observed.

c. Notification. The float plan must be filed with the parents of participants and a member of the unit committee. For any activity using canoes on running water, the float plan must be filed with the local council service center. Notify appropriate authorities, such as Coast Guard, state police, or park personnel, when their jurisdiction is involved. When the unit returns from this activity, persons given the float plan should be so advised.

d. Weather. Check the weather forecast just before setting out, know and understand the seasonal weather pattern for the region, and keep an alert "weather eye." Imminent rough weather should bring all ashore immediately.

e. Contingencies. Planning must anticipate possible emergencies or other circumstances that could force a change in the original plan. Identify and consider all such circumstances in advance so that appropriate contingency plans can be developed.

8. Equipment

All equipment must be suited to the craft, to the water conditions, and to the individual; must be in good repair; and must satisfy all state and U.S. Coast Guard requirements. To the extent possible, carry spare equipment. On long trips or when spare equipment is not available, carry repair materials. Have appropriate rescue equipment available for immediate use.

9. Discipline

All participants should know, understand, and respect the rules and procedures for safe unit activity afloat. When youth know and understand the reason for the rules, they will observe them. When fairly and impartially applied, rules do not interfere with fun. Rules for safety, plus common sense and good judgment, keep the fun from being interrupted by tragedy.

Note: For cruising vessels (excluding rowboats, canoes, kayaks, and rafts, but including sailboats |and powerboats longer than 20 feet) used in adult-supervised unit activities by a chartered Explorer post or ship specializing in watercraft operations, or used in adult-supervised program activity in connection with any high-adventure program or other activity under the

direct control of the National Council, the standards and procedures in the *Sea Scout Manual,* No. 33239, may be substituted for the "Safety Afloat" standards.

TREK SAFELY

Young people today seek increasingly challenging activities, many of which involve trekking in backcountry or wilderness areas. Treks can include such high-adventure activities as backpacking, canoeing, caving, horse packing, kayaking, mountain biking, mountaineering, rafting, sailing, and skiing. While some treks are as short as overnight, others last a week or two. Trek Safely, the BSA's recommended procedure for organizing BSA outdoor treks, applies to overnight treks of any duration. By being aware of the seven points of Trek Safely, youth and adult leaders will be better prepared for a safe trekking experience.

Each of the following elements plays an important role in the overall Trek Safely procedure. Fun and safe overnight trekking activities require compliance with Trek Safely by both adult and youth leaders.

1. Qualified Supervision

All backcountry treks must be supervised by a mature, conscientious adult at least 21 years of age who understands the potential risks associated with the trek. This person knowingly accepts responsibility for the well-being and safety of the youth in his or her care. This adult supervisor is trained in and committed to compliance with the seven points of Trek Safely. One additional adult who is at least 18 years of age must also accompany the unit.

The lead adult is responsible for ensuring that someone in the group is currently trained in first aid appropriate to the type of trek and the environment. American Red Cross Wilderness First Aid Basic (a 16-hour course) and CPR are recommended. A signed parental informed consent form for each participant under 18 years of age may be used for adventurous activities such as whitewater, climbing, and horse packing treks.

2. Keep Fit

Require evidence of fitness with a current Annual Health and Medical Record, No. 680-001. A regular fitness regimen is recommended for trek participants. They are urged to start slowly, gradually increasing the duration and intensity of their exercise. The adult leader should adjust supervision, protection, and planning to anticipate potential risks associated with individual health conditions. Neither youth nor adults should participate in a trek or activity for which they are not physically prepared.

3. Plan Ahead

Planning a trek includes filing a tour plan with the local council service center at least a month before the departure date. The trek should match the maturity, skill level, and fitness of unit members. A youth or adult leader must secure land-use permits to use public land or written permission from the owner to cross or use private land. It is also crucial to learn about any requirements and recommendations from the local land manager. Find out about the terrain, elevation ranges, trails, wildlife, campsites, typical weather conditions, and environmental issues for the period of the trek.

Training in Leave No Trace is crucial. Units should anticipate a range of weather conditions and temperatures and develop an alternate itinerary in the event that adverse conditions develop.

4. Gear Up

Procure topographic maps, as well as current trail maps, for the area of the trek. Take equipment and clothing that is appropriate for the weather and unit skill level, is in good condition, and is properly sized for each participant. A qualified youth or adult leader ensures that participants are trained in the proper use of specialized equipment, particularly items with which they are not familiar, such as climbing ropes, ice axes, crampons, watercraft, bridles, saddles, and cross-country skis and poles. A shakedown must be conducted to be sure each person has the right equipment without taking too much.

Crew equipment includes a first-aid kit stocked with current medications and supplies. The leader reminds youth and adults to bring and take prescribed medications. Every crew must have the means to treat water for drinking by boiling it, treating it with chemicals, or using an approved water filter. When ultraviolet light (sunlight) is prevalent, it is critical that participants have adequate sun protection, including broad-brimmed hats, sunglasses, and sunscreen.

5. Communicate Clearly and Completely

Communication is one of the keys to a safe outdoor adventure, and staying in touch with home base is the first step. A youth or adult leader should complete a trip plan and share these details of the trek—including time of departure, overnight stops, the time of expected return, the trailhead (where vehicles will be parked) and the itinerary and alternate itinerary—with a contact person in the home area. At any time the itinerary changes, one of the leaders relays the changes to the contact person, who in turn relays them to the Scouts' parents. A plan for communicating with each parent is developed before the trek.

A means of electronic communication—with backup power—may be helpful should an emergency occur. The leader should carry the telephone numbers or contact information of medical and emergency services in the area of the trek. Before calling for emergency assistance, the exact location and nature of the patient's injury or illness should be determined.

Youth and adult leaders are responsible for making sure that everyone knows what to expect and what is expected of them. Leaders should communicate with each other, as well as with the entire crew, to avoid unpleasant surprises.

6. Monitor Conditions

The leaders are responsible for making good decisions during the trek, conservatively estimating the capabilities and stamina of the group. If adverse conditions develop, the group is prepared to stop or turn back. The unit is responsible for monitoring weather conditions and forecasts before and during the trek—a small National Oceanographic and Atmospheric Administration (NOAA) radio is helpful for learning current weather forecasts. Leaders continually assess conditions, including weather, terrain, group morale, food and water supplies, group physical condition, and other factors to determine the difference between what is difficult and what is dangerous. Dangerous conditions are avoided.

7. Discipline

Each participant knows, understands, and respects the rules and procedures for safe trekking and has been oriented in Trek Safely. Applicable rules should be presented and learned prior to the outing and should be reviewed with participants before the trek begins. When participants know the reasons for rules and procedures, they are more likely to follow them. Adult and youth leaders must be strict and fair, showing no favoritism.

CLIMB ON SAFELY

Climb On Safely is the recommended procedure for organizing BSA climbing/rappelling activities at a natural site or a specifically designed facility such as a climbing wall or tower.

The adult supervisor's relationship with youth should reinforce the importance of following instructions. The adult leader in charge and the climbing instructor share this responsibility. The instructor is responsible for all procedures and for safely conducting the climbing/rappelling activity. The adult supervisor works cooperatively with the climbing instructor and is responsible for all matters outside of the climbing/rappelling activity.

Each of the following points plays an important role in the overall Climb On Safely. Fun and safe climbing/rappelling activities require close compliance of Climb On Safely by the adult supervisor and instructor. These points also apply to bouldering—traversing a few feet above ground level.

1. Qualified Supervision

All climbing and rappelling must be supervised by a mature, conscientious adult at least 21 years of age who understands the risks inherent to these activities. This person knowingly accepts responsibility for the well-being and safety of the youth in his or her care. This adult supervisor is trained in and committed to compliance with the eight points of Climb On Safely. One additional adult who is at least 18 years of age must also accompany the unit. Units with more than 10 youths in the same climbing/rappelling session must have an additional adult leader at least 18 years of age for each 10 additional youth participants. In other words, a group of 11 to 20 youths requires at least three adult leaders; a group of 21 to 30 youths would require four adult leaders, and so on.

The adult supervisor is responsible for ensuring that someone in the group is currently trained in standard first aid and CPR (a 6½-hour course). In addition, Wilderness First Aid Basic (a 16-hour course) is recommended for units going to remote areas. A course of equivalent length and content from another nationally recognized organization can be substituted. A higher level of certification such as emergency medical technician (EMT), licensed practical nurse (LPN), registered nurse (RN), and licensed health-care practitioner is also acceptable.

2. Qualified Instructors

A qualified rock climbing instructor who is at least 21 years of age must supervise all BSA climbing/rappelling activities. A currently trained BSA climbing director or instructor is highly recommended. Contact your local council or regional service center to locate a qualified individual. The climbing instructor has successfully completed a minimum of 10 hours of instructor training for climbing/rappelling from a nationally or regionally recognized organization, a climbing school, a college-level climbing/rappelling course.

The BSA offers a section of National Camping School for climbing directors who in turn can train climbing instructors. Contact your local council or regional service center for a schedule of National Camping Schools. Every instructor must have prior experiences in teaching climbing/rappelling to youth and must agree to adhere to Climb On Safely and the guidelines set in *Topping Out: A BSA Climbing/Rappelling Manual,* No. 32007.

A capable instructor has experience in teaching climbing and rappelling to youth, acknowledges personal limitations, and exercises good judgment in a variety of circumstances. The person who just spent four days of free-solo climbing on a sheer rock face may have technical skills but may lack teaching ability or the ability to empathize with youth who may be apprehensive about climbing.

Examples of sources of qualified climbing and rappelling instructors include, but are not limited to, the following:

- BSA climbing directors or instructors
- National Outdoor Leadership School
- Wilderness Education Association
- American Mountain Guides Association
- The Mountaineers
- Recreational Equipment Inc.
- Eastern Mountain Sports
- University or college climbing/rappelling instructors or students
- Project Adventure instructors
- National Speleological Society chapters

Leaders and instructors should also consult current literature on climbing and rappelling for additional guidance. *Topping Out* is the most authoritative guide currently available from the BSA.

3. Physical Fitness

Require evidence of fitness for the climbing/rappelling activity with at least a current Annual Health and Medical Record, No. 680-001. A fitness regimen is recommended prior to participation in climbing/rappelling. The adult supervisor should adapt all supervision, discipline, and precautions to anticipate any potential risks associated with individual health conditions.

If a significant health condition is present, an examination by a licensed health-care practitioner should be required by the adult supervisor before permitting participation in climbing or rappelling. The adult supervisor should inform the climbing instructor about each participant's medical conditions.

4. Safe Area

All BSA climbing/rappelling activities must be conducted using an established climbing/rappelling site or facility, including a portable or commercial facility. A qualified climbing instructor should survey the site in advance of the activity to identify and evaluate possible hazards and to determine whether the site is suitable for the age, maturity, and skill level of the participants. The instructor should also verify that the site is sufficient to safely and comfortably accommodate the number of participants in the activity within the available time. An emergency evacuation route must be identified in advance.

5. Equipment

The climbing instructor should verify that the proper equipment is available for the size and ability level of participants. Helmets, rope, and climbing hardware must be approved by the UIAA (Union Internationale des Associations d' Alpinisme) or CE (European Community Norm), or meet ASTM (American Society for Testing and Materials) standards. All equipment must be acquired new or furnished by the instructor.

An approved climbing helmet must be worn during all BSA climbing/rappelling activities where the participant's feet are more than shoulder height above ground level. When using a commercial climbing gym, the climbing facility's equipment procedures apply.

6. Planning

When planning, remember the following:

- Obtain written parental consent to participate in climbing/rappelling activities for each participant.
- In the event of severe weather or other problem, share the climbing/rappelling plan and an alternate with parents and the unit committee.
- Secure the necessary permits or written permission for using private or public lands.
- Enlist the help of a qualified climbing instructor.
- Be sure the instructor has a map for the area being used and obtains a current weather report for the area before the group's departure.
- It is suggested that at least one of the adult leaders has an electronic means of communication in case of an emergency.
- Before any activity, an adult leader should develop and share an emergency plan that includes the location of a nearby medical facility and the means of communicating with parents during the outing.

7. Environmental Conditions

The instructor, each adult leader, and each participant assume responsibility for monitoring potentially dangerous environmental conditions that may include loose, crumbly rock; poisonous plants; wildlife; and inclement weather. Use the buddy system to monitor concerns such as dehydration, hypothermia, and an unusually high degree of fear or apprehension. The adult supervisor is responsible for ensuring that the group leaves no trace of its presence at the site.

8. Discipline

Each participant knows, understands, and respects the rules and procedures for safely climbing and rappelling and has been oriented in Climb On Safely and Leave No Trace. All BSA members should respect and follow all instructions and rules of the climbing instructor. The applicable rules should be presented and learned prior to the outing and should be reviewed for all participants before climbing or rappelling begins. When participants know the reasons for rules and procedures, they are more likely to follow them. The climbing instructor must be strict and fair, showing no favoritism.

CHAPTER 5

EQUIPMENT

A high-adventure trek requires the proper equipment, just as any outdoor sport does. Without suitable equipment, you will face unnecessary hardships. But take along the right gear and provisions, and you can be comfortable on your trek and have a great time in camp. The essentials include clothing, shelter, food, first-aid supplies, and navigational tools.

GEARING UP

Don't think for a minute that your equipment must be expensive and new. As you discover what you need, rummage around in attics and basements to see what you can find. Watch for neighborhood garage sales, used-equipment sales, and clothing sales at discount stores. Everyday household items can be converted into camping gear, and secondhand equipment is often just what you need. If you have any skill with a sewing machine, try making some gear from scratch, or from inexpensive kits. (See the *Fieldbook,* No. 33104, or *Okpik: Cold-Weather Camping,* No. 34040, for information on how to make gear.) Many major-cost items can be rented or borrowed to help you determine what you really want to buy but always insist on high-quality gear that you can depend on.

INDIVIDUAL EQUIPMENT

Any specific list provided by the sponsoring council or high-adventure program should adhere to the following guidelines.

Choose personal equipment for its practicability and for its anticipated length of service; adapt equipment for multiple uses when possible. Break in some items, such as hiking boots, before using them on a trek.

Select clothing and shelter to encompass potential extremes in weather conditions. Consider needs peculiar to the area of the experience, such as protection from insects and wildlife. Choose outer garments, tents, and packs in earth-tone colors (greens, browns, grays, etc.) that blend with the environment.

Clothing

In the outdoors, clothing is your first line of defense. It keeps you warm in the winter, cool in the summer, dry in storms, and shielded from insects, sun, and wind.

Layering System

For the most comfort in the outdoors, use the layering system. Choose loose-fitting clothing that will meet the most extreme weather you expect to encounter, and be sure you can put it on and take it off a layer at a time.

For example, on a chilly autumn day you might leave home wearing a long-sleeved Scout shirt, long polypropylene pants, rain pants, a wool shirt, a sweater, mittens, and a stocking hat. As you hike, exercise will cause your body to generate more heat than it needs. Peel off the sweater and stuff it into your pack. If you're still too warm, unbutton the wool shirt or slip off the mittens and hat. When you reach your campsite and are no longer exerting yourself, stay warm by putting on just enough layers of clothing to stay comfortable. Change clothes if you sweated in your trail clothing. After the sun goes down, you may want to add an insulated parka and wool trousers or long underwear. Since the greatest amount of heat loss occurs from the head and neck area, be sure your headgear will minimize such heat loss.



Start with synthetic underwear and two pairs of socks . . .

Add a wool or synthetic shirt, wool trousers, and heavy boots . . .

then a wool V-neck sweater.

In cold weather, add a light jacket, wool cap, and shoepacks.

In severe cold, put a water-repellent jacket over other clothes and add mukluks.

You can also use the layering system to keep cool in the summer by stripping down to hiking shorts, a T-shirt, and a brimmed cap. Despite the heat, always carry long pants and a long-sleeved shirt for protection against sunburn, bugs, and brush.

Versatility in your clothing is the key to a successful layering system. Several shirts, a sweater, and a jacket will allow you to adjust your garb in many more ways than will a single heavy coat. Rain pants will also offer wind protection for your legs.

Materials

Learning about the materials from which clothing is made will help you decide what you need.

Wool. Wool clothing is ideal in cold weather, and a wool shirt or sweater will ward off the chill of summer evenings, too. Wool is durable and water-resistant, and even when soaked, it can keep you warm. Wool makes excellent blankets, hiking socks, hats, and mittens. If wool irritates your skin, consider polypropylene or other synthetic clothing for your undergarments, and wear wool over them.



Wear wool or synthetic gloves with water-repellent mitts over them. Fingerless wool gloves permit you to use your fingers.

Cotton. Jeans, underwear, and liner socks often are made of cotton, as are caps, shirts, and bandannas. Cotton is cool, comfortable, and sturdy, but it does not wick moisture away from your body. Unlike wool, it will not keep you warm when it is wet. In hot weather, that may be an advantage, but do not rely on cotton clothing to keep you warm.

Synthetics. Manufactured fabrics such as nylon, polypropylene, capilene, and other synthetics have plenty of outdoor uses. They allow moisture to escape, without being absorbed in the fibers, keeping you warmer. Many are waterproof, and some provide good insulation. They retain some insulating value even when wet. Strong, lightweight, and easy to clean, they are used in rain gear, windbreakers, tents, packs, parkas, and sleeping bags.

Blends. Blended fabrics combine the advantages of several materials in a single piece of cloth. For example, a blend of synthetics and cotton makes shirts and shorts that are neat in appearance, yet tough enough for any wilderness adventure. A mixture of synthetics and wool goes into long-wearing socks, shrink-resistant shirts, and warm jackets.

Down. Down (soft, fluffy feathers) provides outstanding insulation when it is kept dry, but almost none when it gets wet. Items filled with down take a long time to dry.

Rain Gear

No matter how clear the skies are as you pack for a trek, prepare for nasty weather. That means always taking along a rainsuit or rain parka, a pack cover, and perhaps rain pants and gaiters.

Long a favorite of adventurers, rainsuits are almost indispensable. They provide wet-weather security for both hikers and their gear. Many feature hoods and large cargo pockets. Rain pants or rain chaps will protect your legs from wind, rain, and heavy dew; gaiters will keep pebbles, water, mud, and snow out of your boots and away from your socks.

Choose rainwear that fits loosely enough to give you freedom of movement and to allow perspiration to evaporate without condensing on the inside of the fabric. Select your rainsuit carefully. It should be large enough to fit over your winter clothing and made of a durable material. Avoid plastic. Your rain jacket will also serve as a windbreaker or light jacket should you need one.

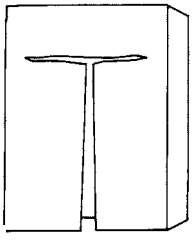
Basic Warm-Weather Clothing List

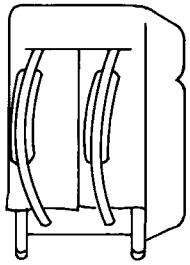
- ____ Long-sleeved shirt
- ____ T-shirts
- ____ Long pants
- ____ Hiking shorts
- ____ Sweater or warm jacket
- ____ Rain gear/rainsuit
- ____ Underwear
- ____ Socks
- ____ Moccasins or running shoes (for wear around camp)
- ____ Hat, broad brimmed (to protect from rain, hail, and sun)
- ____ Bandannas

Basic Cold-Weather Clothing List

- ____ Long-sleeved shirt (wool or synthetic such as polypropylene; not a cotton shirt, which has little insulating value)
- ____ Long pants (wool military surplus pants are fine)
- ____ Wind or rain pants
- ____ Wool sweater or polar fleece top
- ____ Long underwear (preferably polypropylene or other synthetic; not cotton)
- ____ Socks (preferably wool or synthetic blend)
- ____ Insulated parka or coat with hood
- ____ Wool stocking cap or visored winter cap with earflaps
- ____ Mittens or gloves

Garbage bag
Make a T-cut in one side. Tuck around bars of pack frame.





Temporary emergency pack cover

Although most packs can repel rain for a time, make sure your gear stays dry by taking along a pack cover. You can buy or sew a cover especially contoured to fit your pack. In an emergency, you can make a simple temporary cover by cutting a slit in a plastic garbage bag and tucking the loose ends around your pack frame.

Footwear

Many backcountry treks involve miles of trail hiking. Others, such as kayaking, rafting, mountain climbing, and cross-country skiing, require specialized shoes or boots. But even for nonhiking adventures, you may find that you need to walk some distance to reach a river, a mountain, or a snowfield. No matter how you spend your time in the outdoors, you'll probably want to have a pair of good, durable hiking boots. For backpacking or portaging, a pair of boots six to eight inches high with sturdy soles is recommended. Wear the boots to school or work and when walking anywhere to break them in (and to condition yourself).

Leather Boots

When you're hiking, your feet and ankles take a tremendous pounding. Quality hiking boots will give them the support and protection they need to withstand the jarring of each step. The best leather boots are made of top-grain leather, which breathes, allowing moisture from your feet to escape. A minimum number of seams keeps wetness from penetrating. (Be sure to waterproof your boots, especially around the seams.) Lug soles provide the most traction, although smoother soles are usually adequate, frequently lighter, and often less damaging to trails. Since a pound of weight on your feet is equal to five pounds on your back, stick with boots that weigh no more than 3 to 5 pounds a pair for trail wear. Mountaineering boots are heavier and more rigid, and appropriate only for the specialized needs of climbers.

Ultralight Trail Boots

Made with the same synthetic materials and high-performance designs as running shoes, ultralight trail boots weigh just a few pounds a pair, need little breaking in, dry quickly, and are fine for walking well-maintained trails. They might not be sufficiently waterproof for wet, muddy trails or sturdy enough for rugged backcountry use, especially if you are carrying a heavy pack.



Wear two pairs of socks—a light liner pair and a heavy outer pair.

Socks

Plan to wear two pairs of socks—a light synthetic or silk sock next to your foot and a heavy wool sock next to your boot. Silk is a slick material that minimizes the chafing of the skin that eventually causes hot spots or blisters. If you don't have silk, socks in a variety of synthetic materials will serve you well. Be sure to carry a set or two of extra socks (one lightweight pair and one heavy wool pair per set), and biodegradable soap for washing them.

