“When Help is Delayed”:
Guidelines for Scouts, Venturers, Explorers and Scouters

How to provide Emergency Communications and training.

How to rapidly summon emergency assistance while on extended treks in isolated wilderness areas where immediate access to emergency medical search and rescue services may be delayed

How to anticipate, plan, simulate and prepare for wilderness emergency situations

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Overview and Executive Summary:

Many Scout Troops, Venturing Crews, and Explorer Posts plan and conduct outdoor high adventure weekend or longer treks into isolated or wilderness areas where rapid electronic communications access to emergency medical or search and rescue providers may be limited, delayed or unavailable. Some of these activities are by nature, high risk for participants due to natural hazards or other sometimes unexpected factors such as severe weather. It is very important, and a matter of due diligence on the part of unit leadership, to provide for alternative and reliable electronic communications devices to be carried on the activity such that if a medical or other emergency arises, it is possible to immediately contact emergency communications centers via 9-1-1 or other means to rapidly summon emergency medical aid, and search and rescue providers.
There is sometimes a well-intended but dangerously misguided ethic among some Scout Leaders expressed about “not bringing high technology devices on a wilderness experience.” However, the health and safety of the Scouts, Venturers, Explorers and leaders far surpasses in life safety importance, any such reluctance. You never want to be in the role of having to explain to grieving parents and family why their son or daughter was injured or died on an outing, primarily because you were unable to rapidly summon emergency rescue providers to the scene.

These emergency communications resources are surprisingly easy and relatively inexpensive to obtain and should always be a part of any such activity in order to protect the youth and adults on the event.

Moreover such communications devices permit notification of essential personnel and family members of changes in itinerary or delays due to weather or other factors that affect return times. Outings that are delayed with no explanation can be a source of great concern for parents and family members and it is essential to be able to rapidly inform them of the situation in order to prevent anxiety and worry.

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Emergency Communications Devices used to summon emergency medical and mountain rescue teams rapidly to the scene of a medical emergency may not be adequately emphasized in the curriculum of typical Wilderness First Aid courses.

Wilderness First Aid training is certainly essential to aid the victim initially, but it is important to remember that it is "first aid" and not "definitive care" as provided by physicians at a trauma center. Hypovolemic shock, neurological head and spinal injuries, cardiac and respiratory emergencies, anaphylactic shock are among the severe and life-threatening trauma and medical emergencies that require very rapid evacuation to definitive and advanced life support facilities if the victim is to survive. This is seldom possible in isolated remote field situations where delays in summoning advanced care and providing rapid evacuations are common and may result in disability and death.

There are commonly accepted emergency medical services protocols that suggest optimal and most successful means of evacuating victims of medical and trauma emergencies. These guidelines will save a huge amount of time, ensure a very rapid response by professional rescuers and if need be, permit summoning an aeromedical helicopter to the scene for a rapid and effective evacuation to a level one or two trauma center which is best equipped to deal with severe trauma and acute medical emergencies. The highest survivability for acute trauma and medical emergencies occurs if the patient can be delivered to a definitive care trauma center in less than one hour [called the "Golden Hour"] from the onset of the medical emergency. While an aeromedical helicopter evacuation may be expensive, in a life-threatening emergency, it may very well make the difference between life and death, and is usually covered by medical insurance. Most ground rescue teams do not charge for their services as they are generally volunteers.

**Mountain Rescue Association (MRA) Rescue Team**

Ask a local mountain rescue association [MRA] rescue team to give your unit a briefing on how they work and how to best work with them in providing support and accurate information if you need their services. The Scouts, Venturers, and Explorers will be very interested in such a presentation. Then if assistance from a rescue team is needed in the future, you will have a very good idea of what to expect. Some youth even join rescue teams in the future based on such presentations.
The traditional Scouting wilderness emergency concept when an emergency occurs, suggests having members of the group hike out over many miles to get help [which may take many hours or even days]. However, this time consuming action may seriously endanger the survivability of the injured or ill victim. Moreover, such action will separate the main group, and the group seeking aid which then could become injured, ill, or even lost, and thus become victims themselves, further exacerbating the initial problem. Similarly, leaving the main group to go for help may subject them to further potential danger in adverse weather or other natural hazards or threats. With the advent of modern telecommunications systems that function in isolated areas, this concept is no longer advisable or necessary.