Selecting Footwear

When you go into a store to try on boots, wear the socks in which you plan to hike. Unlace a boot, slip in your foot, and kick your toes forward. If the boot is the right length, you should be able to slide two fingers between your heel and the back of the boot.

Next, kick your heel back into the heel pocket, and with the boot snugly laced, walk around the shop, go up and down some stairs, and do a few deep knee bends. You want to be sure your heel isn't sliding up and down inside the boot, and that the widest part of your foot isn't swimming around or being squeezed. After you've tried out one pair, run the same tests on several other models, taking plenty of time to get a real feel for the fit. Inspect each boot for quality workmanship, and get the opinions of experienced hikers.

Before you buy, make sure the store will allow you to bring the boots back, undamaged, if they don't fit. That way you can take them home and wear them for several days inside the house. If they still feel good, you've probably got a pair that's right for you.

Breaking in Leather Boots

Like new baseball gloves, new leather boots usually are stiff. They must be broken in before you wear them on an extended trek or you're in for a crop of blisters.

First, treat your boots with the dressing recommended by the manufacturer. Rub it thoroughly into the leather with a rag or your hand. After applying the dressing, set your boots in a warm or sunny place to allow the dressing to soak in. For best results, apply two or three coats. This will protect the boots and help them repel water. You may also want to guard the boot seams against moisture and abrasion by applying a commercial seam sealer.

Wear your boots around the house and on short hikes until they have loosened. Gradually extend the length of the walks on which you wear them, and soon they'll feel like a natural part of your feet.

Caring for Boots

No matter what kind of boots you have, clean them after every outing. When boots are muddy, use a stiff brush to remove the mud, then apply dressing to the leather. If they become wet, dry them at room temperature. Never expose them to more heat than you can tolerate on the back of your hand. Synthetics may melt, and leather can become hardened and cracked. Take care of your boots and they'll give you years of good service.

Running Shoes, Moccasins, Mukluks, and Booties

When you reach camp after a long hike, it's sheer heaven to get your feet out of the boots that encased them all day and slip into moccasins or running shoes. Lightweight tennis or running shoes are easier on the land and cause less trampling of vegetation. On the trail, you can also change into running shoes if you need to wade a stream. You'll have the foot protection you need, and your boots will stay dry. In winter, mukluks and insulated booties with nonskid soles are great for wearing around camp and in your tent.

Aqua Shoes

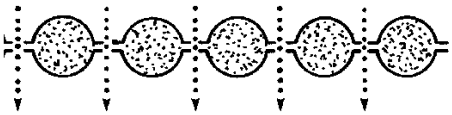
Lightweight aqua shoes made of rubber and nylon are appropriate for canoe or raft trips because they are designed to be worn in water. They protect the feet from cuts and dry quickly. Wear them in remote swimming areas, but change into more durable footwear for portages.

Sleeping Bag

Your bed is an extension of your shelter, keeping you warm while you sleep. A sleeping bag keeps you warm by trapping the heat your body generates. The bag's thickness, known as its *loft,* determines how much heat the bag will retain. Usually the more loft a bag has, the warmer you will be.

The fabric shell of a lightweight sleeping bag is made of nylon. Loft is created by filling the shell with natural or synthetic materials, and partitions sewn inside the shell hold the fill material in place. In less expensive bags, partition stitching may go through the shell, resulting in cold spots where the loft is thin. In better bags, mesh or nylon walls (called *baffles)* divide the interior of the shell into compartments that keep the fill evenly distributed without lessening its loft, thus preventing cold spots. The best bags also have tubes of fill material backing the zippers to keep warm air from escaping, and may be equipped with insulated hoods that can be drawn about a sleeper's face.

Sections through wall of bag illustrate how filling is kept in place.



Simple quilting. Loses heat where the stitching passes through the fabric.



Double quilting. Two quilts fastened together in an offset



Box wall. Prevents the filling from moving about.



Slant wall. Prevents filling from moving about and gives it



Overlapping tube or V-baffle. Very efficient, but because it uses a lot of material, tends to be heavy.

Sleeping Bag Construction

Goose down and synthetic fibers are the most frequently used fill materials. Both also insulate parkas, vests, booties, caps, and mittens. In making your equipment choices, weigh the advantages and disadvantages of each. A synthetic insulated sleeping bag that weighs 3 to 3½ pounds will serve you well for most outings.

Sleeping Pad

Use a closed-cell foam or self-inflating pad under your sleeping bag for warmth, comfort, and protection from moisture. A pad two-thirds one's body length works best for most people for three-season use. A full-length pad is necessary for cold-weather camping.

Caring for Sleeping Gear

If you are paddling a canoe or raft, or expect wet weather or stream crossings, double-protect your bedroll by placing it in two plastic garbage bags before you stow it in a stuff bag.

After a trek, unroll your bag, let it air thoroughly, and then hang it in a closet or store it in a large cloth sack such as a laundry bag. Prolong the life of your bag by cleaning it when it becomes soiled, but only according to the manufacturer's instructions.

Water Bottles

Carry at least two one-quart containers. If water sources are abundant, fill each container half full. If water is scarce, carry both bottles filled. For easy access, stow them in the top outside pockets of your pack. Where water is scarce, and for convenience in camp, take along multiple water bottles and/or a collapsible water bag.

PACKS

A pack serves as your backcountry storeroom, attic, garage, and basement. A good one will ride lightly on your shoulders, protect your equipment from the elements, give you easy access to things you need along the way, and leave your hands free. To choose the pack that's right for you, you'll need to know the advantages and disadvantages of soft packs, internal frame packs, and external frame packs.

Soft Pack

A soft pack will hold plenty of gear and can be stowed in tight places, making it ideal for day hikes, short portages, and light loads. However, a loaded soft pack places most of its weight on a hiker's shoulders, and that can be uncomfortable.

Day Pack

Day packs are small soft packs just large enough to hold the lunch, clothing, rain gear, and first-aid kit you need for a single day's hike. On extended adventure treks, you may want to carry a day pack in your backpack and use it for excursions you make from camp.

Internal Frame Pack

The compact shape, low center of gravity, and snug fit of internal frame packs make them suitable for travel in heavy brush and on cross-country skis as well as on open trails. However, they may not allow sweat from your back to evaporate.

External Frame Pack

An external frame pack has a higher center of gravity than a pack with an internal frame. However, since the frame is outside the bag, it can be larger and more rigid, and thus can more efficiently transfer the weight from the shoulder straps to the hip belt. Most frames also provide room for you to lash on a sleeping bag or tent. And with the pack bag removed, you can use the frame to haul anything from firewood to a Dutch oven.

Choosing a Pack

Your backpack will be more comfortable if fitted with a proper interior or exterior frame. A hip belt is a necessity. It holds the lower part of your pack and its weight directly over your hips and legs to reduce the strain on your shoulders.

When shopping for a new backpack, look for one that matches the kinds of adventures you'll use it for most. It might be a little large for your overnight campouts, but just right for longer treks. Choose a pack in earthy colors that will not annoy other users of the outdoors. Insist on strong materials that have been securely sewn, and notice how pack bags are attached to external frames. Sturdy clevis pins secured with split rings will keep them from coming apart. Carry a few extra clevis pins for repairs.

When you try on a pack, put some weight in it, then wear it around the store and see how it feels. Will it ride close to your back? Does the weight rest on your hips rather than your shoulders? Could you carry it all day on a trail?

Panniers, Haul Bags, and Saddlebags

Certain outdoor activities require special packs for transporting food and equipment. Bicyclers and horse packers may need panniers or saddlebags to hold their supplies, while climbers, cross-country skiers, and snowshoers may choose to drag their gear behind them in tough, protective haul bags. Trekkers traveling by canoe, kayak, or raft require waterproof bags. In any case, choose panniers and bags that are as well made as any pack you would put on your shoulders. Halfway through a trek is no time to discover your gear isn't up to the challenge of the backcountry.

CREW EQUIPMENT

Most specialized crew equipment is the responsibility of the sponsoring council. This includes rafts, canoes, horses, climbing gear, and other specialized equipment for providing a high-adventure experience. Traveling and living in remote areas may dictate special equipment and supplies.

The crew leaders and the entire crew are responsible for all equipment issued to them. Adult and youth leaders must be trained in the proper use of all equipment.

Shelter

Desert campers need open, airy shelters that shade them from the sun. Long-distance hikers want tents that are light in weight and yet appropriate for many variations in weather. Fortunately, there are shelters that will satisfy every outdoor traveler.

Pick a color that blends with the hues of the outdoors. Greens, grays, blues, browns, and rusts are perfect. A few too-bright tents can make an area seem crowded and detract from the experience of other trekkers seeking solitude in a natural environment.

While a new tent doesn't need to be broken in like a pair of hiking boots, take time before your trek to practice setting it up. It's better to learn the quirks of your shelter in your own backyard than on a mountain with a storm crashing around your ears. Check the manufacturer's directions to determine whether the seams must be sealed prior to use.

A-Frame Tent

Essentially a pup tent made light and strong with modern materials and engineering, the A-frame tent with side pullouts is roomy and usually has a waterproof floor and mosquito netting. Weighing four to eight pounds, an A-frame tent will sleep two to four people and keep their gear dry.

Dome Tent

Contemporary designs and fabrics have made possible a variety of dome-shaped tents. Their configurations help them stand up to wind, rain, and snow, and the spaciousness of their interiors makes them great for two to four campers. A dome tent can be flipped upside down in the morning to dry the bottom of the tent floor quickly. Dome tents can easily be moved to a new location to minimize impact on vegetation. Move dome tents every day or two to avoid leaving a trace.

Ground Cloth

A sheet of plastic under your tent will help protect the floor from wear, and keep moisture from seeping through. Prevent rain from running between the tent floor and the ground cloth by placing the cloth so it doesn't extend beyond the area covered by the tent. Carry the ground cloth near the top of your pack and use it in sudden showers to cover your gear.

Never ditch your tent. Ditching is unnecessary if you choose a suitable tent site and use a ground cloth.

Flammability Warning

No tent material is completely fireproof. It can burn when exposed to continued, intense heat or fire. The most important safeguard is to keep flames away from tents and tarps. For this reason, the following safety precautions are emphasized.

- ***No flames in tents*** is a rule that must be enforced. Only flashlights and electric lanterns are permitted in tents. Never use stoves, heaters, lanterns, lighted candles, matches, or other flame sources in or near tents.
- Be careful when using electricity and lighting in tents. Do not use flammable chemicals—charcoal lighter or spray cans of paint, bug killer, or insect repellent—near tents. Do not pitch tents near an open fire.
- Always extinguish cooking campfires promptly.
- Obey all fire laws, ordinances, and regulations.

COOKING GEAR

Most backcountry trips are best undertaken by small groups, so you'll often need only one or two camp stoves, a few utensils, a frying pan, and a couple of pots to prepare meals plentiful enough to satisfy everyone. Your menu will determine what cooking gear you need. Groups with more than four or five members may want to split into small cooking teams, each with its own stove, cook kit, and provisions.

Backpacking Stoves

The use of backpacking stoves is encouraged. They may be helpful throughout a trek, particularly on wet mornings when you want to start cooking and trekking early to avoid warm afternoon temperatures.

Purchase quality backpacking stoves. Plan to bring one backpacking stove per four campers. The proper use of stoves should be part of your pretrek training. Practice lighting your stove before your trek. Crews should transport their stoves ***without fuel*** and purchase fuel (commercial lantern or stove fuel) locally.

All liquid-fuel containers should be spun aluminum or hard bottles designed to carry fuel. A small pour spout or funnel is important to avoid dangerous spillage.

Backpacking stoves are used with adult supervision and ***never*** in or near tents.

Handling Chemical Fuels

Knowledgeable adult supervision must be provided when Scouts are involved in storing chemical fuels, handling chemical fuels in filling stoves or lanterns, or lighting chemical fuels. The use of liquid fuels for starting any type of fire is prohibited.

Guidelines for Safely Using Chemical Stoves and Lanterns

- Use compressed- or liquid-gas stoves or lanterns only with knowledgeable adult supervision and in Scout facilities only where and when permitted. Operate and maintain them according to the manufacturers' instructions.
- Keep all liquid fuels in well-marked, approved containers (never in glass containers), stored in a ventilated, locked box at a safe distance (a minimum of 20 feet) from buildings and tents. Keep all chemical fuel containers away from hot stoves and campfires, and store them below 100 degrees.
- Let hot stoves and lanterns cool before changing cylinders of compressed gases or refilling them from containers of liquid gas.
- Refill liquid-gas stoves and lanterns away from tents and a safe distance from any flames, including other stoves or campfires. For safety and performance, use a commercial camp stove fuel. Pour fuel through a filter funnel. Recap both the device and the fuel container before igniting the device.

Group Cooking Gear

- ❑ Frying pan, pots, and utensils
- ❑ Hot-pot tongs (get a pair that can firmly grip your pots)
- ❑ Can opener (use the one on your knife, or carry a small army surplus opener)
- ❑ Litter bag
- ❑ Trail foods (nutritionally balanced and nonperishable)

- **Never fuel a stove, heater, or lantern inside a cabin; always do this outdoors.** Do not operate a stove, lantern, or charcoal grill in an unventilated structure. Provide at least two ventilation openings, one high and one low, to provide oxygen and exhaust for lethal gases. **Never fuel, ignite, or operate a stove, heater, or lantern in a tent.**
- Place a stove on a level, secure surface before operating it. On snow, place an insulated support under the stove to prevent the snow from melting and the stove from tipping.
- Periodically check the fittings on compressed-gas stoves and on pressurized liquid-gas stoves for leakage, using a soap solution before lighting.
- To avoid the threat of fires, locate gas tanks, stoves, etc., below any tents; a heavy leakage of gas will flow downhill the same as water.
- When lighting a stove, keep fuel containers and extra canisters well away. Do not hover over the stove. Keep your head and body to one side. Follow the manufacturer's directions to light and maintain the stove flame.
- Do not leave a lighted stove or lantern unattended.
- Do not overload a stovetop with heavy pots or large frying pans. If pots larger than 2 quarts are necessary, set up a separate grill with legs to hold the pots, and place the stove under the grill.
- Bring empty fuel containers home for disposal. **Do not place in or near fires.** Empty fuel containers will explode if heated and should never be put in fireplaces or with burnable trash.

FOOD

Working out the menus for a backcountry adventure may appear to be a huge effort, but it's really not difficult if you do it one step at a time. First, think through your nutritional needs, the demands of the activities you've planned, the size of your group, and the amount of time you want to spend cooking. Make some notes and you'll see that you've broken the big job of menu planning into a number of small, manageable tasks.

In summer, daily caloric needs per person range from 2,800 to 4,000 calories; in winter, daily needs increase to 3,800 to 6,000 calories. Teenagers will generally require more calories than adult leaders. Plan your menus so that extra food is available in case of unforeseen circumstances.

When you plan to be busy most of the day, you'll want meals that are fast and easy to prepare. In fact, you don't really have to cook at all; while the warmth of main courses may enhance your eating pleasure, cold food is just as nourishing. Some trekkers occasionally leave their stoves and cook kits at home and rely completely on foods that can be eaten as they are; it's always a good idea to carry ready-to-eat foods in case you don't have time to light your stove or build a cook fire. For long trips, plan some quick menus and some that are more nourishing. You'll have the variety you need to make the meals interesting, and the flexibility to match your meals with your activities.

The elevation and temperature of your camp may also influence cooking times. If it takes five minutes to boil a quart of water at sea level, you'll need at least twice as long to boil it at timberline in the Rockies. Likewise, the colder the weather, the more time you'll spend completing every camp task, including cooking.

Nutrition

While you'll need to eat more food for some activities and conditions than for others, your basic nutritional needs will always be met if you prepare meals that include a good mix of protein, carbohydrates, fruits and vegetables, dairy products, fats, and water.

Protein. Protein is one of the body's primary building blocks, essential for developing muscles and repairing injuries. Beef, poultry, fish, and eggs are all good sources of protein.

Carbohydrates. Whole-grain bread, cereals, rice, and pastas such as noodles, macaroni, and spaghetti provide lots of energy and help fill the empty corners of your stomach. Make biscuits, muffins, pancakes, and dumplings in camp, or bring crackers and breads from home. (To save space, you can open a bread wrapper and carefully squeeze the air out of the loaf as if it were an accordion. The slices will be thin, but the taste and nutritive value will be unchanged.)

Sugar is also a carbohydrate, one that creates quick rather than lasting energy. Don't rely on sugar for much of your diet, especially in cold weather, when your body needs plenty of slow-burning fuel.

Vegetables and fruits are complex carbohydrates. Full of vitamins and minerals, vegetables and fruits are essential menu components.

Fats. Fats are an important part of outdoor menus, although many people concerned with controlling their weight may think of them as taboo. Fatty foods such as butter, margarine, nuts, cheese, salami, and bacon slowly release their energy over a long period of time, keeping you warm and energized for hours. You'll want to include more fats in your winter menus than those you use in the summer. Eating a chunk of cheese before you go to bed or drinking a cup of cocoa in which you've melted a pat of butter or margarine will supply energy to help keep you warm through the night.

Water. Water is as essential for good health as any of the food groups. Before you leave home, find out if there will be abundant sources of water near your camps or if you'll need to carry your water with you. Treat water collected in the backcountry by boiling it, by treating it with water treatment tablets or chemicals, or by filtering it with a high-quality filter designed to eliminate bacteria and protozoa as well as pesticides and other chemicals.

Forms of Backcountry Food

Most of the trail foods you need can be found in your local supermarket. Look for the following.

Dehydrated/Freeze-Dried Foods. Each of these processes accomplishes the same end: the removal of some or all of the moisture from a food. The result is a product that weighs only a few ounces, won't take up much room in your pack, and won't deteriorate before you're ready to use it. Trail preparation varies from letting dehydrated ham cubes soak overnight to simply adding boiling water to freeze-dried main dishes. The disadvantage of commercially prepared dehydrated and freeze-dried foods is the higher cost.

Dry Goods. Pastas, flour, beans, popcorn, rice, seeds, and other naturally dry foods can be a major part of your camp diet, as can dried dairy products and meats.

Convenience Foods. Every supermarket has dozens of convenience foods that are quick to prepare. Intended primarily for home use, many are also ideal for camp meals. Instant rice, gravy mixes, granola bars, pancake mix, and entrees in flexible metal retort pouches are just a few you may want to use. While many convenience foods are high in nutrients, others are loaded with sugar and salt or are so heavily processed that they've lost much of their nutritional value.

Retort Foods. *Retort* packages are sealed foil containers packed with entrees and side dishes. "Meals ready to eat," or MREs, are used by the military and can be purchased at military surplus stores. Essentially a flexible metal can, a retort container will keep food fresh until you're ready to eat it, and in most cases you need only drop the whole package into boiling water to heat the contents to serving temperature. By using retort pouches, you can avoid having to clean pots, which is particularly helpful in cold weather. Since no water has been removed from the food, retort meal pouches are heavier than dry or dehydrated foods.

Purchasing Foods

After you've decided what you would like to eat, studied the recipes, and listed how much of each ingredient will be needed to feed your crew, you'll be ready to buy provisions. The best place to shop is your neighborhood grocery store. Food co-ops, particularly those specializing in health foods, often have extensive offerings of nuts, grains, and honey, while ethnic shops can supply the more exotic ingredients for special recipes. Backpacking stores and sporting goods outlets usually stock dehydrated and freeze-dried meals packaged especially for hikers and campers. While these selections are usually more expensive, they may be more convenient to pack and quicker to prepare.

Food Storage Containers

For food storage, you'll need several dozen clear plastic bags of various sizes. Use empty bread wrappers and fruit sacks, freezer and sandwich bags, or storage bags with self-locking closures. You'll also need a few refillable plastic squeeze tubes or a couple of plastic jars with screw-on lids. Avoid carrying cans or glass into the backcountry. Repackage items into plastic containers or sandwich bags, which can be reused.

THE OUTDOOR ESSENTIALS

Any time a Scout ventures into the outdoors, he should be prepared by carrying these essentials in his day pack. Whenever a crew or part of a crew (a minimum of four people) elects to take a side hike, each person should carry the 10 essentials. Carrying these items will enable a person to survive most emergency situations.

The 10 essentials are

- Map and compass
- Water bottle filled with treated water
- Matches and fire starters in waterproof case
- Pocketknife
- Rain gear
- Extra clothing
- Extra food
- Sun and insect protection (including broad-brimmed hat, sunscreen, and insect repellent)
- First-aid kit
- Whistle and flashlight

FIRST-AID KIT

Personal First-Aid Kit Contents

A good, basic personal kit should contain the following items. Quantities of suggested items for your first-aid kit depend upon your needs.

- ❑ 6 adhesive bandages, assorted sizes
- ❑ Gauze pads, assorted sizes
- ❑ Adhesive tape, 1 small roll
- ❑ Roller bandage, 2 inches by 5 yards
- ❑ Molefoam or moleskin (to protect hot spots and blisters)
- ❑ Tweezers
- ❑ Antibacterial towelettes or liquid antibacterial soap (to clean wounds)

A first-aid kit well stocked with the basic essentials is indispensable. Pack a small personal first-aid kit in a small metal or plastic box with a snug lid, or in the compartments of a nylon kit that can be rolled into a bundle and secured in a plastic bag with a self-locking closure. The container should be large enough to hold the contents so that they are readily visible, and so that any one item may be taken out without unpacking the whole kit. It should be sturdy and lightweight and should have a list of the contents readily available for easy refilling.

Carry a personal first-aid kit on all your adventures. Keep the kit in a convenient location, such as in an outside pocket of your pack.

Your crew should also carry a crew first-aid kit. Use a fanny pack to hold the contents of your crew first-aid kit for convenient carrying on side hikes. Slip the supplies into waterproof plastic pouches for protection from rain. Designate one person to be responsible for keeping the kit filled.

Prescription Medicine

Administering or taking prescription medication is the responsibility of the individual taking the medication and/or that individual's parent or guardian. A Scout leader, after obtaining all the necessary information, can agree to accept the responsibility of making sure a Scout takes the necessary medication at the appropriate time, but BSA policy does not mandate nor necessarily encourage the Scout leader to do so. Also, if your state laws are more limiting, they must be followed.

MAPS

A council high-adventure program may provide maps to trekkers. If you'll be participating in a program or an activity that does not provide maps, you should order them. Topographical maps are prepared primarily by the U.S. Geological Survey of the Department of the Interior. For information on ordering a topographical map, call 1-800-HELP-MAP. For map indexes, call 1-800-USA-MAPS. Or, write to USGS Information Services, Box 25286, Denver Federal Center, Denver, CO 80225. Ask for a map index of the state where you'll be trekking and an order form.

The index is a map of the state divided into sections called quadrangles. Find out which quadrangle covers your trek area. Then order maps according to the instructions in the index. Plan to have at least two maps per crew.

Map Data

Obviously, it's impractical to put a full-size image of the backcountry on paper; such a map would itself be as large as the area it represented. Instead, cartographers have devised symbols for important features, and scales to help users orient their maps and determine distances. Much of the information you'll need to use a map is printed in its margin.

Look in the margin of almost any map and you'll find the dates it was prepared and last revised. Like a photograph, a map records things as they are at a particular instant in time. The newer a map, the more accurately it will portray the current appearance of an area. The margin also may have a location identifier, often in the form of a small outline of a state. A tiny blackened square within that outline will show the general location of the territory represented by the map.

Scale	Minutes	Approx. Inches/Mile	Advantages/ Disadvantages
1/24,000	7½	2½"	Detailed, but may require many maps. Often the best alternative.
1/62,500	15	1"	Compromise—shows less detail.
1/250,000	60	¼"	Useful for planning treks and transportation routes to the trailhead—covers large area.

Next, look for the indication of *scale.* If you've ever built a model airplane from a kit, you may have noticed that it was advertised as being a certain size—say, 1/25 as large as a real airplane. Known as the scale of the model, the size ratio could have been written 1:25, meaning that one inch on the model equaled 25 inches on the original.

CONDUCTING A SHAKEDOWN

Take only the gear you need. After several overnight camps or preparatory treks, you should be able to conduct a shakedown to eliminate items that you didn't need. Conducting a shakedown is a crucial step in preparing for a high-adventure trek. A thorough shakedown will enable your crew to have a better experience by having the right clothing and equipment in the right quantities. Your goal is for every person to be adequately equipped, carrying a pack that is as light as possible. Each item should be evaluated against four criteria: usefulness, durability, weight, and bulk.

The key to successful trekking is to travel lightly. Check your equipment against the recommended list in the appendix. That checklist is the maximum. Some trekkers can reduce that list considerably and still be comfortable, clean, and safe.

Eliminating Unnecessary Equipment

Get together with your crew before you depart on a trek. Spread all your individual equipment, clothing, and provisions on the floor or on a ground cloth outdoors. Consider each item carefully. Can you share items, such as toothpaste and soap, or take smaller items, such as a minilight instead of a full-sized flashlight? Is each item essential? If so, pile it beside your pack. Put nonessentials in a separate pile you'll leave at home.

After you've gone through everything, repeat the process. Be sure you have all the basics but nothing more.

Finally, take a last look through the pile of nonessentials. Some of the items could make your trip more pleasant, and you'll have to decide whether they are worth the extra weight. In the case of a plant identification book, binoculars, or a camera, the answer may well be yes, but don't forget that ounces add up quickly. The more thorough your shakedown, the lighter your load. On a canoe trek, you may be able to justify a few extra items that should be left at home when backpacking.

Go through group equipment and food in the same way. Check off each item on your lists of food and gear until you are sure you have everything your crew will need and nothing more. When you're done with the shakedown, every detail of your trip preparations should be done except one, and that is the most important of all: leaving a trip plan. (See chapter 2.)

Dividing Group Gear

In addition to safety, one of the greatest advantages of traveling in a group is that your pack will be lighter than if you were alone. Of course, each person must tote personal gear: clothing, eating utensils, etc. But tents, cook kits, stoves, food, stove fuel, and the like can be divided among all the crew members.

As you gear up, set aside those items that will be used by more than one person. Divide the group gear and provisions among the members so that everyone carries a fair share. Everyone should have a pack that is light enough to be carried comfortably.

To avoid confusion in camp, keep a complete list of your crew's group gear and note the pack in which each item is being carried. On canoe, horse, or sledding treks, the group equipment may be packed separately, but crew members should be assigned responsibility for it.

CHAPTER 6

SKILLS PRACTICE

Time and effort spent sharpening your outdoor skills will allow you more time to enjoy the natural beauties and program opportunities of your high-adventure trek. The best way to practice and develop these skills is to participate in several outings with your crew. Use the *Fieldbook* as well as the appropriate merit badge pamphlet or Venture/Varsity activity pamphlet to guide your preparation and training. Also consult several good books such as those listed in the resources sections of the *Fieldbook* and the pamphlets.

LOADING A PACK

Once you've determined what gear to take (see chapter 5), the next step is to pack it for the trek. How you pack will be determined by the type of trek and the gear you are taking. In any case, small, frequently used items go in your pockets: your Scout knife, compass, whistle, bandanna, some matches, lip salve, protection for blisters, and perhaps paper and a pencil.

Equipment you won't need until you make camp can go deep in the pack, but rain gear, the first-aid kit, a sweater, clean socks, and your lunch should ride just under the main flap. Carry your map, water bottle, sun and insect protection, camera, trail snacks, and flashlight in the pack's outside pockets. Reserve one pocket for your fuel bottle or cylinders so they'll be isolated from the rest of your supplies. Do not pack aerosol cans or glass jars; they are bulky and prone to break or erupt.

Roll your clothing tightly and pack it snugly inside a plastic bag. Packing items, such as your sleeping bag, inside heavy plastic bags will keep the contents dry even if your pack gets soaked.

Organize the contents of your backpack so you know where each item is located. Always return each item to a specific pocket of your pack so you can locate it quickly. Using small stuff sacks or plastic bags (3" × 5" and 5" × 7") keeps smaller items better organized. Tying a cord to smaller items helps prevent them from becoming lost.

For trail hiking, arrange the contents of your pack so that its center of gravity is high and close to your back. Pack heavier items toward the top of your pack and closest to your body to get the weight over your bone structure so your muscles will not tire easily.

For cross-country skiing, snowshoeing, and mountaineering treks, you can trade a little comfort for a lot of stability by placing heavy gear lower in the pack, thus lowering the center of gravity. In either case, pad the front of the pack's interior with a layer of clothing to cushion your back.

Upper Left Pocket
- ❑ Water bottle or canteen
- ❑ Rain gear

Lower Left Pocket
- ❑ Protection from sun
- ❑ Protection from insects
- ❑ Flashlight with spare bulb and batteries

Upper Compartment
- ❑ Cook kit and utensils
- ❑ Stove
- ❑ Water bag
- ❑ Tent or tarp
- ❑ Tent stakes
- ❑ Ground cloth
- ❑ Food and condiments in bags

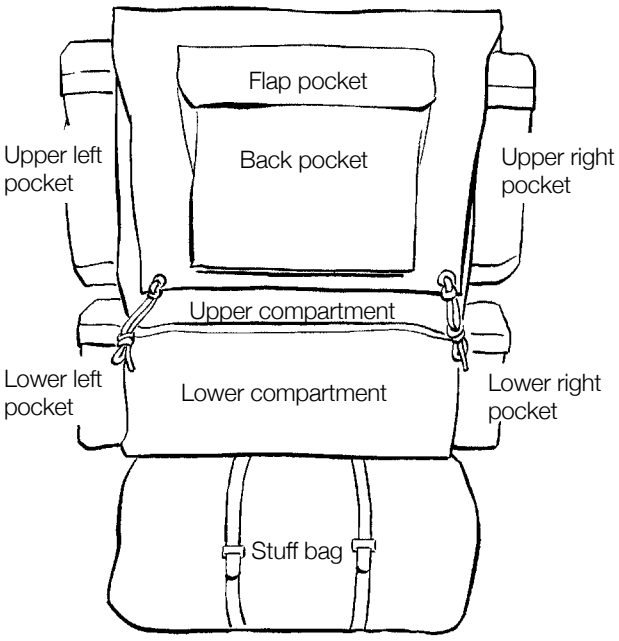
Flap Pocket
- ❑ Camping permit
- ❑ Maps
- ❑ Pencil and paper

Back Pocket
- ❑ Cup
- ❑ Bowl
- ❑ Matches and fire starters
- ❑ Plastic whistle
- ❑ Cord (for pack repairs, boot laces, and retrieving smaller items)
- ❑ Bear bag and rope
- ❑ Emergency coins
- ❑ Soap
- ❑ Toilet paper in sealed plastic bag
- ❑ Metal or plastic mirror
- ❑ Comb
- ❑ Toothbrush
- ❑ Toothpaste
- ❑ Small towel

Upper Right Pocket
- ❑ Stove fuel
- ❑ Stove windscreen

Lower Right Pocket
- ❑ First-aid kit

Lower Compartment
- ❑ Hat or cap
- ❑ Socks
- ❑ Clothing appropriate for the season
- ❑ Sweater or jacket



- ❑ Parka or coat
- ❑ Moccasins, running shoes, or booties
- ❑ Bandanna

Stuff Bag

- ❑ Sleeping bag with plastic bags to keep it dry
- ❑ Foam pad

Weight of the Pack

Check your pack weight. Twenty to 25 pounds without food is preferred; 30 pounds is generally OK. How much your pack will weigh depends on the length of the adventure you've planned, the amount of food and equipment you must carry, and your personal preference.

Most older Scouts can carry a pack well if the weight is below 30 pounds. Comfortable pack weights vary considerably with physical condition, age, and experience. Practice will help you discover what weight is best for you.

Hoisting a Loaded Pack

When you have packed your backpack, practice putting it on your back. Grasp both shoulder straps and lift the pack waist high. Rest the bottom of the pack on your thigh or balance it on one knee with the pack straps facing you. Slip an arm through the appropriate strap and smoothly swing the pack onto your back, reaching down and back to slip your other arm through the second strap. Lean a little forward at the waist to shift the pack into position, buckle the waist belt, and adjust the shoulder straps so that when you stand upright, most of the pack's weight rides on your hips. To remove the pack, reverse the steps.

BACKPACKING TECHNIQUE

Hiking with a pack is much different from walking without one. A pack on your shoulders alters your sense of balance. Its weight puts extra strain on your feet, ankles, and knees, especially when you're pounding downhill. If you pack properly, backpacking will be easier. Practice hikes also help.

Take it easy at first until you become accustomed to the sensation of carrying a pack, and rest whenever you begin to tire. Pace is the key to good backpacking. The pace should be slow enough to allow everyone to keep together, but without bunching up. A steady pace is best. When climbing steep grades, shorten your stride and slow your pace, but keep it constant. Use the rest step (described in chapter 7).

Setting a comfortable pace will help everyone keep together and enable everyone to enjoy the trek. Help ensure the comfort of the slowest members of the crew by positioning them near the front of the group where they can more easily maintain a steady stride. Trekking is a group activity, and everyone must pitch in to do whatever is necessary for the good of the entire crew.

When hiking a trail, single file is the rule. **Always keep your crew together.** A medical emergency is the only reason to separate from your crew. (See chapter 7 for more about trail procedures.)

Rest stops should be short and frequent. Sixty-second rests will let you catch your breath. Deep breathing works best for high-altitude backpacking. Learn to rest without removing your pack; if you bend over and loosen your hip belt, you can remove the weight from your shoulders. Taking off and putting on a pack takes energy and will tire you if done too often.

HIKING TIPS

- How fast should the hike be paced? Not faster than the slowest member of the crew.
- Keep some space between hikers; 6 to 10 feet is about right. Space fosters safety (no stepping on heels or catching flying limbs in the eye); it also allows for sudden stops and a good view of the surrounding environment.
- A steady pace results in fewer rest stops and less chance that crew members will overheat.
- Foot problems? Speak up! Foot care is essential. Hot spots, blisters, foreign objects in the boot—all can cause misery for everybody if not taken care of early.
- Rest stops? They're good if someone has a problem or if the scenery warrants a special gaze. Stay on durable surfaces and move a few feet off the trail to allow other hikers to pass. Be aware that too-frequent rest stops signal a too-rapid speed of hiking; the crew is wearing itself out.

CANOEING

The real joy of canoeing comes when you glide quietly across the water, the canoe responding to every dip of your paddle. To maintain a good pace over a long distance, you'll need to master the general principles of paddling as well as the basic strokes.

Good position leads to effective paddling. Whether you canoe with a partner or alone, kneel in the canoe, wedge your knees against the sides of the craft, and rest your weight against a thwart or the front edge of a seat; or, sit solidly on a seat and brace your knees against the gunwales. Think of yourself as a part of the canoe, locked securely in place.

When you travel with a partner, work as a team paddling in unison on opposite sides of the canoe. Maintain a smooth rhythm, keeping your strokes steady and light, and relying on the strong muscles of your shoulders and back. Keep your eye on your destination and paddle directly for it. The straighter your line of travel, the less energy you'll have to expend.

There are a number of effective paddle strokes, and you'll want to learn them all. For starters, become familiar with the forward stroke and J-stroke for traveling forward, the backstroke for reversing the course of a canoe, and the drawstroke and prystroke for moving a canoe sideways.

Pack food and equipment for canoeing as if you're going on a backpacking trek. Keep packs lightweight for the portages you'll encounter. Place your packs and gear low in your canoe and "trim" the load so the canoe sits level in the water. Tie your packs to a gunwale so they will not be lost if your canoe capsizes.

RAFTING

Rafts can be propelled in two ways: with oars or with paddles. Your choice of power will depend in large part on the kind of rafting trip you have planned.

Paddling a raft is a group activity requiring the cooperation of everyone on board. Facing forward, several rafters sit on each side of the boat and use canoe paddles to guide the craft. A group leader sits in the rear of the craft, uses a paddle as a rudder to steer the raft down the river, and gives commands to the paddlers, instructing them how to stroke to best maneuver the boat.

A raft equipped with oars can be steered efficiently by a single experienced oarsman. Perched atop a platform in the middle of the raft, he or she can see the river ahead and control the motion of the raft by pulling on long oars secured to the raft's frame. Since a raft with oars needs only one well-seasoned boater on board, passengers can sometimes go along for a ride down a river even if they don't have much whitewater experience. As they splash and churn down the river, they can watch the oarsman and learn some of the basics of handling a raft in rough water.

KAYAKING

You don't sit in a kayak so much as wear it. As you gain whitewater experience in a kayak, you'll discover that the boat is an extension of your body, responding to your every move.

With a few basic strokes, you can make a kayak dance. You need to know the forward stroke, reverse stroke, sweep stroke, reverse sweep, drawstroke, Duffek stroke, low brace, and high brace. The best way to learn them is to practice in quiet, safe water. Practice until the strokes are automatic. That way, when you get on a river, you'll know what to do.

Before you leave the safe waters in which you practice the basic strokes, also learn the principles of rolling a kayak. With an eskimo roll, you can right a kayak without having to get out of it—a real advantage when you're running rapids.

RIDING AND PACKING

Much of America's backcountry can be explored by adventurers on horseback or leading pack animals, including horses, burros, and llamas. A successful pack trip requires sound planning; good, dependable animals; and your ability to handle your mounts. If you're a stranger to trail riding, you'll need plenty of practice under the watchful eyes of experienced riders and horse packers before you hit the trail. When you've mastered the basics of riding, try a few short trips of one or two days. With practice, you'll be ready to tackle just about any riding adventure.

Veteran horse handlers can give you the guidance you need to learn the ways of saddle and pack stock, and to get you properly equipped. Riding helmets and cowboy boots or covered stirrups should be worn for safety.

WINTER CAMPING

Winter camping is one of the most advanced and challenging of outdoor adventures. It requires knowledge and a positive mental attitude. Winter campers need a solid foundation of basic camping and survival techniques.

The best time to begin preparing for winter adventures is during the warm months of the year. You'll have the weeks you need to read about cold-weather clothing, nutrition, and winter ecology, and to gather or make equipment and clothing. As the weather cools, practice your outdoor skills on day hikes and overnight outings. Adult group leaders with training in cold-weather living should carefully instruct crew members in every phase of winter camping.

Before a winter trek, campers must familiarize themselves with the best cold-weather techniques, equipment, and advice. Many local outing clubs and universities sponsor classes in winter survival, and so do some sporting goods shops and units of the military. A number of BSA local councils conduct cold-weather camping programs, and the Northern Tier National High Adventure Programs and Philmont Scout Ranch offer courses in the best techniques of winter camping.

CROSS-COUNTRY SKIING

To learn the basics of cross-country skiing, you need no more space than an empty field or a snowy park close to home. Once you've mastered the basics, skis may become an essential part of your cold-weather camping gear, carrying you deep into remote wildernesses for the best winter treks of your life.

A good way to learn to ski is to follow the tracks of other skiers over gently rolling terrain. The tracks will help guide your skis while you practice the skills you'll use for backcountry treks. Low hills will give you a chance to try gradual ascents and easy downhill runs as you practice kicking and gliding—the basic forward motion of cross-country skiing.

ROCK CLIMBING

Learn rock climbing by doing it near the ground where slips and falls aren't likely to result in injury. By scrambling on boulders and low rock faces, you'll become accustomed to rock, learn the limits of your abilities, and stretch beyond those limits without jeopardizing your safety. This kind of practice, known as *bouldering,* encompasses the rudiments of climbing; the critical difference is the degree of exposure. Boulderers climb no higher than they can safely jump or fall: usually no more than about four feet off the ground.

Staying near the ground, you can work your way around the face of a boulder all day long and learn a tremendous amount about climbing, yet never be more than a step from safety. Even then, it's essential to have spotters on the ground below you, to prevent you from falling when you slip. Before you start scrambling around on any rock face, check the ground below it. You'll almost certainly take a few falls, and if your spotters fail to check your fall, you'll want a landing area that is free of sharp rocks, holes, or anything else that could cause a laceration or a twisted ankle.

A Project COPE director or instructor or a well-qualified climbing instructor should supervise any type of climbing or rappelling. To gain experience and learn safety measures including anchoring and belaying, get trained by a qualified instructor. Outdoor retailers, colleges, climbing gyms, and Project COPE directors are usually reliable climbing resources.

Be aware of your impacts on the environment. Be careful not to deface rock surfaces or create permanent scars. Leave no trace when bouldering or rock climbing.

With the introduction of the Climbing merit badge in 1997 and the proliferation of climbing gyms and facilities, opportunities to climb and rappel are readily available in nearly every community. Climb On Safely outlines the BSA's recommended procedures and applies to all unit outings that including climbing/rappelling activities.

Qualified instructions is essential to conducting a safe climbing/rappelling activity. Some people who claim to be qualified or have had some experience with climbing or rappelling might lack sufficient knowledge to safely conduct these activities. Examples of sources of qualified climbing and rappelling instructors include, but are not limited to, the following:

- BSA climbing directors or instructors
- National Outdoor Leadership School
- Wilderness Education Association
- American Mountain Guides Association
- University/college climbing/rappelling instructors or students
- Project Adventure instructors
- National Speleological Society chapters

MOUNTAIN HIKING AND CLIMBING

While your backpacking and camping skills can carry you along trails deep into the backcountry, the final ascent from your camp to the crest of a mountain range may involve cross-country travel over rugged terrain. That's where the skills of mountain hiking and climbing come in.

The skills employed in mountain hiking and climbing bridge the gap between basic trail hiking and technical mountaineering. Unlike rock climbers who intentionally seek out steep, difficult routes, mountain hikers and climbers strive to reach their destinations with a minimum of difficulty or exposure to potential danger. Before crossing difficult terrain and climbing to the tops of mountains, backcountry travelers should first have mastered the basics of hiking.

Well before your trek, talk to other hikers and climbers and read about the peak you plan to climb. Mountain guidebooks contain much information about trailheads, campsites, the easiest routes up a peak, and areas of particular danger. You may benefit greatly from the experience of other people. Learn about the environment you'll be trekking through and do your part to reduce resource damage while climbing.

CAVING

Just as climbers are tempted by summits that rise far above the familiar ground, cavers are drawn into a subterranean wilderness every bit as exciting and remarkable as any place warmed by the sun. If you're interested in becoming a caver, you'll want to prepare as carefully as you would for the ascent of a mountain. A cave is no place to get hurt or lost. Underground rescues are difficult. A caver must do everything possible to prevent dangerous situations from arising.