Any organization going into remote isolated terrain where emergency medical response is not immediately available should equip themselves with the following Communications and related emergency equipment and provide emergency training for both Scouts and Leaders.

The following devices are recommended in order of most reliable and effective technology. Moreover, having more than one system as a redundant or failsafe alternative is considered even better for reasons noted below:

- **Satellite phone [best choice]**

Satellite phones will work just about anywhere to immediately and reliably to summon emergency help. You will need to know what public safety answering point [9-1-1 communications center] is nearest to your trek area, and what their ten digit number is, as dialing 9-1-1 on a satellite phone may not direct your call to the closest center serving the area you are in. Try it out before you go on a trek to make sure it works and let that center know where you are going, where you will be on each day of the trek [give them a topographic map with your intended itinerary, stops and route, dates of beginning and end of trek, home contact phone numbers for family members, where your vehicles will be parked with license numbers and vehicle descriptions, your sat phone number, etc.]

- Designate one or more contact persons for parents of Scouts to call for information who will be available during the trip to initiate or receive calls to and from the trip leaders.

- Make sure that older Scouts or Venturers are thoroughly trained and familiar with the communications equipment in case adults are unavailable or unable to use the devices [“sometimes the doctor needs a doctor”].

- Satellite phones can be rented relatively inexpensively by the day or week for short term use. Be sure to have extra batteries/solar chargers available.

https://www.satellitephonestore.com/rent/iridium/iridium-9505a.html
Two Meter Amateur Radios [Good choice]

Two meter amateur radios that can access repeater networks work in a wide variety of wilderness terrain. Scouts enjoy getting no-code technician licenses to operate such radios and they can also be useful in coordinating with groups on the trek as well as reaching the outside world for updates and meeting points, etc. Again, have extra batteries and solar chargers.

Ask a local “ham” [amateur radio] operator to help train your unit, or see the American Radio Relay League website and FCC website to learn more about ham radio licensing and training.

http://www.arrl.org/getting-your-technician-license

Satellite Emergency Notification Device [S.E.N.D.] Personal Locator Beacons [P.L.B.] [Fair to Good]

A satellite emergency notification device [s.e.n.d.] or personal locator beacon [p.l.b.] is a digital communications device that can send a distress signal via a satellite to a central communications center that indicates that there is an emergency or other urgent problem. Because it will not transmit voice messages but may transmit and receive pre-programmed or other digital text messages, [depending on the model and type], it can convey specific information which in turn may notify designated individuals or rescue organizations by smart phone and e-mail communications. A S.E.N.D. unit may have limited efficiency, but would be an alternative that is relatively inexpensive and a good backup for other means of communications described in this document.

Refer to the Rocky Mountain Rescue Group evaluation and discussion about appropriate use and case studies of S.E.N.D. personal locator beacons:

http://www.rockymountainrescue.org/about_PLBs.php

http://www.delorme.com/


Cell Phones and Smart Phones [Fair Choice]

Cell phones or “smart phones” often do not have coverage in remote areas, so unless you know that there is reliable cell or 3G and 4G data coverage throughout the area you will be going into, do not rely on cell phones as a first line of communications. [Note that most 9-1-1 public safety answering points [PSAP] are NOT able to receive text messages at this time. Voice based conventional wireless 9-1-1 calls are best for initiating emergency help requests. With some
exceptions, Cell phones generally do not accurately report geographic locations to a 9-1-1 Center so unless you have a GPS receiver or know exactly where you are, it may difficult for rescuers to locate you in a timely manner. Sometimes climbing to a high point such as a ridge or summit will get cell tower coverage if it isn’t available in valleys or densely forested areas.

**Adverse weather can lessen the effectiveness of cell phones, so have alternatives in place. Be sure to have spare batteries, a solar charger and more than one cell phone in the group.**

Certain satellite based rescue personal locator beacons such as the Delorme unit can be used with smart phones such as the Apple or Android technology to provide satellite links where cell phone coverage by conventional 3G or 4G networks are not available.