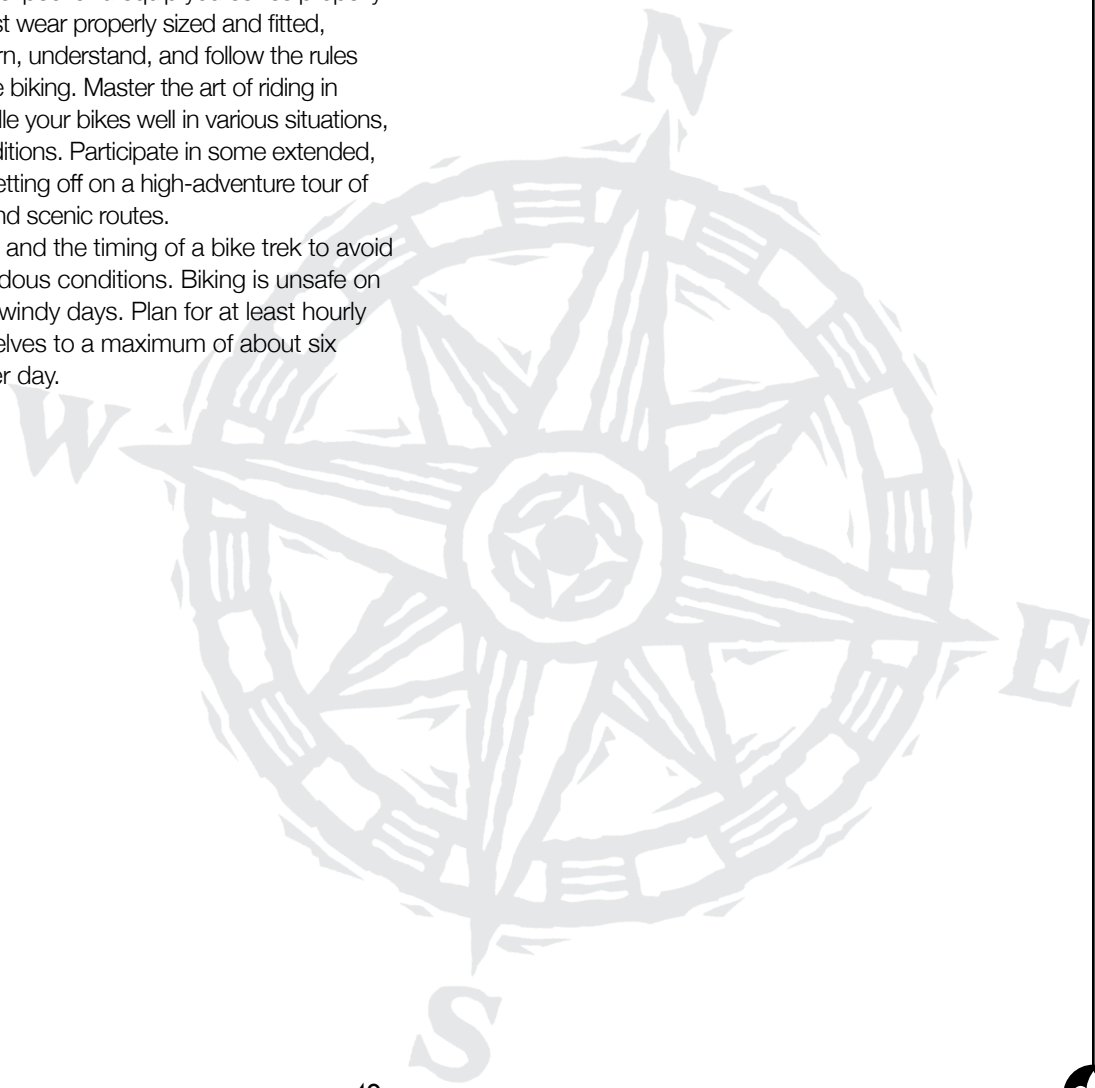
The best way to become acquainted with the basics of caving is by seeking help from a chapter (known as a *grotto*) of the National Speleological Society. Chapter members will help you learn to enjoy caves without endangering yourself or damaging the fragile ecosystems in caves. (See *Cave Exploring,* No. 430-102 at www.scouting.org.)

BICYCLE TOURING

Outdoor adventures don't happen only in the forested backcountry and on untamed rivers and lakes. Backroads and bike paths can be as inviting, as strenuous, and as exciting as any hiking trail. Mountain bikes allow you to travel moderately steep trails. Your crew might already have taken some daylong rides that gave you a hint of the pleasures awaiting serious cyclists. If so, you're probably ready to try mountain biking or bicycle touring, sports that combine bicycling with camping, navigation, mechanics, and physical fitness, and offer as much fun and satisfaction as any adventure you've ever tried.

Of course, as with every outdoor activity, you'll want to prepare ahead of time. Biking is strenuous. Do not attempt long treks or hill climbing without training and preparation. Before embarking on a two- or three-month coast-to-coast bike trek, learn what to expect and equip yourselves properly and safely. Cyclists must wear properly sized and fitted, approved helmets. Learn, understand, and follow the rules and procedures for safe biking. Master the art of riding in traffic and learn to handle your bikes well in various situations, weather, and road conditions. Participate in some extended, overnight trips before setting off on a high-adventure tour of America's backroads and scenic routes.

Plan both the route and the timing of a bike trek to avoid heavy traffic and hazardous conditions. Biking is unsafe on wet pavement and on windy days. Plan for at least hourly rest stops. Limit yourselves to a maximum of about six hours on your bikes per day.



CHAPTER 7

TRAIL PROCEDURES

On a trek, it is crucial to everyone's well-being to adopt and put into practice proper trail procedures. Every member of the crew should be aware of these procedures before you depart for a trek:

- Always keep the crew together.
- Use the buddy system.
- Anyone may call a halt.

Keeping the crew together is essential in preventing anyone from becoming lost, but it is frequently neglected unless the crew leader insists on it and each member of the crew is committed to doing his or her part. The entire crew should hike within hearing of one another.

The buddy system works well in any outdoor situattion, not just aquatics. Before the trek, make sure everyone has at least one buddy; buddies can also tent together.

Emphasize that every member of the crew has a right and even a duty to *call a halt* to the entire group when necessary. Encourage every crew member to call a stop to check a hot spot, adjust a pack, adjust layers of clothing, eat a snack for energy, drink some water, or for any other reason. When necessary, the crew leader should redistribute crew equipment and food to lighten the load of someone who is having difficulty.

ASSIGNING DUTIES

An effective way to backpack quickly and safely is to divide responsibilities among the members of the crew. There are four basic duties: those of the scout, the smoother-upper, the crew leader, and the sweep.

▲ SCOUT

◆ LEADER

⬢ SMOOTHER-UPPER

■ SWEEP

● HIKER

Scout

With map and compass in hand, the scout strikes out a little ahead of the rest of the group in search of a route everyone can follow. Careful to maintain a course that leads toward the crew's destination, the scout stays within earshot of the crew.

Smoother-Upper

The smoother-upper takes a position in front of the group and ensures the other hikers the easiest walking possible by "smoothing up" the route established by the scout. For instance, the scout might climb up and over a steep knob or plunge through a dense thicket. The smoother-upper may decide to lead the group around the obstacle and rejoin the scout on the other side. The smoother-upper also sets the pace for the entire crew.

Leader

The leader "floats" among the crew members and keeps an eye on all the hikers. Leaving the determination of route and pace up to the scout and smoother-upper, the leader monitors the crew and decides when to take a rest stop, where to eat lunch, when to seek shelter from inclement weather, and whether to stop or turn back. When a decision is made, a message is passed up the line to the smoother-upper and the scout.

Sweep

Bringing up the rear is the sweep, who carries a first-aid kit and is responsible for seeing that all the other hikers are accounted for and are staying on course. If someone in the group needs to stop, the sweep calls a halt by passing the message up the line.

If there are more than four hikers in the crew, those without a specific duty hike in the middle of the line. At regular intervals, the leader rotates the responsibilities of scout, smoother-upper, and sweep so that everyone has a chance to master the skills required of each task.

This system works especially well to keep the crew together when hiking cross-country, but it is also helpful when hiking on a trail. To reduce impact on the land, cross-country travelers should take care not to walk directly in one another's footsteps, but to stay within voice contact of the rest of the crew. Before using this technique, discuss what to do if any hikers get separated from the crew.

DUTY ROSTER TASKS

Pitching the dining fly and tents, lighting stoves, and preparing meals are all crew activities. Everyone helps wherever he or she can until the jobs are done and the camp is secure. Then it's time to check the duty roster for the assignment of individual tasks that make a trek run smoothly.

Rules of the Trail

As with any public thoroughfare, a trail has certain rules its users must obey. There aren't many of them, but they are important matters of common sense.

- **If there is a registration box at the trailhead, sign in.** Officials of the agency in charge of the area will know where you've gone, and they can use your registration information to better determine the needs of future hikers.
- **Use switchbacks properly.** Switchbacks zigzagging a trail up a mountainside help prevent erosion by easing the steepness of the grade. Stay on the trail. When hikers cut across switchbacks rather than staying on the pathway, their boots can loosen the earth, disturb vegetation, and make it easier for rain and melting snow to wash away the soil.
- **Be kind to the backcountry.** Meadows and alpine tundra are fragile. Protect them by staying in the center of main trails, and by taking rest breaks on durable surfaces away from the trail. Camp in the trees rather than in meadows.
- **Treat other trekkers courteously.** Many people enjoy the outdoors, and in your travels you will meet some of them. Be polite. Step aside to let them pass. Respect their privacy and, if you camp, find a site hidden away from other tents.
- **Be quiet.** Be considerate of others and respect their solitude. Avoid making loud noises.
- **Give livestock the right of way.** Horses and pack animals are sometimes nervous around strangers. When you meet riders on the trail, step at least ten feet off the path on the downhill side and stand quietly while they pass. If the trail is too narrow for that, ask the lead rider for instructions.
- **Leave gates the way you found them—**open or closed. Ranchers and farmers whose animals graze the lands through which you hike will appreciate your thoughtfulness. Ask for permission before crossing private lands, and find out the landowners' wishes so that you will maintain good relationships.
- **Pick up litter.** Do the land a favor and set a good example by picking up any trash you find and by asking hikers you meet if they have litter you can carry to the trailhead for them. Be wary of creating litter unintentionally. Prepack items to reduce the chances of littering.

Divide the duties evenly among members of the crew. On long-term campouts, change assignments after lunch each day. For an overnight outing, each person can perform one duty, changing assignments for the next day.

If a crew member has earned a religious award in Scouting, consider asking that person to serve as chaplain's aide.

Organize the cooking routine so that everything will be done neatly and efficiently. Members of small groups may pitch in and help with every aspect of meal preparation and cleanup. Larger groups can divide the responsibilities and, on long treks, rotate the duties daily so that everyone has a chance to try each task. In either case, someone must light the stove or campfire, get and filter water, do the cooking, and clean up. Prepare a list of tasks for each job so that everyone knows what is expected.

Stove Tasks. Refuel and light stoves and heat water for cooking and cleanup.

Water Tasks. Fill water containers with purified water, or filter water or treat with chemical disinfectant so that there is adequate contact time before use. Filter water on a durable surface near your campsite rather than at the stream or lake.

Cooking Tasks. Assemble food supplies and follow menus and recipes exactly to serve meals on time; store food, put cooking pots to soak, and have cleanup water heating on the fire before serving meals.

Cleanup Tasks. Set up wash and rinse water, clean cooking pots and utensils; police cooking and dining areas; store equipment, dispose of garbage and trash, and extinguish fires.

Enlist one person each day to monitor the condition of the campsite. Is the crew creating social trails or trampling vegetation? Does the kitchen area need to be moved? Is there any litter that needs to be picked up? Is food properly stored?

Sample Duty Roster

	Stoves	Water	Cooking	Cleanup
Friday	Leo	Pam	Bob	Patti
Saturday	Julio	Leo	Pam	Bob
Sunday	Frank	Julio	Leo	Pam
Monday	George	Frank	Julio	Leo
Tuesday	Patti	George	Frank	Julio
Wednesday	Bob	Patti	George	Frank

POSITIVE CREW DYNAMICS

The entire crew and especially the crew leader and adult adviser need to relate effectively to everyone in the crew. Crew congeniality is important to crew harmony. Make it a point to say something positive to each member of your crew at least once a day. Tell each person what he or she did well.

Good communication is crucial to your crew's success. Make sure that everyone participates in determining the objectives for the crew each day. After the evening meal is an ideal time to accomplish this.

Crew goals and trek expectations need to be discussed and established well before the high-adventure trek. A relaxed, confident attitude toward reaching realistic goals helps preserve crew unity and keeps the crew from overextending itself.

Remember: When you are hot, tired, hungry, and irritable, so is your crew. Everyone is expected to control personal behavior, especially when the going is tough. The crew leader needs to continually monitor the crew's dynamics.

Avoiding Conflicts

When a crew is functioning well, a high-adventure trek is rewarding for everyone. In a crew beset by internal conflicts, however, the experience can be miserable for everyone. By being attentive to a few standards of conduct, every crew member can contribute to a positive experience. Living the Scout Oath and Law is a good place to start. Crew members should live it at all times.

When trekking over a period of a week or more, some specific areas need attention to ensure harmonious crew relationships.

Each crew needs to have a designated crew leader. This individual should be selected by the group. The person selected should be people oriented, relate well to others, seek input before making a decision, and be alert to the needs of everyone in the crew. The crew will rely on this person to make decisions, which must be respected by everyone. A dominant person attempting to take over from the crew leader may create a conflict.

Crew members should be allowed to select their own tent mates. Human relationships are usually best established when members of the crew sleep two to a tent. Three persons to a tent sometimes leaves one person feeling left out. Four persons to a tent may mean a loss of privacy and sleep. (BSA policies regarding sleeping arrangements for adults, youths, and coeds must be followed.)

Being tolerant of other crew members and sensitive to their feelings is crucial. Each crew member should consider, "What habits do I have that may be displeasing to others? Am I willing to modify my behavior if it is offensive to someone else?" For instance, dwelling on personal accomplishments or interests may not be welcomed by other crew members. Rising late in the morning, not changing clothes frequently enough, or just being grouchy are habits that may not be well received. Personal hygiene becomes especially important when crew members will be living together on an extended trek. A reasonable degree of neatness is usually appreciated. When someone occasionally becomes moody, it may be best to leave that person alone. A positive attitude and outlook is welcome and especially important during difficult periods when the crew is under stress.

Everyone should be willing to cooperate to accomplish crew chores. A duty roster lets everyone know what's expected, but there will be times when pitching in to help others will be helpful to accomplish crew goals.

Borrowing or misplacing someone else's personal equipment can create friction. A crew member must always ask permission before borrowing something from another member of the crew.

Bring enough food so that everyone can consume all they want. Hoarding of food is unacceptable. The crew food belongs to the entire crew.

Horseplay has no place in the wild outdoors. Even a simple game of hacky sack or Frisbee may cause someone to become injured and jeopardize the experience of the entire crew. Every crew member needs to recognize that what is acceptable behavior at home might not be acceptable in the backcountry where help is far away. Be aware that some activities can damage vegetation or leave lasting scars. Make sure the activity is appropriate for a primitive and fragile environment.

Be sensitive when offering advice. If you need to give advice to a person whose conduct is less than acceptable, use the "sandwich" technique. Offer the person a compliment, make a suggestion, and follow up with another compliment. This approach makes the advice easier to accept and more likely to be followed. It protects the ego of the person receiving the advice.

STAYING HEALTHY

Strict adherence to proper health and safety practices is crucial on a trek. Trekkers are responsible to themselves for remaining strong and healthy. Additionally, each individual is responsible to other members of the crew. Failure to treat water, to wash hands before preparing meals or touching food, or to clean dishes thoroughly may affect the health of everyone in the crew. Health and safety are crew responsibilities as well as individual concerns. Here are some wise trail practices that will help keep you and your crew strong, safe, and healthy.

Conserving Body Energy

Begin each day's travel slowly, allowing plenty of time for your muscles to warm up. Take brief rest breaks to refresh yourselves and adjust your clothing to meet changing weather conditions. Use as many energy-saving techniques as possible; nibble snacks and drink plenty of liquids to sustain you through the day.

When hiking up steep ascents use the "rest step." Place the sole and heel of one foot flat on the ground. Lean forward and momentarily lock your knee. For an instant the bones of your leg and hips will support your weight, allowing the muscles of your thigh and calf to rest. Repeat this sequence with your other foot. Your pace will be slow, but you will save energy and make steady progress up the mountainside.

Use "rhythmic breathing" in conjunction with the rest step. To breath rhythmically, synchronize your breaths with your steps. On moderate slopes, take one breath per step; on steep slopes, take two or three breaths per step to take in more oxygen.

Never hike to the point of exhaustion. You may need those reserves of energy to meet unexpected situations.

Foot Care

Foot travel is your primary means of transportation on a backpacking trek. Sound, healthy feet are a must, not only for hikers, but also for rock climbers, skiers, and other outdoor adventurers. Proper foot care will keep your feet sound and healthy. Cut your toenails short and square—don't round the corners. Clean feet and socks will reduce the possibility of blisters. Wash your feet before and after hiking. Change your socks daily. Always keep your feet and socks dry. Treat cuts and sores on your feet with antiseptic and adhesive bandages or moleskin. Give hot spots immediate attention. Applications of tincture of benzoin toughen the skin and thereby help prevent blisters. Use foot powder each morning to keep your feet dry and less prone to developing blisters.

Personal Cleanliness

Backcountry cleanliness is important for your health and happiness. While you probably won't wash as frequently as you do at home, you can take a good bath with just a couple of pots of water. Carry them at least 200 feet from springs, lakes, or streams. Give yourself a thorough scrubbing with a washcloth, biodegradable soap (if you need soap), and the water in one pot. For rinsing, use a cup to dip out water from the second pot. Portable water bags with a shower spout make cleaning up even more enjoyable.

Be sure to wash your hands with biodegradable soap before cooking or eating food and after going to the bathroom.

Clothes Washing

On a long trek, you should wash your clothing frequently. Use a minimum of soap and do your washing at least 200 feet away from a spring, stream, lake, or other body of water. Be sure to rinse all the soap out of your clothes. After rinsing, spread clothes over tree limbs or shrubs where they will dry quickly. Be courteous to others by keeping your clothes out of sight; they did not hike into the backcountry to see your laundry.

Treating Drinking Water

All water from all sources—including springs, streams, and wells—must be treated. Enforce this rule strictly. Your own well-being is at stake.

The most certain way to treat water is to bring it to a full boil. At any elevation, simply bringing water to a rolling boil is effective to kill microorganisms that cause disease. Water treatment tablets or iodine crystals will effectively kill most waterborne bacteria and viruses. To treat cold water, you'll need to double or even triple the contact time to destroy *giardia*—a disease-causing microorganism—that may be present. This means that, before drinking the water, you must let a quart of water stand for at least 30 minutes after adding a tablet or two, or two to four capfuls of iodine solution; if the water temperature is near freezing, the standing time could be as long as 90 minutes. Because treating water requires careful attention, you may want to purchase a high-quality water filter.

Dishwashing

Thoroughly wash and rinse dishes to protect your crew's health. Time taken to boil water for rinsing dishes is time well spent.

Dishwashing is easy if you use an established system. For an easy and effective system, carefully follow these steps.

- Have a plate scraper or a supply of toilet paper at the refuse pail. Each crew member scrapes his or her own plate and eating utensils and wipes them as clean as possible. (Or, use a recently developed product that allows you to w ipe your dishes and disinfect them at the same time.)
- Next stop is the wash pot containing biodegradable liquid soap. Using a plastic pad or sponge, each person washes his or her own plate, cup, and utensils.
- Use two rinses: the first in warm water to remove the soap, the second in nearly boiling water to sterilize and to make the dishes hot enough to dry without wiping. Allow dishes to remain in the rinse water for one minute. Remove them with the hot-pot tongs.
- Air-dry dishes on a clean plastic sheet. Put a ridge stick beneath the sheet to rest the dishes on so they will drain and dry rapidly. As soon as the dishes are dry, each crew member should pick up his or her own gear, have it inspected, and store it immediately.
- While these steps are being done, the cleanup crew washes the cooking pots and utensils. Also air-dry utensils.

To make sure that dishes are clean, someone should be directly responsible for inspecting all eating and cooking utensils after they are washed, before they are packed away. You may also wish to disinfect dishes by submerging them in boiling water *before* each meal to kill any bacteria or germs that have accumulated. Keep your hands clean and use your hot-pot tongs to dunk dishes.

Waste Water Disposal

When disposing of waste water, drain it through a strainer and dispose of it at least 200 feet away from your campsite. To make a strainer, punch holes in the bottom of a plastic bag and fill it with pine needles. Pour dishwater, cleared of all refuse through the bag, onto the ground near a stump or tree. Use a different location each time you dispose of dishwater. Be sure to pack out your strainer.

Trash and Garbage Disposal

Proper disposal of trash and garbage ensures a clean camp and protects everyone's health. Do not bury trash or garbage or dump it in latrines; bears and rodents will soon retrieve it. If fires are permitted, thoroughly burn all burnable trash and garbage. Do not throw cans and aluminum foil, including dehydrated-food packaging, into fires; they will not burn and some pressurized cans may explode. If there are trash containers provided nearby, foil and other nonburnable trash may be thrown away. **Otherwise, trash must be cleaned, flattened, and carried away in a litter bag. Put wet unburnable garbage in a plastic bag and carry it out.**

How Long Does Litter Last?*

- Styrofoam: indefinite
- Aluminum cans and tabs: 80 to 100 years
- Vibram soles: 50 to 80 years
- Leather: up to 50 years
- Nylon fabric: 30 to 40 years
- Plastic film: 20 to 30 years
- Plastic bags: 10 to 20 years
- Plastic-coated paper containers: 5 years
- Wool socks: 1 to 5 years
- Orange peel: 2 weeks to 5 months

*Estimates by a waste disposal expert

Catholes

In the backcountry, you'll need to dig a cathole latrine each time you eliminate body waste. Dig the hole at least 200 feet from any trail, water, or campsite. Make it about 6 to 8 inches deep, but no deeper than the topsoil. Take care of business, then cover the hole with soil and camouflage the site with leaves or other ground cover.

Some administering agencies require human waste to be packed out. Carry a supply of plastic bags for this purpose.

To reduce the odor of urine and the traces of salt found in human urine, urinate on a durable surface if possible (rock, sand, dry ground, etc.) at least 200 feet from any water source. Pour a little water from your water bottle on the spot to dilute the urine and reduce the odor.

For privacy, use the buddy system for the latrine by having one person wait nearby. Or, for latrines in established camps, use Occupied and Unoccupied signs on door latches.

Disinfection Techniques and Halogen Doses

(All doses added to one quart of water: dose/contact time)

Iodination techniques	Amount for 4 ppm	Amount for 8 ppm
Iodine tabs tetraglycine hydroperiodide EDWGT (emergency drinking water germicidal tablet) Potable Aqua Globaline	½ tab	1 tab
2% iodine solution (tincture)	0.2 ml 5 drops	0.4 ml 10 drops
10% povidone-iodine solution	0.35 ml 8 drops	0.70 ml 16 drops
Saturated iodine crystals in water (commercial name: Polar Pure)	13 ml	26 ml
Saturated iodine crystals in alcohol	0.1 ml (amount for 5 ppm)	0.2 ml (amount for 10 ppm)
Halazone tabs mono-dichloraminobenzoic acid	2 tabs	4 tabs
Household bleach 5% sodium hypochlorite	0.1 ml 2 drops	0.2 ml 4 drops

Concentration of halogen	Contact time in minutes at various water temperatures		
	5°C	15°C	30°C
2 ppm	240	180	60
4 ppm	180	60	45

Note: Recent data indicate that very cold water requires prolonged contact time with iodine or chlorine to kill *giardia* cysts. These contact times in cold water have been extended from the usual recommendations to account for this and for the uncertainty of residual concentration.

CHAPTER 8

TREK SAFELY

Among the best preventive measures against accidents are
- alertness and care in all that is done on the trek, and
- performing within the group's known capabilities.

Most common outdoor injuries are blisters, cuts, sprains, strains, bruises, and fractures. Trekkers also may become lost or get caught in storms, and they may panic as a result. Avoidable tragedies may occur if trekkers and leaders lack the skills and knowledge to deal with the problems encountered.

EXPECT THE UNEXPECTED

Anything can happen in the wild outdoors and often does. You should take measures designed to prevent accidents and injuries from occurring. Ask yourself: "What would happen if _____ occurred?" Consider all reasonably foreseeable problems and then devise a plan to minimize the risks and to manage a crisis.

Involve the entire crew in this process so that everyone becomes aware of potential dangers and how to avoid them. At an appropriate time each day, the crew leader should give the crew a safety briefing, identifying potential hazards that may be encountered during the day's trek and ways to avoid them.

Trek safety is a matter of foresight and good judgment. When you've planned your trek well, included responsible people in your group, and left a trip plan with someone, you can embark on an adventure confident that you are prepared to handle any situation.

If any emergency does arise—a hiker is injured, for instance, or becomes ill—calmly consider all courses of action, then make sound decisions. It may be necessary to go for help, but always use your brain before you use your legs. Think first, then act.

Obviously, the best way to stay safe in the outdoors is to not get into trouble in the first place. That requires planning, leadership, and good judgment. As long as you keep your wits about you and clearly consider the consequences of your actions, you'll be able to enjoy even the most remote wilderness areas safely.

The preparations you make before a trek can do a lot to ensure your safety in the backcountry. Thorough planning means you'll have all the clothing, equipment, provisions, and survival gear you'll need. You will have thought through the route you intend to follow, checked weather forecasts, practiced any special skills the outing will demand, and left a complete trip plan with responsible people who will search for you if you are overdue in returning home. Since your chances of getting into difficulties are greatly reduced when you travel with others, and your chances of getting out of difficulties are improved, you will have at least four people in your group. In short, you'll have done everything you can to foresee and avoid problems before they can occur.

DANGEROUS WEATHER

Anyone who ventures into the wild outdoors should be prepared for variety in the weather. Prepare for somewhat worse weather than is normally expected in the location of your trek at the time of year you go, so that you'll be able to deal with whatever weather occurs. Media weather forecasts can be misleading if your trek will be at high elevation or at some distance from a weather monitoring station. Land-managing authorities of federal or state agencies with local offices in the vicinity of your trek are probably your best resources for local weather conditions. Contact them immediately before your trek. Be sure to let them know where you will be trekking and the range of elevations involved.

Carrying a lightweight weather radio is a good idea, especially if your trek will last several days, you are trekking in an area that is prone to sudden weather changes, or you are trekking at a time of year when severe weather can be expected. Knowledge of cloud formations and barometric pressure will aid you in making your own forecasts. See the *Fieldbook,* No. 33104.

High Winds

Exercise caution when you must hike across a large open area, along the crest of an exposed ridge, or above timberline. Fierce winds may develop quickly, so have a plan in mind if you encounter them. If it becomes difficult to stand up in a wind, or if you're making little progress paddling into a stiff headwind, it's probably time to stop and make camp, but do not pitch your tents in groves of tall trees that may topple or break. Get craft off the water and trekkers to a naturally sheltered area, such as behind a large boulder. If the wind makes walking difficult, walk with the wind to safety.

In cold weather, high winds are especially dangerous. Exposed flesh can freeze quickly, resulting in frostbite, and fast-moving air rips heat from your body, creating a possibility for hypothermia. Carry a wind-chill chart with you and seek shelter when anyone in your crew is having difficulty.

Wind-Scale Numbers

(Simplified Beaufort Scale)

	When this happens . . .	Wind speed is: MPH	KM/H
0	Calm. Smoke goes straight up. No wind.	0–1	0–1.6
1	Direction of wind shown by smoke drift, but not by wind vane. Slight wind.	1–3	1.6–5
2	Wind felt on face. Leaves rustle. Wind vane moves. Light breeze.	4–7	6–11
3	Leaves and small twigs move steadily. Small flag held straight out. Gentle breeze.	8–12	13–19
4	Dust and loose paper raised. Small branches move. Moderate wind.	13–18	21–29
5	Small trees sway. Waves form on lakes. Fresh wind.	19–24	30–38
6	Large branches move. Wires whistle. Umbrellas are hard to use. Strong wind.	25–31	40–50
7	Whole trees in motion. Hard to walk against wind. High wind.	32–38	52–60
8	Twigs break from trees. Very hard to walk against the wind. Gale.	39–46	62–72
9	Small damage to buildings. Strong gale.	47–54	74–87
10	Much damage to buildings. Trees uprooted. Whole gale.	55–63	88–101
11	Widespread damage from wind. Violent storm.	64–72	102–116
12	Violence and destruction from wind. Hurricane.	73+	117+

MPH—miles per hour **KM/H—kilometers per hour**

Wind-Chill Chart

Actual Thermometer	Estimated Wind Speed (MPH) 5	10	15	20	25	30	35	40	Danger from Freezing of Exposed Flesh
35°	32°	22°	15°	11°	7°	5°	3°	2°	Little danger to exposed flesh
30°	27°	16°	9°	4°	0°	–2°	–4°	–6°	
25°	21°	10°	2°	–3°	–7°	–10°	–12°	–14°	
20°	16°	4°	–5°	–10°	–15°	–18°	–20°	–21°	
15°	11°	–2°	–11°	–17°	–22°	–25°	–27°	–29°	
10°	6°	–9°	–18°	–25°	–29°	–33°	–35°	–37°	
5°	0°	–15°	–27°	–32°	–36°	–40°	–42°	–45°	Increasing danger to exposed flesh
0°	–5°	–21°	–36°	–39°	–44°	–48°	–49°	–53°	
–5°	–10°	–27°	–40°	–46°	–51°	–55°	–58°	–61°	
–10°	–15°	–33°	–45°	–53°	–59°	–63°	–67°	–69°	
–15°	–20°	–39°	–52°	–60°	–66°	–71°	–74°	–77°	Great danger to exposed flesh
–20°	–26°	–46°	–58°	–67°	–74°	–79°	–82°	–85°	
–25°	–31°	–52°	–65°	–75°	–81°	–87°	–90°	–93°	
–30°	–36°	–58°	–72°	–82°	–88°	–94°	–98°	–100°	

Lightning

Open water, mountain summits, the crests of ridges, slopes above timberline, the bases of tall or lone trees, and large meadows are extremely hazardous places to be during lightning storms. In high country, plan to be off peaks and exposed places by afternoon, when thunderstorms are most prevalent. If you are caught in an exposed place, quickly move to shore or descend to a lower elevation, away from the direction of the approaching storm. A dense forest located in a depression provides the best protection. If you're on a lake, paddle to the nearest shore. Avoid taking shelter under isolated trees. Stay clear of unusually tall trees. Stay away from overhangs and caves because they are prone to being struck. Stay away from water, metal fences, and other objects that will conduct electricity long distances.

Squat or kneel down on a pad, keeping your head low. By squatting or kneeling on a pad with your feet close together, you have minimal contact with the ground, thus reducing danger from ground currents. If the threat of lightning strikes is great, the members of your crew should not

huddle together, but spread out at least 30 feet apart. If one member of your crew is jolted, the rest of you can give assistance. Whenever lightning is nearby, take off backpacks that have either external or internal metal frames. In tents, stay at least a few inches from metal tent poles.

Flash Floods

Threadlike streams can become raging rivers in a few minutes or even seconds. It is important to be alert to the possibility of flash floods and take steps to avoid a dangerous encounter. Pitch your tents on higher ground. During and after periods of rain, stay away from natural drainage areas. Always know where you are and how to get to higher ground. Watch for indicators of flash flooding, such as an increase in the speed or volume of stream flow. Stay out of flooded areas.

Rainy Weather

Wet conditions can make trails and campsites slippery, so you'll want to be especially cautious as you move from place to place. *Staying dry is important* to prevent hypothermia; getting wet will strip away body heat. With good rain gear to wear, a tight tent for shelter, and some plastic trash-can liners to protect your gear, you can stay comfortable. Don your rain gear and secure your camp before a storm hits, checking tent stakes, stowing equipment, and lowering the windward sides of dining flies.

During a long, stormy siege you might have to spend lots of time in a tent, and you may need to make a special effort to keep your spirits high. An interesting book, a small chessboard, a deck of cards, or a journal can keep you busy for hours, and so can storytelling, singing, and sleeping. Having a good time is often a matter of how you look at it, and if you can see wet weather as a special feature of the backcountry, you'll find much about it to enjoy. Abraham Lincoln once said, "Most people are about as happy as they want to be."

Dry Weather

Extremely dry weather presents two dangers: dehydration and the increased likelihood of forest and grass fires. You can avoid the first by drinking plenty of water (6 to 10 quarts a day is not excessive), eating, and by reducing your level of exertion to slow moisture loss through perspiration. Drink water. Coffee, tea, and soft drinks are diuretics that cause fluids to pass quickly through the body, resulting in a loss of hydration rather than providing any benefit. Protect your lips with a coating of lip balm and moisturize your skin with lotion. If the weather is hot, be alert for the symptoms of heatstroke and heat exhaustion.

You can lessen the danger of wildfires by planning meals that need no cooking, or by cooking over a backcountry stove. Don't light an open fire if there is any chance the sparks will ignite nearby brush, trees, or ground cover. Before you begin your trek, know the local land-managing agency's campfire restrictions.

WHAT TO DO WHEN LOST

When your crew hikes or paddles *together* instead of spreading out over a long distance on the trail or the water, the possibility of anyone's becoming confused is remote. Keep track of your location by consulting your map frequently. Look at your map before you get lost.

Never allow one member of your crew to leave camp or paddle or side-hike alone. Follow the rule of four: Always travel together in groups of four or more. If one person is injured, one tends to the victim and the other two go for help.

Should you become confused about where you are, don't panic. Look around for landmarks that will indicate your location. Check your maps. In your mind, retrace your steps. Discuss the situation with your companions. If you still can't make sense out of the surrounding terrain, follow a road to help, or, in the backcountry, make a brief, controlled check of the immediate area. If that doesn't give you any clues, stay where you are, make yourself comfortable, and remain calm. Searchers will find you.

Always carry a whistle with you. If you become lost, you can use it to signal your crew or summon help without expending a lot of energy.



AVOIDING ACCIDENTS

Most accidents occur late in the day in camp, not on the trail. Many of them involve horseplay. Fatigue, mild dehydration, and altitude may impair a crew member's performance and judgment. Rock throwing, improper use of equipment, foolishness in hanging the bear bags, climbing steep or rocky ridges, running through campsites, climbing trees, and carelessness around fire lays frequently cause accidents. To avoid accidents, maintain individual and crew discipline and practice safety in all activities.

Do not throw or roll rocks. This is particularly dangerous in steep country. There may be other hikers below you. The A-B-C of mountain climbing is **Always Be Careful.**

RATING RIVER DIFFICULTY

The International Scale of River Difficulty provides a standard classification system for rating the difficulty and risks in running rapids. You must remember that the scale is at best a rough estimate. It will vary depending on who does the evaluation, when the rating applies (during spring runoff, summer low water, etc.), and the condition of the stream.

Obviously, bank erosion, fallen trees, flood damage, and other factors can substantially affect the difficulty of a particular stretch of river within a short time.

Use the scale when planning a river outing and selecting a river. Remember that the scale is useful only if you know and fully understand your own capabilities and limits, and those of others who will participate in a river outing.

In addition, if the water or air temperature is below 50°F (10°C), or if the trip is an extended trek in a wilderness area, the river should be considered one class more difficult than normal. When you get to the river and begin your run, the most important rating is your own—the one you assign using your own eyes, ears, and good judgment.

International Scale of River Difficulty

The six classifications used for the International Scale of River Difficulty are as follows.

Class I. Moving water with a few riffles and small waves. Few or no obstructions.

Class II. Easy rapids with waves up to 3 feet, and wide, clear channels that are obvious without scouting from shore. Some maneuvering is required.

Class III. Rapids with high, irregular waves often capable of swamping an open canoe. Narrow passages that often require complex maneuvering. May require scouting from shore.

Class IV. Long, difficult rapids with constricted passages that often require precise maneuvering in very turbulent waters. Scouting from shore is often necessary, and rescue is difficult. Generally not possible for open canoes. Boaters in covered canoes and kayaks should know how to Eskimo roll.

Class V. Extremely difficult, long, and very violent rapids with highly congested routes that nearly always must be scouted from shore. Rescue conditions are difficult and there is significant hazard to life in the event of a mishap. Ability to eskimo-roll kayaks and canoes is essential.

Class VI. Difficulties of Class V carried to the extreme of navigability. Nearly impossible and very dangerous. For teams of experts only, after close study and with all precautions taken.

SAFETY AROUND PLANTS

Vegetation greatly enriches outdoor experiences. Hazardous plants will seldom cause concern for most backcountry travelers, though you will want to be able to recognize irritants such as poison ivy, poison oak, poison sumac, and nettles. When you are with experienced campers who know which plants can spice up a stew and which will make a tasty salad, you can learn plenty about safely selecting and preparing edible vegetation. However, do not eat any wild plants, including mushrooms, unless you are *positive* that you know what they are and that they are safe for human consumption. Enjoy wild plants by taking photos of them and leaving them for others to enjoy.

SAFETY AROUND ANIMALS

Animals often will be an exciting part of your adventures. Seeing them in their natural habitat is always a pleasure, but it's wise to remember that they are the permanent residents of the backcountry while you are a visitor. Treat them with respect, give them enough space so they'll not feel threatened by your presence, and they'll seldom present a threat to your safety. When an animal feels frightened, threatened, or trapped, it may fight for its life by attacking, scratching, and biting. In the event you are injured by a warm-blooded animal, seek treatment quickly, for a doctor must determine whether rabies treatments will be necessary.

Snakes

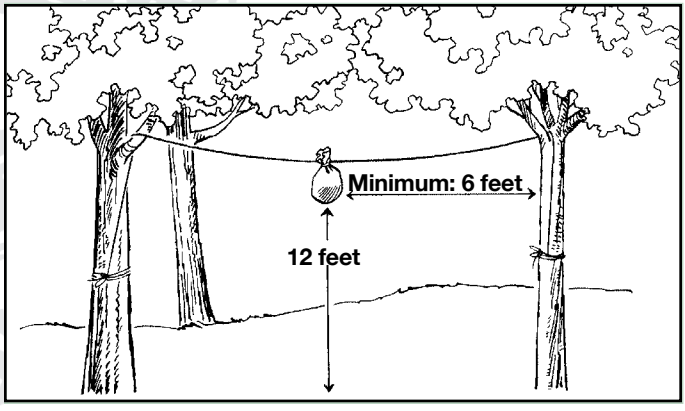
Snakes, including the venomous species, are beneficial members of the animal community. Snakes normally shun humans, but you should always stay alert for them. A snake may bite if it is startled or cornered, so take precautions to prevent that. As you hike and camp, watch where you put your feet and hands. Avoid thick brush. When you're climbing, don't reach blindly over a ledge. Wear sturdy boots and long trousers for extra protection. Do not attempt to catch or handle snakes, even nonvenomous ones.

Bears

Bears are a unique and natural part of many backcountry areas. Like all wild animals, they must be treated with respect. The black bear is not an aggressive animal, and most crews will not see one. In grizzly bear country, special precautions must be taken to avoid encounters.

What attracts bears? They have an acute sense of smell. The smell of food or any other odor (except human scent) may attract bears, which are curious by nature. Bears are opportunistic feeders. They will investigate any unusual odor as a possible food source and will take advantage of any easy meal that may be presented. Bears typically search for food at night, but also roam during the day.

Good Scout camping practices are the best way to avoid contact with bears. Avoid carelessness that results in improperly disposed-of food. Either burn all uneaten food, or store it in a bear bag at night. Do not place uneaten food in a latrine. Cook close to the campfire and away from the sleeping area. Never eat food in a tent since the odor remains after the food is gone.



Avoiding Bears

Here are some tips for avoiding dangerous encounters with bears.

Adhere to good Scout camping practices including:

Cooking— Prepare and cook food close to a fire ring. Sleep away from areas where food has been eaten or prepared, including the cleaning of fish. Never eat food in a tent. Don't wipe your hands on your pants.

Cleanup— Put wet garbage and uneaten food in plastic bags and hang them in a bear bag. Carry out wet garbage and dispose of it properly when you return to inhabited areas. Dispose of dirty dishwater and cooking liquids through a strainer.

Food storage— Store food and other "smellables" in a properly hung bear bag at night. Smellables include soaps, shampoo, toothpaste, toothbrushes, lip balm, sunscreen, insect repellent, unused film cartridges, candy bars, and first-aid kits. Hang your bag(s) on a rope strung between two trees—the bag(s) should be at least 12 to 14 feet above the ground. The weight of the rope will enable you to toss it over a limb, or tie up a couple of handfuls of dirt in a bandanna for a weight with which to hang your bear bags. Serious injury may result from using a rock. If you leave your campsite or pack during the day, hang your food and smellables. Do not leave your packs unattended at any time.

Personal sanitation— Avoid strongly scented lotions, soaps, deodorants, and shampoos. Wash early in the day (before 3:00 P.M.) so that residual smells will dissipate before night. Avoid using hair dressings, perfume, and deodorants. Brush your teeth as you usually do.

Sleeping— Wear sleeping clothing at night that has been stored inside a sleeping bag. At night, store away from the tent (preferably hung in a bear bag) all trail clothes, clothing soiled with spilled food, and containers that hold,or have held, drink mix or fuel.

Bear sightings— Report bear sightings to the landowner or land managing agency and other trekkers as soon as possible. Note the bear's size and color, and whether or not it had cubs.

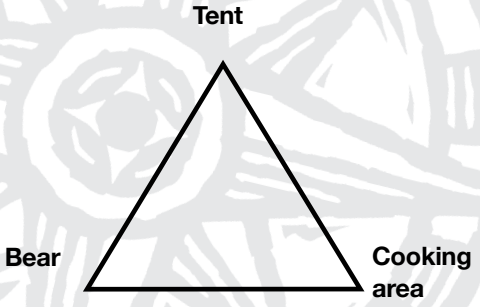
Firearms— No one should carry a firearm in the backcountry. A wounded bear is extremely dangerous, and no one has a right to shoot a bear without a current hunting license. Carrying firearms, except for use on shooting ranges, violates BSA policy.

What should you do if you encounter a black bear?

- Never provoke a bear to act aggressively. Do not throw rocks, use flashbulbs, or approach a bear. A mother with cubs is highly protective and easily provoked. Give them a wide berth.
- If a bear approaches your campsite (50 to 100 yards away), make loud noise to discourage it from coming closer. Never risk injury by attempting to save your food or gear. Both can be replaced if necessary.
- If a bear enters your campsite, gather your crew and quickly leave the area. Stay away until the bear is gone.
- If you awaken to discover a black bear curiously examining you, do not play dead and do not strike the bear. Talking in a calm tone of voice will let the bear know you are alive and well. If the bear is several feet away, you may be able to slip out of your sleeping bag and retreat. Back away slowly. Running may provoke a bear.

In grizzly country, check with local authorities to learn what to do if you encounter a grizzly. In areas known to be inhabited by grizzlies, you may want to carry an aerosol can of bear repellent. Hanging bells from a pack will alert bears to your presence and prevent an unwelcome surprise.

These recommendations are designed to minimize bear-human encounters, but no one can guarantee that an individual will not be injured by a bear even if these recommendations are followed. Bears are wild animals and it is ultimately your responsibility to be cautious when camping or trekking in bear habitat.



The human scent does not attract bears. Wearing scented lotions, soaps, deodorants, shampoo, or spilled food may, however, attract their attention. Avoid perfumed products with strong odors. Any clothing on which food has been spilled must be placed away from the sleeping area at night.

If a bear does visit your campsite, stay away from the bear and make noise. Safeguard your food by hanging it, or, if required, store all food in bear-proof containers. Never risk injury by attempting to protect your food or equipment from a bear.

Crew Checklist for Avoiding Bears

Review this list each evening on the trail.

- ❑ 1. Set up sleeping area away from cooking/eating area.
- ❑ 2. Clean up all food and trash around campsite.
- ❑ 3. Wash dishes and bodies at least 200 feet from the campsite and any source of water.
- ❑ 4. Put all food, smellables, trash, and unburnable garbage in the bear bag and hang at night.
- ❑ 5. Deposit trash and garbage in the trash box at the next staffed camp.
- ❑ 6. Do not use any lotions, soaps, deodorants, shampoos, or similar scented items in the afternoon or evening. Wash early in the day.
- ❑ 7. Store all clothing, packs, stoves, and fuel away from the sleeping area.
- ❑ 8. Wear clean sleeping clothing at night, free of any food or other odor.
- ❑ 9. Never take a flash photo of a bear.
- ❑ 10. Never get between a bear and food or a bear and a cub and never approach or provoke a bear.

Smellables include food (including candy bars and treats), unburnable garbage, soaps (personal as well as laundry), shampoos, deodorants, lotions of any kind, toothbrushes and toothpaste, suntan lotion and sunscreen, lip balm, insect repellent, unused film cartridges, first-aid kits, and anything else that has a nonhuman odor.

Avoiding the Plague

Rabies and bubonic plague are transmitted by rabbits, bats, ground squirrels, chipmunks, and other rodents. Do not handle or attempt to feed any animals, large or small.

Preventing Insect Bites

Ticks spread many diseases in North America, including Lyme disease, Rocky Mountain spotted fever, Colorado tick fever, relapsing fever, and others. Bites from mosquitoes, flies, and chiggers cause discomfort and can lead to localized skin infections. While everyone in a high-adventure program is at risk from insect and tick bites, protection is available to prevent discomfort and infections.

Protective Measures

Applying 0.5 percent permethrin to clothing provides effective protection against tick and chigger bites. Spray outdoor clothing until it is damp and allow it to dry overnight. Treated clothing will provide adequate protection for two weeks, even if soaked daily by rain, sweat, or swimming. Permethrin will not harm synthetic or natural fibers. It will not absorb through the skin when it is applied to clothing as indicated.

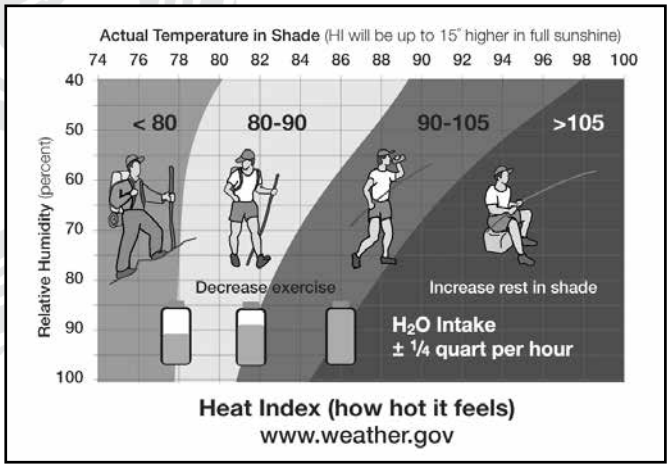
Using "DEET" insect repellents can prevent bites from mosquitoes and other insects. Limit concentrations used on the skin to 35 percent or less to minimize skin absorption. While the most effective repellents contain DEET, low DEET concentrations do not repel black flies or biting gnats, unless a composite formula that also contains a black-fly repellent is used.

DEET in 100 percent concentrations should not be used on the skin, but may be used to treat clothing. Place a garment, such as a head net, in a plastic bag with an ounce of 100 percent DEET and let it soak overnight to provide about two days of effective treatment.

Watch out for bees and wasps. If you or any member of your crew is allergic to stings, be sure that you have injectable epinephrine and that at least one other member of the crew is informed of the allergy and prepared to give treatment if necessary. Using a repellent with a maximum of 35 percent DEET may help trekkers avoid stings and thus the need to treat allergic reactions.

HANDLING BACKCOUNTRY FIRST-AID EMERGENCIES

When someone is injured or ill, you'll naturally want to assure that person's safety and ease discomfort by using proper first aid methods. However, do only those things you have been trained to do. If you don't know what treatment to administer, do nothing except get help. Well-intentioned but faulty handling of injury victims may do them more harm than good, which is all the more reason to get plenty of training and practice before you need it.



MEDICAL DANGERS

Hypothermia

Hypothermia occurs when a person's body becomes so cold that it can no longer warm itself. It is as if the body's furnace had gone out. As the core temperature drops, vital organs shut down. In extreme cases, death may result.

Hypothermia is of special concern to trekkers because it can sneak up on them gradually, even in the summer. On a wet, windy day when the temperature is between 32°F and 55°F, a tired hiker in wet clothing is a prime target. Since hypothermia impairs the ability to think clearly, victims may not realize the danger or be able to save themselves.

To avoid hypothermia, stay warm and stay dry. Eat plenty of energy foods, and don't push yourself to exhaustion. If your clothes become wet in cold weather, stop and change them. If you become chilled, stop, eat (refuel the furnaces), or make camp and crawl into your sleeping bag to get warm.

If a crew member becomes mildly hypothermic (body temperature 95°–90° F), get the person warm. If possible, get the person indoors and immersed in a warm (108°–110°F) water bath. If that is not possible, set up a tent, strip off wet clothing, and put the person in a dry, warm sleeping bag. If the person can eat and hold a glass, provide warm fluids such as hot chocolate. In severe cases, a second person should also strip down to underwear and get into the bag with the victim, who should rebreathe warmed air. The shared body heat can save the victim's life. Handle profoundly hypothermic persons (body temperature below 90°) gently to avoid causing an irregular heartbeat.

Adult leaders should know the symptoms of hypothermia and the correct treatment procedures, and should continually observe crew members on the trail, or in or on the water, for early diagnosis of this dangerous condition.

Heat Exhaustion/Heatstroke

While hypothermia and frostbite can occur when the body becomes too cool, heat exhaustion or heatstroke may develop if the body is unable to counter the effects of heat. In heat exhaustion, the loss of water and electrolytes through sweating exceeds what is replaced by drinking liquids and eating. It is a state of dehydration and shock. In heatstroke, an overworked mechanism simply stops functioning, and the core temperature soars.

When the weather is hot, keep your body cool. Drink lots of liquids even if you don't feel thirsty, and eat salty foods. Wear a hat and loose, light-colored clothing. Hike in the morning and evening. Rest in the shade during the heat of the day. Splash water on your face and body. Go for a swim in a shady brook.

Symptoms of heat exhaustion develop quickly. Victims become pale and their skin begins to feel cold and clammy. Breathing is shallow. They may feel nauseated.

Have a victim of heat exhaustion lie in the shade with the feet slightly higher than the head. Loosen the victim's clothing and cover him or her with a blanket or a sleeping bag. When the nausea passes, let the victim sip water to which a little salt has been added. Recovery is usually rapid, but have the person take it easy for the rest of the day.

Heatstroke is rare but very serious. The victim's face is hot, red, and dry. Other signs include confusion, disorientation, and bizarre behavior. Breathing may be difficult and noisy. The person may become delirious or lose consciousness. Body temperature may rise above 105°, which can lead to brain damage or death.

Rest alone is not enough to ensure the recovery of a heatstroke victim. You must cool the victim as quickly as possible. Dip the person in a stream or lake if one is near. If not, lay the person in the shade, pour water over the head and body, and drape the person with damp cloths. Rub the arms and legs to increase circulation. When the victim is able to drink, give as much water as the person wants. Get a heatstroke victim to a doctor as quickly as possible.

Sunburn

Sun damage to the skin before the age of 18 is a significant cause of malignant melanoma skin cancer later in life. The incidence of this cancer is increasing dramatically in North America (from one person in 200 in 1950 to one in 72 in 1996). In the outdoors—and especially at high altitudes, low latitudes, and in areas where sunlight can reflect and ultraviolet light concentrate such as on water, sand, and snow—crew members must protect themselves from sunburn.

Prevent sunburn with the use of sunblocks, floppy (broad-brimmed) hats, sunglasses, lip balm, and tightly woven clothing. Be aware that it's easy to feel cool yet burn on a cloudy day, when swimming, or while wearing a wet t-shirt. A wet, white cotton T-shirt provides no protection against ultraviolet burning. About 90 percent of ultraviolet rays penetrate a foot of water. And while heat rays do not penetrate a light cloud layer, ultraviolet light does.

Dehydration

When paddling or backpacking, you probably will sweat more than usual. Sun and wind also will remove large quantities of moisture from your skin.

To prevent dehydration, drink more water than you normally do. Four quarts a day may be needed, or more, depending on the conditions. In warm, dry climates, avoid dehydration by traveling early in the morning (before the intense heat of midday) and in late afternoon.

Symptoms of dehydration are light-headedness, dizziness, nausea, general weakness, and muscle cramps. For mild and moderate cases of dehydration, the patient should drink liquids and rest in the shade.

Acute Mountain Sickness (AMS)

Since acute mountain sickness (also known as altitude sickness) is caused in part by a too-rapid rise in elevation, acclimate yourself gradually to the high country. Spend a layover day partway up to give your body time to adjust. Get enough rest and drink plenty of liquids.

A victim of acute mountain sickness may develop a headache, feel a lack of energy, have no appetite, and sometimes become nauseated. Stop ascending as soon as these symptoms appear. If increased liquid intake is not quickly effective, descend to a lower elevation. The symptoms will soon disappear.

Sprained Ankle

If you twist an ankle while walking, muscles and ligaments can be strained, especially if you're carrying a heavy pack. A slight sprain may cause only mild discomfort, but in serious cases you could be temporarily disabled.

Wear boots with good ankle support and lace them snugly, but not so tightly as to impair circulation. Watch where you step, especially when crossing boulder fields, logs, and streams.

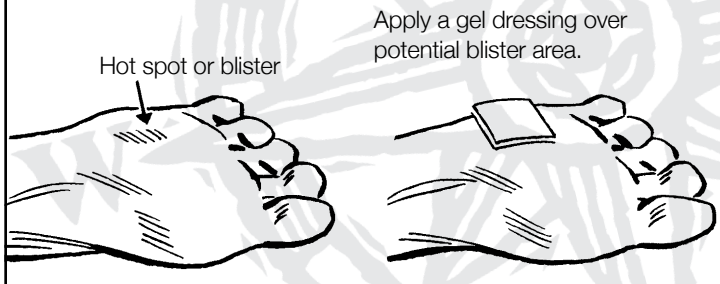
If a hiker suffers a sprain, do not take off the boot unless the foot becomes numb or the pain is severe. The boot will support the injury, and if it is removed, the ankle may swell so much that the boot can't be put back on. Reinforce the ankle by wrapping it, boot and all, with your Scout neckerchief, a bandanna, or an elastic bandage. If the victim cannot put weight on the foot, suspect a bone fracture and get the person to a doctor.

Blisters

Blisters occur when skin is irritated, usually by heat or by friction. Blisters on the feet are the most common and the most troublesome problem backpackers and paddlers encounter. Blisters may also form on paddlers' hands. Wear cycling or sailing gloves to prevent them.

Keep your feet clean and dry. Wear boots that fit properly and are well broken-in. Change your socks frequently. Toughen your feet with short hikes and your hands by paddling short distances before embarking on an extended trek.

A "hot spot" on your foot or hand signals the beginning of a blister. Stop immediately and protect the tender area with a gel dressing. Plain tape or moleskin over a hot spot can eliminate friction.



If a blister does form, you may need to drain it. Clean your foot or hand with soap and water, then prick the edge of the blister with a sterilized needle. Protect the wound by placing a gel pad over the blister. Several layers may be necessary to take the pressure of a boot off of tender skin.

Hantavirus

Hantavirus causes acute respiratory distress syndrome, sometimes called the "Four Corners" illness. Cases of this illness have occurred in most western states and a few eastern states.

Rodents are the primary carriers of recognized hantavirus. It is believed that hantavirus as well as the agents of several other diseases are carried in the urine, feces, and saliva of deer mice, rabbits, beaver, and possibly other wild rodents. A person contracts hantavirus by coming into contact with rodent feces, urine, saliva, or items that have been contaminated by them. Exposure frequently occurs when a person breathes dust from dried rodent feces and urine, especially when the dust is raised by sweeping. This illness is not suspected to be spread from one person to another.

Precautions for Campers and Hikers

During high-adventure treks, take the following precautions to reduce the likelihood of exposure to potentially infectious materials.

- Avoid coming into contact with rodents and rodent burrows or disturbing dens (such as pack-rat nests).
- Do not pitch tents or place sleeping bags in areas in proximity to rodent feces or burrows or near possible rodent shelters (e.g., garbage boxes or woodpiles).
- Do not use or enter cabins or other enclosed shelters that are rodent infested until they have been appropriately cleaned and disinfected. Report rodent-infested shelters to the next staffed camp.
- If possible, do not sleep on the bare ground. Use tents with floors.
- Store food in a bear bag hung well off the ground.
- Promptly burn all garbage and trash, or discard it in covered trash containers.
- Use only bottled water or water that has been disinfected by boiling, chlorination, or iodination for drinking, cooking, washing dishes, and brushing teeth.

Complying with these precautions will significantly reduce the potential risk of contracting infectious diseases.

Protection Considerations for Bloodborne Pathogens

Many people are concerned about the rapid spread of HIV (the AIDS virus) and try to avoid exposing themselves to this hazard. Health professionals and amateur first-aiders like those of us in Scouting may find ourselves faced with special concerns in this regard. We must know how to act and how to instruct the youth we lead. Try to maintain the BSA's tradition of rendering first aid to those in need, using appropriate precautions.

For safety's sake, treat all blood as if it were contaminated with bloodborne viruses. Do not use bare hands to stop bleeding; always use a protective barrier. Always wash the exposed skin area with hot water and soap or antiseptic immediately after treating the victim.

Leaders should always explain and make clear the possible degree of exposure to blood or body fluids as a result of Scouting activities. As a precaution, adult volunteers or youth members who might be exposed to another's blood and body fluids should consider hepatitis B vaccination.

WHEN TO STOP OR TURN BACK

When lightning crackles across the sky, the rocks around you begin to buzz with electricity, and the smell of ozone is heavy in the air, you don't need to be told it's time to abandon your immediate plans to reach a mountain's peak. When you discover that the bridge your trail should have crossed was washed away by a raging torrent, or that a bear has eaten all the food you'd intended to eat for the next four days, or that three feet of snow has fallen on the pass over which you'd intended to hike, you probably won't have any trouble sitting down and reconsidering your itinerary.

When borderline dangers arise, however, the decision might not be so clear. Perhaps you've become exhausted. The weather might be turning bad. A companion might be feeling ill, or you may simply be having a miserable time. Should you push on despite the growing adversity? Should you devise a new plan? Should you terminate the adventure altogether and just go home? A mark of wise backcountry travelers is their willingness to stop or turn back if an adventure becomes hazardous, since they know that such a decision can spell the difference between a safe and satisfying outing and a foolhardy flirtation with disaster.

As you're planning an adventure, talk with your companions about situations that might cause you to change or terminate your trip. Don't head for the hills until you agree that you are *all* willing to stop anytime hazards develop, and that you will not be afraid of deciding to alter your activities for the sake of everyone's safety and happiness.

Dangerous situations can develop slowly or quickly, and from just about any source. The fact that they often are unexpected is part of what makes them dangerous. Here are some of the most common.

Bad Weather

Weather is the outdoor condition that can vary the most, and thus it can have great effects on your safety. Be sure to check the latest weather forecast before your trek, and during it by carrying a small weather radio. Wind can shred a dining fly, make walking hazardous, or topple a tree on your tent. Lightning can drive you off meadows and ridges, and down from mountains. Rain and chilly temperatures bring with them the potential for hypothermia. If you can't keep your clothing and equipment dry, and yourself warm and safe, it's time to retreat to an area where you can.

Difficult Terrain or Conditions

As you plan a trip, you'll find out all you can about the terrain you expect to encounter. However, what you see on a map at home and what you see when you're on the trail may differ considerably. The climbs may be steeper and longer than you had anticipated. The trail may be rocky or overgrown with brush. Paddling into an unrelenting head wind across open water can quickly sap your strength. You might be tempted to push on, hoping conditions will improve before long, but to do so invites exhaustion. Don't look on the bright side; look on the realistic side. If the terrain is excessively rugged or the conditions unexpectedly difficult, shorten the distance you intend to cover each day, choose an alternate route, or turn back.

Fatigue

Outdoor activities often require quick coordination and sharp thinking. You have neither when you are overly tired, and that increases your susceptibility to injury and illness. Stop when you become weary and refresh yourself with food, relaxation, and sleep.

Darkness

Late afternoon is a time you'll want to be particularly alert to the dangers of overextending your energies. You and your companions probably will be tired from the day's exertions, and if your intended campsite is still several miles away, you might be tempted to rush to reach it before dark. Before you press on, though, determine whether you have plenty of time before sunset to complete the hike you're planning, and also to take care of tasks such as making camp and cooking supper. If not, stop now.

Insufficient Time

An ideal trip plan will include plenty of time for every activity, plus a few hours of leeway in case a crew falls behind schedule or finds additional things to see and do along the way. However, once you've filed a trip plan and noted when you expect to come home, allow ample time to return on schedule. If that means omitting some of your planned activities, then do it. Allow time to meet your deadline without taking risks or becoming exhausted.

Inadequate Food or Water

A group enjoying an outdoor adventure will burn up lots of calories, and they'll need plenty of food and water to replenish their energies. Going without food or water is not only uncomfortable, it also can impair a crew's ability to hike, think, and keep warm. If your provisions run low, it's time to go home.

Low Morale

When trip goals are not accomplished, when poor judgment of distances and time leads to exhaustion, and when clothing and equipment do not keep a crew warm and dry, morale can collapse. The outdoors is for enjoyment, not for suffering and unhappiness. Rectify the situation if you can, but if not, consider abandoning the trek and trying again after conditions improve.

IF AN INJURY OR CRISIS OCCURS

In spite of your best efforts to avoid it, sometimes an injury will occur. It is important that at least one person in your crew be currently trained in first aid and currently certified in CPR. When an injury does occur while you are on a trek, follow these steps in order.

1. Approach the victim safely. If someone has fallen, study the location before trying to reach the person. Is the victim on a ledge? If you approach from above, is there a chance of loose rocks rolling down and causing further injury? Will you be in danger of falling? Do not aggravate the situation by becoming an accident victim yourself.

2. Treat life-threatening conditions. First, stop any serious bleeding with pressure on the wound and on pressure points. Second, make sure the victim's airway is clear and restore breathing. Third, treat symptoms of poisoning and any other serious injuries.

3. Stabilize the victim. See to the less serious wounds, and treat every accident victim for shock.

4. Get help. Calmly assess your options. Can the victim walk to the trailhead? Are you and your companions able to carry the person out? (A victim with injuries to the spine or neck must not be moved without trained medical help.) If not, determine who should go for help and how it should be done. Write down all important information, including a description of the victim's injuries and details of your exact location, and send the report with the messengers. If you have a Global Positioning System (GPS) unit, record the location and your route to reach help; this will aid rescuers greatly. Use the reporting form below; carry a copy or two in the map pocket of your backpack. Send at least two people for help. Be certain the messengers know where to go, and that they can find you when they return. If the wait will be long, set up camp and do all you can to keep the victim safe, comfortable, and calm.

Reporting Backcountry Injury or Illness

The entire report should be a written message. Even for serious injuries, only a minute or two is required to get the facts and jot them down. First aid can be administered while this is being done. In haste over concern for the patient, there is a tendency to fail to get an accurate report or to remember everything. A written message will enable rescuers and medical personnel to respond appropriately with proper personnel, equipment, supplies, and transportation. Here is the information they need.

If a medical form is available, it should be kept with the patient until medical personnel arrive. It is recommended that adult leaders have a complete medical history and permission slip for every participant. The medical history form (see chapter 4) and permission slip, in most cases, will allow emergency medical treatment of a youth member in case of injury or illness when a parent or guardian cannot be contacted.

Reporting Deaths or Serious Injuries

Adult leaders should inform the council Scout executive or designee as soon as possible of a death or serious injury or illness. A serious injury or illness is defined as

- Any period of unconsciousness
- Any hospital inpatient admission
- Any surgical intervention other than suturing of the skin or setting of simple fractures

Leaders should be prepared to give the following specific facts.

Who? Name of subject, age, name and complete address of parent(s) or next of kin

What? Nature of illness or accident

When? Date, time of day

Where? Location and community

How? Circumstances of illness or accident, if known; e.g., swimming, boating, hiking

Witnesses? Names, addresses, and phone numbers

Prompt and accurate reporting to the news media is important and is the responsibility of your council. Each local council has a crisis communications plan, and the Scout executive will designate one spokesperson in order to avoid conflicting reports. In the case of a missing youth or a fatality, parents or next of kin will be informed by personal contact before any information is released to the public. Leaders of Scouting groups should not discuss an emergency with the media but should refer media personnel to the council Scout executive for information.

Notify the land management agency of any serious emergency. Evacuation should be accomplished with the cooperation and approval of the public land manager.

Injuries that are not serious need not be reported to the council Scout executive. It is recommended that a written report be prepared regarding each such incident and maintained by the unit for future reference.

Injury Report

Full name, address, and phone number of injured person:

Age, gender, and approximate height and weight:

Emergency contact, including address and phone number:

Exact location of injured person (preferably marked on a map also) and a description of how to get to the victim (take a GPS reading if a unit is available):

A detailed description of symptoms or injury: What are the patient's complaints? Describe as to severity, location, duration, and previous occurrence.

What are the patient's pulse, temperature, and respiration rate?

Describe cuts and burns as to extent and severity. Is the patient conscious, unconscious; hot, cold; breathing quickly, slowly, shallowly, deeply? Is the skin pale, flushed, sweaty, clammy? Has the patient lost blood? If yes, has bleeding been stopped?

Describe any treatment given to the patient:

Give the full name, address, and phone number of each witness:

Describe the condition and training of the persons with the patient. List any needs they have, such as food, clothing, or specific supplies.

CHAPTER 9

LEAVE NO TRACE

The tremendous rewards of high-adventure treks are drawing more and more people to the backcountry. At the same time, the vast territory suitable for treks is shrinking in size. More people and less land mean we all must be careful not to endanger the wild outdoors we have come to enjoy.

A HIGH-ADVENTURE ETHIC

A good way to protect the backcountry is to remember that while you are there, you are a visitor. When you visit a friend, you are always careful to leave that person's home just as you found it. You would never think of dropping litter on the carpet, chopping down trees in the yard, putting soap in the drinking water, or marking your name on the living room wall. When you visit the backcountry, the same courtesies apply. Leave everything just as you found it.

Hiking and camping without a trace are signs of an expert outdoorsman, and of a Scout or Scouter who cares for the environment. Travel lightly on the land.

THE SEVEN PRINCIPLES OF LEAVE NO TRACE

Leave No Trace is a nationally recognized outdoor skills and ethics education program. The Boy Scouts of America is committed to this program. The seven principles of Leave No Trace are not rules; they are guidelines to follow at all times.

The Leave No Trace principles might not seem important at first glance, but their value is apparent when considering the combined effects of millions of outdoor visitors. One poorly located campsite or campfire is of little significance, but thousands of such instances seriously degrade the outdoor experience for all. Leaving no trace is everyone's responsibility.

1. Plan Ahead and Prepare

Proper trip planning and preparation helps hikers and campers accomplish trip goals safely and enjoyably while minimizing damage to natural and cultural resources. Campers who plan ahead can avoid unexpected situations, and minimize their impact by complying with area regulations such as observing limitations on group size. Schedule your trek to avoid times of high use. Obtain permits or permission to use the area for your trek.

Proper planning ensures

- Low-risk adventures because campers obtained information concerning geography and weather and prepared accordingly
- Properly located campsites because campers allotted enough time to reach their destination
- Appropriate campfires and minimal trash because of careful meal planning and food repackaging and proper equipment
- Comfortable and fun camping and hiking experiences because the outing matches the skill level of the participants

2. Travel and Camp on Durable Surfaces

Damage to land occurs when visitors trample vegetation or communities of organisms beyond recovery. The resulting barren areas develop into undesirable trails, campsites, and soil erosion.

Concentrate Activity, or Spread Out?

- In high-use areas, campers should concentrate their activities where vegetation is already absent. Minimize resource damage by using existing trails and selecting designated or existing campsites. Keep campsites small by arranging tents in close proximity.
- In more remote, less-traveled areas, campers should generally spread out. When hiking, take different paths to avoid creating new trails that cause erosion. When camping, disperse tents and cooking activities—and move camp daily to avoid creating permanent-looking campsites. Avoid places where impacts are just beginning to show. Always choose the most durable surfaces available: rock, gravel, sand, compacted soil, dry grasses, or snow.

These guidelines apply to most alpine settings and may be different for other areas, such as deserts. Learn the Leave No Trace techniques for your crew's specific activity or destination. Check with land managers to be sure of the proper technique.

3. Dispose of Waste Properly (Pack It In, Pack It Out)

This simple yet effective saying motivates backcountry visitors to take their trash home with them. It makes sense to carry out of the backcountry the extra materials taken there by your group or others. Inspect your campsite for trash or spilled foods. Accept the challenge of packing out all trash, leftover food, and litter.

Sanitation

Backcountry users create body waste and wastewater that require proper disposal.

Wastewater. Help prevent contamination of natural water sources: After straining food particles, properly dispose of dishwater by dispersing at least 200 feet (about 80 to 100 strides for a youth) from springs, streams, and lakes. Use biodegradable soap 200 feet or more from any water source.

Human Waste. Proper human waste disposal helps prevent the spread of disease and exposure to others. Catholes 6 to 8 inches deep in humus and 200 feet from water, trails, and campsites are often the easiest and most practical way to dispose of feces.

4. Leave What You Find

Allow others a sense of discovery, and preserve the past. Leave rocks, plants, animals, archaeological artifacts, and other objects as you find them. Examine but do not touch cultural or historical structures and artifacts. It may be illegal to remove artifacts.

Minimize Site Alterations

Do not dig tent trenches or build lean-tos, tables, or chairs. Never hammer nails into trees, hack at trees with hatchets or saws, or damage bark and roots by tying horses to trees for extended periods. Replace surface rocks or twigs that you cleared from the campsite. On high-impact sites, clean the area and dismantle inappropriate user-built facilities such as multiple fire rings and log seats or tables.

Good campsites are found, not made. Avoid altering a site, digging trenches, or building structures.

5. Minimize Campfire Impacts

Some people would not think of camping without a campfire. Yet the naturalness of many areas has been degraded by overuse of fires and increasing demand for firewood.

Lightweight camp stoves make low-impact camping possible by encouraging a shift away from fires. Stoves are fast, eliminate the need for firewood, and make cleanup after meals easier. After dinner, enjoy a candle lantern instead of a fire.

If you build a fire, the most important consideration is the potential for resource damage. Whenever possible, use an existing campfire ring in a well-placed campsite. Choose not to have a fire in areas where wood is scarce—at higher elevations, in heavily used areas with a limited wood supply, or in desert settings.

True Leave No Trace fires are small. Use dead and downed wood that can be broken easily by hand. When possible, burn all wood to ash and remove all unburned trash and food from the fire ring. If a site has two or more fire rings, you may dismantle all but one and scatter the materials in the surrounding area. Be certain all wood and campfire debris is dead out.

6. Respect Wildlife

Quick movements and loud noises are stressful to animals. Considerate campers practice these safety methods:

- Observe wildlife from afar to avoid disturbing them.
- Give animals a wide berth, especially during breeding, nesting, and birthing seasons.
- Store food securely and keep garbage and food scraps away from animals so they will not acquire bad habits. Never feed wildlife. Help keep wildlife wild.

You are too close if an animal alters its normal activities.

7. Be Considerate of Other Visitors

Thoughtful campers respect other visitors and protect the quality of their experience.

- Travel and camp in small groups (no more than the group size prescribed by land managers).
- Let nature's sounds prevail. Keep the noise down and leave radios, tape players, and pets at home.
- Select campsites away from other groups to help preserve their solitude.
- Always travel and camp quietly to avoid disturbing other visitors.
- Make sure the colors of clothing and gear blend with the environment.
- Respect private property and leave gates (open or closed) as found.

Be considerate of other campers and respect their privacy.

LEAVE NO TRACE INFORMATION

For additional Leave No Trace information, contact your local land manager or local office of the Bureau of Land Management, the Forest Service, the National Park Service, or the Fish and Wildlife Service. Or, contact Leave No Trace at 800-332-4100 or on the Internet at http://www.lnt.org.

For posters, plastic cards listing the six Leave No Trace principles, or information on becoming a Leave No Trace sponsor, contact the Leave No Trace Center for Outdoor Ethics, P.O. Box 997, Boulder, CO 80306, phone 303-442-8222.

Master of Leave No Trace Training Course

Master of Leave No Trace training courses are available from the National Outdoor Leadership School (NOLS) in cooperation with four federal agencies (the Bureau of Land Management, Forest Service, National Park Service, and Fish and Wildlife Service). Approximately eighteen courses are taught throughout the country each year in all types of environments from alpine tundra to deserts.

The Master of Leave No Trace course has three components: 1) low-impact camping skills, 2) wild-land ethics, and 3) teaching techniques. A five-day field course provides students with a comprehensive overview of Leave No Trace techniques through practical application in a field setting comprising a short backcountry trip.

If you are interested in attending a Master of Leave No Trace course, call the Leave No Trace hotline at 800-332-4100 ext. 282. Also call that number for a list of Leave No Trace masters in your area.

MINIMUM IMPACT FOR BACKCOUNTRY TREKS

In addition to the seven principles of Leave No Trace, the following are some areas of particular concern when trekking through the backcountry or wilderness.

Cooking. Whenever possible, use lightweight stoves that leave no impact on the environment and no blackened pots to clean.

Graffiti. Graffiti, including tree carving, is a form of litter more offensive than paper trash. It is unfortunate that some of your camping predecessors have left their "marks" in otherwise pristine areas. Not only is graffiti defacing, it also is degrading and contrary to all for which the Boy Scouts of America stands. Make sure that neither you nor any members of your crew add to this offensive practice.

Water. Conservation and wise use of water must be practiced in the backcountry. Never bathe, do laundry, or wash dishes in or near springs or streams. Everyone needs water, and you should always leave springs and streams as clean as you found them.

Trails. Pledge yourself to respect all trails. Do not cut green boughs or trees or mark on them. Do not cut switchbacks and do not alter or change trail signs.

Campsites. Camp only in designated sites. Each crew is responsible for leaving a neat and orderly campsite. Your campsite must be left litter free and with catholes filled. Carry out all trash. Fires must be left *dead out* and campfire sites cleaned of debris before you depart. You should respect the feelings of those crews camping near you and those who will come after you.

Loud noise. Singing, cheers, and shouts of encouragement are appropriate in a Boy Scout camp, but in the backcountry they are not. Noise may detract from the experience of other outdoor users who go to the backcountry for solitude and tranquility.

Leave No Trace camping and hiking is the desire of everyone who enjoys the outdoors. It is not the wear of so many pairs of boots that mars the backcountry—it is the carelessness of inconsiderate campers.

It is our sincere hope that through your commitment to Leave No Trace principles, all wilderness areas will always remain beautiful, clean, and natural for future generations to enjoy outdoor adventures. Your dedication to the fulfillment of this goal is crucial.

Wilderness Use Policy of the Boy Scouts of America

All privately or publicly owned backcountry land and designated wildernesses are included in the term "wilderness areas" in this policy. The BSA's Outdoor Code and the principles of Leave No Trace apply to outdoor behavior generally, but for treks into wilderness areas, minimum-impact camping methods must be used. Within the outdoor program of the Boy Scouts of America, there are many different camping-skill levels. Camping practices that are appropriate for day outings, long-term Scout camp, or short-term unit camping might not apply to wilderness areas. Wherever they go, Scouts need to adopt attitudes and patterns of behavior that respect the rights of others, including future generations, to enjoy the outdoors.

In wilderness areas, it is crucial to minimize human impact, particularly on fragile ecosystems such as mountains, lakes and streams, deserts, and seashores. Because our impact varies from one season of the year to the next, it becomes important for us to adjust to these changing conditions to avoid damaging the environment.

The Boy Scouts of America emphasizes these practices for all troops, teams, and crews planning to use wilderness areas:

- Contact the landowner or land-managing agency (USDA Forest Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, state and private agencies, etc.) well before an outing to learn the regulations for that area, including group size limits, to obtain required permits and current maps, and to discuss ways Scouts can fulfill the expectations of property owners or land managers.
- Obtain a tour plan (available through local council service centers), meet all of its conditions, and carry it during the trip.
- Review the appropriate BSA safety literature relating to planned activities. (See Safe Swim Defense, Safety Afloat, Climb On Safely, and Trek Safely.) Also see the *Guide to Safe Scouting* on the BSA website at http://www.scouting.org/sitecore/content/Home/HealthandSafety/GSS.aspx for more information on current BSA policies and procedures for ensuring safe activities, as well as the *Fieldbook* website at http://www.bsafieldbook.org.
- Match the ruggedness of high-adventure experiences to the skills, physical ability, and maturity of those taking part. Save rugged treks for older unit members who are more proficient and experienced in outdoor skills.
- Conduct pretrip training for your group that stresses proper wilderness behavior, rules, and skills for all of the conditions that may be encountered, including lightning, missing person, wildfire, high winds, flooding, and emergency medical situations.
- Participate in training in how to apply the principles of Leave No Trace, and be proficient and experienced in the leadership and skills required for treks into wilderness areas.
- Adhere to the principles of Leave No Trace.

Outdoor Code

As an American, I will do my best to—

- **Be clean in my outdoor manners.** I will treat the outdoors as a heritage. I will take care of it for myself and others. I will keep my trash and garbage out of lakes, streams, fields, woods, and roadways.
- **Be careful with fire.** I will prevent wildfire. I will build my fires only when and where they are appropriate. When I have finished using a fire, I will make sure it is cold out. I will leave a clean fire ring, or remove all evidence of my fire.
- **Be considerate in the outdoors.** I will treat public and private property with respect. I will follow the principles of Leave No Trace for all outdoor activities.
- **Be conservation-minded.** I will learn about and practice good conservation of soil, waters, forests, minerals, grasslands, wildlife, and energy. I will urge others to do the same.

CHAPTER 10

WRAPPING UP YOUR ADVENTURE

You'll want to keep a record of your adventure. Within a day or two of every trip, while the memory of the outing is still fresh in your mind, write down the dates of the trek, the names of the participants, where you went, and a summary of the highlights.

KEEPING A JOURNAL

Lewis and Clark kept a journal of their exploration of the West; you might want to do likewise. A wirebound notebook makes a fine journal, as do hardbound books with blank pages. You might devote one page to each day, as in the following example.

Sample Journal Page

Date: _____ Time: _____

Campsite: _____

Companions: _____

_____

Weather conditions: _____

_____

What we did today: _____

Wildlife observed: _____

Personal thoughts: _____

_____

_____

_____

WHEN YOU GET HOME

After a trek is over, there are still a few things to do. Before you get on with other activities, take time to unpack, clean, and put away your gear. Air out your sleeping bag, pad, and blankets. Wash your eating kit and store any unspoiled, leftover food. Clean your share of the group equipment and return it to storage. If your tent and dining fly are wet, hang them in a basement, a garage, or on a clothesline in the sun until they are dry, before you roll and store them. Open and dry your water-filter cartridge before storing it.

Remember to write to and thank people (rangers, military base personnel, medical personnel, staff members) who helped make your trip memorable.

EVALUATING YOUR TREK

Even the best outdoor adventurers can improve their skills. After each adventure, get together with your crew and discuss what was good about the trip and what could have been better. Were the meals as easy to prepare and as tasty as you had hoped? Did everyone stay dry? Did you take the right equipment and supplies? Were the campsites good, and were you able to leave them with no trace of your presence? Learn from the successes of each trek as well as the mistakes, and before long you will have mastered the skills of high-adventure trekking.

Here are some aspects of your trek to consider.

- What went well?
- What could be improved?
- What will you do differently next time?
- What skills do you need to improve or acquire?
- What gear was not used or needed?
- What gear or supplies were needed that you did not take?
- Where will you go next?

APPENDIX

Unit Money-Earning Application 76
Historic Trails/50–Miler Award Applications 78
Reminders for Outings 80
Equipment Checklist 83
Resources 86

BOY SCOUTS OF AMERICA DATE _____

Received in council service center _____
(Date)

UNIT MONEY-EARNING APPLICATION

Applications are not required for council-coordinated money-earning projects such as popcorn sales or Scout show ticket sales.

(Local council stamp)

Please submit this application to your council service center at least two weeks in advance of the proposed date of your money-earning project. Read the 10 guides on the other side of this form. They will help you in answering the questions below.

☐ Pack
☐ Troop
☐ Team
☐ Crew

No. _____ Chartered Organization _____

Community _____ District _____

Submits the following plans for its money-earning project and requests permission to carry them out.

What is your unit's money-earning plan? _____

About how much does your unit expect to earn from this project? _____ How will this money be used? _____

Does your chartered organization give full approval for this plan? _____

What are the proposed dates? _____

Are tickets or a product to be sold? Please specify. _____

Will your members be in uniform while carrying out this project? (See items 3–6 on other side.) _____

Have you checked with neighboring units to avoid any overlapping of territory while working? _____

Is your product or service in direct conflict with that offered by local merchants? _____

Are any contracts to be signed? _____ If so, by whom? _____

Give details. _____

Is your unit on the budget plan? _____ How much are the dues? _____

How much does your unit have in its treasury? _____

Signed _____ Signed _____
(Chartered Organization Representative) (Unit Leader)

Signed _____ _____
(Chairman, Unit Committee) (Address of Chairman)

FOR USE OF DISTRICT OR COUNCIL FINANCE COMMITTEE: Telephone _____

Approved by _____ Date _____

Approved subject to the following conditions _____

34427

2007 Boy Scouts of America

GUIDES TO UNIT MONEY-EARNING PROJECTS

A unit's money-earning methods should reflect Scouting's basic values. Whenever your unit is planning a money-earning project, this checklist can serve as your guide. If your answer is "Yes" to all the questions that follow, it is likely the project conforms to Scouting's standards and will be approved.

1. ***Do you really need a fund-raising project?***

   There should be a real need for raising money based on your unit's program. Units should not engage in money-earning projects merely because someone has offered an attractive plan. Remember that individual youth members are expected to earn their own way. The need should be beyond normal budget items covered by dues.

2. ***If any contracts are to be signed, will they be signed by an individual, without reference to the Boy Scouts of America and without binding the local council, the Boy Scouts of America, or the chartered organization?***

   Before any person in your unit signs a contract, he must make sure the venture is legitimate and worthy. If a contract is signed, he is personally responsible. He may not sign on behalf of the local council or the Boy Scouts of America, nor may he bind the chartered organization without its written authorization. If you are not sure, check with your district executive for help.

3. ***Will your fund-raiser prevent promoters from trading on the name and goodwill of the Boy Scouts of America?***

   Because of Scouting's good reputation, customers rarely question the quality or price of a product. The nationwide network of Scouting units must not become a beehive of commercial interest.

4. ***Will the fund-raising activity uphold the good name of the BSA? Does it avoid games of chance, gambling, etc.?***

   Selling raffle tickets or other games of chance is a direct violation of the BSA Rules and Regulations, which forbid gambling. The product must not detract from the ideals and principles of the BSA.

5. ***If a commercial product is to be sold, will it be sold on its own merits and without reference to the needs of Scouting?***

   All commercial products must sell on their own merits, not the benefit received by the Boy Scouts. The principle of value received is critical in choosing what to sell.

6. ***If a commercial product is to be sold, will the fund-raising activity comply with BSA policy on wearing the uniform?***

   The official uniform is intended to be worn primarily for use in connection with Scouting activities. However, council executive boards may approve use of the uniform for any fund-raising activity. Typically, council popcorn sales or Scout show ticket sales are approved uniform fund-raisers.

7. ***Will the fund-raising project avoid soliciting money or gifts?***

   The BSA Rules and Regulations state, "Youth members shall not be permitted to serve as solicitors of money for their chartered organizations, for the local council, or in support of other organizations. Adult and youth members shall not be permitted to serve as solicitors of money in support of personal or unit participation in local, national, or international events."

   For example: Boy Scouts/Cub Scouts and leaders should not identify themselves as Boy Scouts/Cub Scouts or as a troop/pack participate in The Salvation Army's Christmas Bell Ringing program. This would be raising money for another organization. **At no time are units permitted to solicit contributions for unit programs.**

8. ***Does the fund-raising activity avoid competition with other units, your chartered organization, your local council, and the United Way?***

   Check with your chartered organization representative and your district executive to make certain that your chartered organization and the council agree on the dates and type of fund-raiser.

The local council is responsible for upholding the Charter and By-laws and the Rules and Regulations of the BSA. To ensure compliance, all unit fund-raisers MUST OBTAIN WRITTEN APPROVAL from the local council NO LESS THAN 14 DAYS before the fund-raising activity.

THE HISTORIC TRAILS PROGRAM



Love of America and devotion to our country depend upon a thorough appreciation of the ideals, principles, and traditions that have made our country strong. Historic Trails Award requirements emphasize cooperation between historic societies and Boy Scout, Varsity Scout, and Venturing units. A unit should establish a close relationship with a local society as soon as possible when planning a historic activity—most communities have such societies.

Reports from many units indicate that these societies have been eager to offer their cooperation by

- Suggesting trails or sites that are suitable for unit historic activities and exploration
- Providing units with historic information about the trails or sites
- Offering guidance to units during restoration and marking projects
- Financing the cost of materials used by units for restoration and marking projects
- Staging historic pageants and ceremonies with unit participation
- Directing public attention to unit historic activities through newspapers, television, and radio

If the trip is 500 miles or more from homes of group members (local council camp excepted) or crosses national boundaries and into the territory of other nations, a National Tour Permit Application, No. 4419B, is necessary. For trips and overnight camps less than 500 miles, use a Local Tour Permit Application, No. 34426B.

Award Requirements

To earn the award, members of your unit must plan and participate in a historic activity. A unit historic activity requires members to

1. Locate a historic trail or site and study information relating to it. (The information may be obtained from an adult historic society, public library, or people living near the trail or site.)
2. Hike or camp two days and one night along the trail or in the vicinity of the site.
3. Cooperate with an adult group such as a historic society to restore and mark all or part of this trail or site. (This may be done during the hike or overnight camp.) Or cooperate with such a group to plan and stage a historic pageant, ceremony, or other public event related to this trail or site—such an event should be large enough to merit coverage by the local press.

Your unit leader must then file the Historic Trails Award application with your local council service center.

Detach and send the report below to your local council service center.

HISTORIC TRAILS AWARD APPLICATION

(Note: Only chartered units may apply for this award. This award does not apply if any other award is available for this trip.)

To: Local Council Only (Do not send to national office.)

Unit No. _____ Tour Permit No._____

District _____

_____

Local Council Action

Approved_____ Disapproved_____

1. Name of historic trail or site covered _____
   Give state and nearest town.

   From _____ to _____ (two days and one night required)
   Date Date

2. Type of historic observance, pageant, dedication, etc., in which unit participated _____

   _____ **OR** type of historic project carried out (such as erecting marker, plaque, sign, etc.) _____
   (Note: Unit must have done either activity above.)

3. Name of local historic society or association with which the unit cooperated in this event _____

   _____

4. Total number of Boy Scouts, Varsity Scouts, Venturers, and leaders eligible for the Historic Trails Award _____

5. Enter our order for _____ embroidered awards, No. 00188 _____ leather awards, No. 00244

(NOTE: Embroidered and leather awards are not worn on uniforms but may be attached to tents, packs, blankets.)

(Contact your local council service center for current prices.)

34408A 2003 Boy Scouts of America
#34408A

Approved_____
Unit or tour leader

_____
Address Phone

THE 50-MILER PROGRAM



The primary objective of this program is to stimulate Boy Scout, Varsity Scout, and Venturer interest in the ideals of the movement and to promote activity that will result in personal fitness, self-reliance, knowledge of wood lore, and a practical understanding of conservation.

Chartered unit participation is most desirable; however, provisional groups are eligible. This award does not apply if any other award is available for a trip.

The Boy Scout, Varsity Scout, or Venturing unit or provisional group must follow these rules for a 50-Miler trip:

- Select a suitable trail or waterway.
- Adult leaders 21 or older must make the entire trip.
- If the trip is 500 miles or more from homes of group members (local council camp excepted) or crosses national boundaries and into the territory of other nations, a National Tour Permit Application, No. 4419B, is necessary. For trips and overnight camps less than 500 miles, use a Local Tour Permit Application, No. 34426B.

Award Requirements

The 50-Miler Award is presented to each qualifying individual for satisfactory participation in an approved trip. In order to qualify for the award, the group of which the individual is a member must fulfill all of the following requirements:

1. Make complete and satisfactory plans for the trip, including the possibilities of advancement.
2. Cover the trail or canoe or boat route of not less than 50 consecutive miles; take a minimum of five consecutive days to complete the trip without the aid of motors. (In some areas pack animals may be used.)
3. During the time on the trail or waterway, complete a minimum of 10 hours each of group work on projects to improve the trail, springs, campsite, portage, or area. If, after checking with recognized authorities, it is not possible to complete 10 hours each of group work on the trail, a similar project may be done in the unit's home area. (There should be no unauthorized cutting of brush or timber.)
4. Unit or tour leader must then file the 50-Miler Award application with the local council service center.

Detach and send the report below to your local council service center.

50-MILER AWARD APPLICATION

(Note: This award does not apply if any other award is available for this trip.)

To: Local Council Only (Do not send to national office.)

Unit No. _____ Tour Permit No._____

Provision group _____ (check)

District _____

Local Council Action

Approved _____ Disapproved_____

1. Name of trail or waterway_____
   Give state and nearest town.

   From _____ to _____ (minimum of five consecutive days required)
   Date Date

2. Trip was (check appropriate terms) ☐ by boat ☐ by canoe ☐ on foot ☐ by bicycle

3. Trail or waterway covered: from_____ to _____
   Starting point Finishing point

   Total mileage_____ (must be at least 50 continuous miles)

4. This group completed 10 hours of trail work, as follows. (Give details as to type of Good Turn, such as clearing trail, repairing bridges, cleaning up campsites and springs, leaving wood supply, etc.) _____

   _____

5. Total Boy Scouts, Varsity Scouts, Venturers, and leaders eligible for the 50-Miler Award _____

6. Enter our order for _____ decals, No. 33490 _____ embroidered awards, No. 00191 _____ leather awards, No. 00241

   _____ Staff Shield, No. 14131 (Contact your local council service center for current prices.)

Approved_____
Unit or tour leader

(NOTE: Embroidered and leather awards are not worn on uniforms but may be attached to tents, packs, or blankets. Decals may be used on canoes, paddles, or plaques.)

_____
Address Phone

34408A 2004 Boy Scouts of America

REMINDERS FOR OUTINGS

The Boy Scouts of America has an outstanding record in providing for the physical well-being of its members. Fitness is one of four key objectives. All Scouting outdoor activities must meet rigorous standards of health, safety, and program. Continued vigilance is necessary to ensure that youth have high-quality outdoor experiences that do not expose them to unnecessary risks. On outings, the adult leader assumes responsibility for the health and safety of the members in the group.

These points are to remind you of some of the major items necessary to achieve high standards of health and safety. Many of these items should be assumed by the unit committee or delegated to assistant leaders, the unit leadership corps, or even to individual youth members as they become increasingly proficient in outdoor skills. When you, the other leaders, and your unit committee prepare for your next outing, review this list and decide who will be responsible for each item.

Person Responsible	Once a Year
_____	Each member must have a current health history and a medical inspection (No. 680-001 within three years or, for high-adventure activities and adults over 40 years of age, form No. 680-001, required annually) by a licensed health-care practitioner, so that you will be aware of any special medical needs and be prepared to deal with them.
_____	Recommend that each participant have adequate health and accident insurance. Make sure parents are informed of this need.
_____	Arrange for survival training, including seven priorities: (1) the will to live—keeping calm, (2) shelter, (3) fire, (4) rest, (5) signaling device, (6) water, (7) food. Explain what to do if lost. Instruct the group on using a compass and topographic maps.

Person Responsible	Before Going
_____	Provide adequate adult leadership (age 21 or over) for the group considering the number of youth participants, their age, their training for and experience with the type of activity being undertaken, and the degree of difficulty of the outing. Maintain a minimum ratio of one adult per ten youths. Each group must have at least two adults. Observe the safety rule of four: No fewer than four individuals (always with a minimum of two adults) go on any backcountry expedition or campout.
_____	Submit application for tour plan No. 680-014, to your local council service center. The provisions in the tour plan must be followed.
_____	Know the area or arrange to go with someone who does. Always check out the area well in advance of the outing.
_____	Be sure someone in the group has first-aid training, especially in hypothermia, hyperthermia, dehydration, heat problems, blisters, frostbite, hyperventilation, acute mountain (altitude) sickness, insect stings, and CPR.
_____	Get written parental/guardian informed consent for each youth participant for adventurous outings that may involve a degree of risk. Be sure parents understand what the risks are and what precautions are being taken.
_____	Develop a program geared to the abilities and experience of the group. See the *Boy Scout Handbook,* No. 34554; *Fieldbook,* No. 33104; or *Venturing Leader Manual;* No. 34655.
_____	Using the Annual Health and Medical Record, check to be sure everyone is physically fit—no colds, serious allergy problems, etc. If a trek will be strenuous (most are), conduct pretrek training to get everyone in shape.

_____ Establish procedures for emergencies—high winds, heavy snow, flooding, missing persons. Search only the immediate area for missing persons—contact appropriate authorities if a more extensive search is needed.

_____ Let parents know where you are going, when you will leave, where you will leave vehicles, when you expect to return, and whom to contact for emergencies. Establish an emergency contact with a responsible adult in the group's home community and specify times when an adult on the outing will check in.

_____ Make sure every person is properly clothed, especially footwear and headgear, for all possible weather conditions.

_____ Leave pets at home.

_____ Fireworks are never allowed.

_____ Be alert to weather conditions. Develop an alternate plan for severe weather.

_____ For high-adventure activities such as a whitewater trip or caving expedition, appoint someone whom the group leader will call once the group is "off trail" so that parents will feel comfortable, and as a safety precaution.

Person Responsible **On the Trail**

_____ Keep the group together. Use the rule of four: No fewer than four persons hike or canoe together. If one becomes ill or injured, one administers first aid while two go for help.

_____ Avoid hiking along highways, but if you must, hike against the traffic in single file well off the pavement. Wear highly visible clothing.

_____ Recognize the difference between difficult and dangerous areas and bypass the danger ous entirely. Attempt activities involving a degree of risk (white water, rock climbing, etc.) only if equipment, ability, training, and accessibility to the area are commensurate with the degree of difficulty. Carefully check an entire whitewater course before attempting it. Portage canoes if unsure. Know the limits of your group and when to turn back.

_____ Always use the buddy system—on the trail, while traveling boats or canoes, and especially for treks into remote areas and winter camping—to maintain alertness to potential medical problems, as well as to keep track of everyone. Hold periodic buddy checks.

_____ See that everyone maintains an adequate intake of liquids and food.

_____ Avoid lightning, swollen streams, rapids, traveling at night, etc. Stay away from peaks, ridges, and open fields when hiking or backpacking. Stay near the shoreline when boating or canoeing.

Person Responsible **In Camp**

_____ Select campsites that are protected from high winds, lightning, flash floods, cliffs, falling rocks, and dead limbs or trees, and areas that are free of poisonous plants. Take adequate measures to avoid insects (flies, ants, mosquitoes), ticks, etc.

_____ Use treated water, or purify untreated water. Avoid water in stagnant pools or ponds or in heavily polluted streams.

_____ Permit no flame of any type to be used inside or near any type of tent, whether flame-resistant or otherwise. Pitch tents at least 30 feet from any fire.

_____ Using liquid-fuel stoves or lanterns requires supervision by an experienced adult, with proper safeguards for transportation and refueling.

_____ Have a fire plan ready to use if a fire occurs. Appoint fireguards and rotate this duty daily. Never leave a fire unattended.

_____ Provide a means for keeping perishable foods cold.

_____ All pots, dishes, and utensils must be scraped clean, thor oughly washed in warm soapy water, and rinsed in hot water with a sanitizing agent added.

_____ Use a cathole or straddle trench latrine located at least 200 feet from any water source—spring, lake, stream, etc. Cover fecal matter with dirt after each use and completely close hole before departing, or pack it out if required by the administering agency.

_____ See that everyone maintains personal cleanliness. If showers are not available, participants should take periodic sponge baths. Encourage everyone to brush teeth at least once daily.

_____ Plan activities to avoid horse play—most injuries in camp are related to careless, unplanned activity. Report any serious accident to your council service center. Schedule nine to ten hours of sleep between taps and reveille and see that quiet is maintained during this period.

_____ Show respect for the wild outdoors. Use "Leave No Trace" techniques.

_____ Use the Safe Swim Defense for all swimming. Use Safety Afloat for all outings when watercraft are used.

_____ Make sure fires are dead out. Sprinkle coals with water and stir them—repeat as many times as necessary. Use the "cold-out" test by having some one run a bare hand through extinguished coals and ashes. Place crossed sticks over a fire lay to indicate that the fire was left dead out.

Person Responsible

_____

_____

_____

_____

_____

At Conclusion of Trek

Check in when returning; let contact person know you have returned.

Remove, store, or distribute food packages from packs, especially opened ones.

Clean and/or dry equipment and store it properly.

At least two adults remain at the pickup point until all youths have been picked up.

Write thank-you letters to land managers, landowners, and others who extended courtesies.

EQUIPMENT CHECKLIST

Backpacking Equipment

Carry on Your Person

Essential

- ☐ Matches, in waterproof container*
- ☐ Knife, pocket*
- ☐ Compass, cased*
- ☐ First-aid kit, personal*
- ☐ Survival kit (made)
- ☐ Nylon cord, 200-lb. test, 20 feet*
- ☐ Fire starters
- ☐ Sunglasses, case, safety loop
- ☐ Bandanna
- ☐ Money, identification, fishing permit (all in waterproof bag)
- ☐ Pencil or ballpoint pen
- ☐ Notebook, pocket-size
- ☐ Toilet paper in plastic bag

Optional

- ☐ Comb, pocket*
- ☐ Watch, (preferably) waterproof*
- ☐ Nail clippers
- ☐ Documents for customs (if needed)
- ☐ Flashlight, small; extra batteries

Wear

(Keep extra or emergency items in pack pockets or near the top of the pack for use when needed.)

- ☐ Boots, hiking—ankle-high (broken in but not broken down)
- ☐ Socks, medium weight
- ☐ Trousers, uniform*
- ☐ Shirt, long-sleeved (for sun protection), uniform*
- ☐ Belt, uniform, webbed*
- ☐ Hat, broad-brimmed

Carry in Pack

The choice of a pack is a personal thing. Each youth or leader must live with and out of his or her pack for a long time. A high-quality pack and pack frame will save time and money in the long run. The Black Bull Jr. Combo I and the Black Bull Horizon II Combo available from BSA Supply Group are excellent choices. Pack frames also are a matter of personal taste; they offer many advantages, especially when used with a pack designed for them. Other frame-pack combinations are available—a potential purchaser should try out each to be sure. Shoulder pads may be welcome additions.

Keep often-used items in pack pockets or near the top of the pack. Food should be protected, plainly marked, and readily accessible.

Clothing

- ☐ Rainsuit with hood, or poncho, lightweight*
- ☐ Windbreaker, hooded, water-repellent; unlined ski parka
- ☐ Shirt, long-sleeved, lightweight
- ☐ Shirt, jac-shirt, sweater, or sweatshirt—warm, long-sleeved
- ☐ T-shirts (2)
- ☐ Undershorts (2)
- ☐ Socks, medium weight (3–5 pairs), wool or polypro
- ☐ Sneakers (for camp wear)
- ☐ Gaiters (for hiking muddy or snowy trails)

Sleeping Gear

- ☐ Sleeping bag;* washable liner* (carry in stuff bag or wrap in waterproof plastic, cinch down to 10 by 16 inches)
- ☐ Sleeping pad, foam
- ☐ Ground cloth,* waterproof light nylon or medium plastic, slightly larger than sleeping bag
- ☐ Long johns (choose for lowest temperature expected)
- ☐ Cap, warm stocking, for night
- ☐ Flashlight;* spare bulb and batteries*

Eating Gear

- ☐ Bowl, plastic
- ☐ Cup, plastic
- ☐ Spoon, large
- ☐ Water bottle

Toilet Articles

- ☐ Soap, liquid, biodegradable, in plastic bag
- ☐ Towel, small, in plastic bag
- ☐ Personal toiletries in plastic bag
- ☐ Mirror, small, metal or plastic
- ☐ Toilet paper in plastic bag
- ☐ Sunscreen and lip salve
- ☐ Insect repellent
- ☐ Foot powder
- ☐ Comb or hairbrush

Optional

- ☐ Head net or insect netting
- ☐ Camera and film in waterproof bag
- ☐ Binoculars in case
- ☐ Laundry soap
- ☐ Notepad and pencil
- ☐ Fishing gear (very compact kit), telescoping rod
- ☐ Bible or prayer book
- ☐ Sunglasses
- ☐ Plastic bags—assorted sizes
- ☐ Fishnet underwear
- ☐ Field identification guides

*Starred items are available through your local Scouting distributor.

Crew Gear for Backpacking

Shelter

- ☐ Tent or tarp, nylon, lightweight or improvised from 10-by-12-foot plastic sheeting, rigged as "A" tent or lean-to for two campers; plus one extra for dining fly*
- ☐ Tent pegs
- ☐ Poles, collapsible

Cooking Gear

- ☐ Pots, 4-quart, lightweight (6)
- ☐ Frying pans, 8-inch (2)
- ☐ Spoon, large, cooking-type (2)
- ☐ Can opener, small roll-type
- ☐ Can opener, puncture-type
- ☐ Water purification tablets or liquid
- ☐ Spatula, medium
- ☐ Scouring pads
- ☐ Soap, liquid, in plastic bottle
- ☐ Sanitizing tablets*
- ☐ Tongs, hot-pot
- ☐ Water containers, collapsible

Camp Tools

- ☐ Saw, folding
- ☐ File, 5-inch, ignition
- ☐ Trowel, for digging catholes
- ☐ Repair kit with cutting pliers, sewing kit, wire, nylon cord, adhesive tape, straps, plastic-repair kit, etc.
- ☐ Duct tape (wrapped around a fuel bottle)

Emergency and Miscellaneous Gear

- ☐ First-aid kit (suggested contents, page 60)
- ☐ Antiseptic
- ☐ Mouth-barrier devices for CPR
- ☐ Latex or vinyl gloves
- ☐ Goggles or other eye protection
- ☐ Snakebite kit* (optional)
- ☐ Maps, topographical
- ☐ Compass, magnetic
- ☐ Tote-litter bag* with plastic liner
- ☐ One 150-foot length of ¼-inch nylon rope (for hanging bear bag)
- ☐ Toilet paper (extra) in plastic bag
- ☐ Shock cord* (for securing gear)
- ☐ Bags, plastic
- ☐ Burlap or nylon bags for hanging food and smellables (4)
- ☐ Weather radio

Optional

- ☐ Gloves, cooking
- ☐ Knife and fork, cooking-type
- ☐ Paper towels
- ☐ Sponges
- ☐ Small funnel
- ☐ Pack stove and fuel
- ☐ Fuel bottles
- ☐ Reflector oven
- ☐ Special gear for mountaineering, conservation, etc.
- ☐ Global Positioning System (GPS) unit

Canoeing Equipment

Weight and compactness are as critical in canoe camping as in backpacking—sometimes you'll have to portage. Three persons to a canoe make portaging easier. But if whitewater is on the route, two to a canoe might be better.

The following equipment list is for a group of six or eight people sharing the group gear and food for 10 to 14 days. A variety of nonperishable foods is available at your supermarket. For tips on menu planning, see chapter 5.

Group gear can be put in separate cooking, tentage, and food packs. It might be better, however, to see that each canoe has its own share of group duffel—in personal packs—as insurance against complete loss.

Storing all packs and gear in waterproof or plastic bags tied in a gooseneck at the top will keep things dry. Securely tying the bags and gear to a thwart will prevent loss in case of an upset. Items not needed during passage should be stowed inside the packs. Nothing should dangle or stick out of packs on the portage trail. Pack frames may successfully be used to keep packs out of bilge space in canoes.

Carry on your person the same items listed for a backpacking trip. Keep emergency or often-used items in pack pockets or near the top. Food must be protected from spillage or spoilage, plainly marked, and readily accessible if in individuals' packs. Beware of sun and water!

If you take fishing gear on your canoeing trip, be sure to keep your lure box small, regardless of type, and secure your rod under the gunwale of the canoe. It's a good idea to take only barbless fishhooks. And, for your own comfort, you might want to take combination kneeling and shoulder pads, and a plastic sheet to protect your knees if it rains.

Because mosquitoes may be more prevalent around water, you may want to have your head net or insect netting handy. If your tent is not netted, be sure to have a mosquito net with you for comfortable sleeping.

Carry on Your Person

Same as Backpacking

Wear

Same as Backpacking with the following alternate suggestions:

- ☐ Shoes, sneakers or deck-type
- ☐ Sandals or canoeing shoes

Carry With You

- ☐ Head net or insect netting
- ☐ Combination kneeling and shoulder pads
- ☐ Plastic sheet, 2 by 3 feet, to protect knees from rain

Stow in Pack

Same as backpacking items (clothing, sleeping gear, eating gear, toilet articles, optional) listed under heading "Carry in Pack"

Group Gear for Canoe Camping

- ☐ Canoes—if rented, check condition thoroughly; show outfitter any damage before you accept them
- ☐ Rescue bags—one each for the lead and last canoes in the group
- ☐ Paddles—three per canoe, plus one or two extras for the group
- ☐ Life jackets—personal flotation device, U.S. Coast Guard–approved, to be worn by each person in a canoe
- ☐ Bailer—can be made from a plastic milk jug
- ☐ Sponge—tie to bailer with short cord

Shelter

- ☐ Tent—with floor, netted door, and vent (Voyageur recommended)
- ☐ Ground cloth, nylon or plastic (unless tent has waterproof ground cloth)
- ☐ Mosquito net (if tent not netted)
- ☐ Fly, kitchen—12 by 16 feet or 10 by 10 feet, lightweight
- ☐ Poles, aluminum (optional)
- ☐ Tent pins, steel (optional)

Cooking Gear
(Suit to group size.)

- ☐ Pots, 10-quart, nesting (2)
- ☐ Pots, 6- to 8-quart, nesting (2)
- ☐ Frying pans, 10-inch, aluminum (2), or griddle, aluminum, large
- ☐ Tongs, hot-pot
- ☐ Gloves, cooking
- ☐ Mixing jars, screw-cap, plastic, wide-mouth (2)
- ☐ Spoons, large (3)
- ☐ Knife and fork, large, cooking-type
- ☐ Can opener, small, roll-type
- ☐ Measuring cup, plastic
- ☐ Utensil bag, plastic
- ☐ Pot-and-pan bag, plastic
- ☐ Soap, liquid, in plastic bottle
- ☐ Scouring pads
- ☐ Swab, dish
- ☐ Scraper, rubber
- ☐ Spatula, small
- ☐ Water bottle, 1-quart (per canoe)
- ☐ Cooking sheet, plastic, 4-by-4-foot
- ☐ Matches, waterproofed supply
- ☐ Sanitizing tablets

Camp Tools

- ☐ Small shovel or large trowel
- ☐ Saw, folding or small bow
- ☐ File, 5-inch, ignition
- ☐ Stone, sharpening
- ☐ Repair kit with canoe-repair materials, cutting pliers, sewing kit, wire, nylon cord, adhesive tape, straps, plastic-repair kit, etc.
- ☐ Duct tape (wrapped around a fuel bottle)

Emergency and Miscellaneous Gear

Same as Backpacking

Optional

- ☐ Paper towels
- ☐ Reflector oven
- ☐ Lightweight stove and fuel
- ☐ Special gear for canoeing, Safe Swim Defense, etc.

RESOURCES

Boy Scouts of America. *Fieldbook,* No. 33104. Boy Scouts of America, 2004.

Boy Scouts of America. *Project COPE,* No. 34371. Boy Scouts of America, 2007.

Boy Scouts of America. *Okpik: Cold-Weather Camping,* No. 34040. Boy Scouts of America, 1990.

Cooper, Kenneth H. Kid *Fitness: A Complete Shape-up Program from Birth Through High School.* Bantam, 1992.

Drury, Jack, and Bruce Bonney. *The Backcountry Classroom,* 2nd ed. Falcon, 2005.

Ellison, Jib. *The Basic Essentials of Rafting.* ICS Books, 1991.

Fletcher, Colin, and Chip Rawlins. *The Complete Walker IV.* Knopf, 2002.

Forgey, William W. *Wilderness Medicine: Beyond First Aid,* 5th ed. Globe Pequot, 1999.

Graydon, Don, ed. *Mountaineering: The Freedom of the Hills,* 7th ed. Mountaineers, 2003.

Hampton, Bruce, and David Cole. *Soft Paths: How to Enjoy the Wilderness Without Harming It,* 3rd rev. ed. Stackpole Books, 2003.

Hart, John. *Walking Softly in the Wilderness: The Sierra Club Guide to Backpacking.* Sierra Club Books, 2005.

Harvey, Mark. *National Outdoor Leadership School's Wilderness Guide.* Fireside, 1999.

Hodgson, Michael. *The Basic Essentials of Weather Forecasting,* 3rd ed. Falcon, 2007.

Jacobson, Cliff. *The Basic Essentials of Map and Compass,* 3rd ed. Falcon, 2007.

Kjellstrom, Bjorn. *Be Expert With Map and Compass.* Wiley, 1994.

Landry, Paul, and Mattie McNair. *The Outward Bound Canoeing Handbook.* Lyons & Burford, 1992.

Leopold, Aldo. *A Sand Country Almanac: And Sketches Here and There.* Oxford University Press, 2001.

Manning, Harvey. *Backpacking: One Step at a Time.* Random House, 1986.

Moynier, John. *The Basic Essentials of Cross-Country Skiing.* Globe Pequot, 1999.

National Outdoor Leadership School Staff. *The NOLS Cookery: Experience the Art of Outdoor Cooking.* Stackpole Books, 2004.

Petzoldt, Paul. *The New Wilderness Handbook,* rev. ed. Norton, 1984.

Rea, Tom, ed. *Caving Basics.* National Speleological Society, 1992.

Schimelpfenig, Tod, and Linda Lindsey. *NOLS Wilderness First Aid.* Stackpole Books, 2000.

Strassman, Michael. *The Basic Essentials of Mountain Biking.* Globe Pequot, 2000.

Tilton, Buck, and Frank Hubbell. *Medicine for the Backcountry,* 3rd ed. Globe Pequot, 1999.

Visit the Boy Scouts of America's directory of high-adventure programs at http://www.scouting.org.

Journal



Journal



BOY SCOUTS OF AMERICA
1325 West Walnut Hill Lane
P.O. Box 152079
Irving, Texas 75015-2079
http://www.scouting.org

SKU 34245

7 30176 34245 0

34245 2011 Printing

©2011 Boy Scouts of America