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**Additional Essential Support Technology**

- **GLOBAL POSITIONING SYSTEM [GPS]**

A Global Positioning Satellite locator system [GPS] will enable you to give exact geographic coordinates to the 9-1-1 communications center which can relay that information to rescuers so they can quickly locate the emergency scene. Take training on how to set up a **helicopter landing zone and how to assist with a helicopter landing** and avoiding injury from the aircraft. Most flight for life aeromedical helicopter organizations will provide training to interested groups.

http://www8.garmin.com/aboutGPS/

- **AED [automatic external defibrillator]**

AED’s are small and light enough to carry along in a backpack or river bag, etc. They can mean the difference between life and death in a remote area. CPR will not correct the disrrhythmia [ventricular fibrillation] which is the most common cause of sudden cardiac arrest [SCA]. **SCA is the leading cause of death in the nation killing over 250,000 annually.** Other cardiac conditions also affect youth such as **commotio cordis** resulting from a blow to the chest, or congenital cardiac abnormalities can result in an SCA. Grants are available to help acquire AED’s so they are within reach of Scout units and well worth the expense if they are ever needed. The **Cardiac Chain of Survival** requires, immediate recognition of an SCA, apply AED/CPR as needed. Notification of EMS/rescue via communications device, Stabilize patient and await rescue arrival. **For every minute that the patient is in cardiac arrest, survival probability drops by 10 percent.** So there is virtually no time to lose. The national average survivability of an SCA victim is less than 7 percent except where AED and CPR are immediately initiated.

http://en.wikipedia.org/wiki/Automated_external_defibrillator
PULSE OXIMETER

A portable pulse oximeter is a valuable electronic medical device used to measure the saturation of oxygen in the blood stream and to display a pulse rate of a patient. It is easily applied to a patient’s finger to display the information. This can be very useful in wilderness settings in case of cardiac or respiratory illness. While oxygen may not be available, a pulse-ox meter will at least provide a sign of oxygen adequacy or deficiency. Readings below 90 percent indicate a risk of hypoxia or oxygen deficiency. Pulse oximeters range from about $30 to $200+[ for professional models which are the most accurate and durable]. Operates on AAA batteries. See example

http://www.nonin.com/PulseOximetry/Fingertip/Onyx9500

BATTERIES AND SOLAR POWER SUPPLIES

A special note on batteries and solar power supplies. **Lithium long life batteries** tend to outlast alkaline batteries by a factor of about eight times. Moreover they **still operate in extremely cold temperatures where alkalines may not.** While more expensive initially, they are worth the added cost due to longer life and reliability. Solar power supplies and chargers are also important for those devices that require recharging with lithium ion rechargeable batteries in field situations.

OTHER ESSENTIAL TRAINING AND PREPAREDNESS

EVACUATIONS

Evacuations of ill or injured victims from remote areas by untrained and inexperienced personnel are generally not recommended for non-ambulatory victims even with comparatively minor injuries such as a fractured extremity. It is almost always best to stabilize the victim with first aid measures, keep them warm, provide fluids if indicated, and await professional rescuers. Most mountain rescue units initiating an evacuation transport use a modified Stokes Litter and have belay ropes for steep slopes or unstable terrain, and usually a large team of rescue litter bearers. The process is very physically demanding, and rescuers have to trade off frequently and rest, so a rescue team will continuously go from carry mode to rest mode to standby mode before again rotating into the carry group. A carry team of up to 20 or more rescuers would be typical with six to eight on the litter, and the rest in standby and rest mode. Sometimes wheeled litters are used where terrain permits.
It is essential that leaders and especially youth participating in outdoor high adventure activities in remote, isolated areas be trained in a standards-based certified emergency medical training programs. This training should include a considerable amount of scenario-based simulations of real emergent situations which have been shown to impart the best preparedness skills for real situations. The following are courses recommended for youth and adults.

### American Red Cross Health and Safety Training Courses

First Aid, CPR-AED, Wilderness First Aid, Emergency Medical Response


### Wilderness First Aid, First Responder, EMT Training

[http://www.nols.edu/wmi/](http://www.nols.edu/wmi/)

### Risk Management Planning

In reviewing the statistics and case studies of injuries and illness affecting youth and adults who participate in the wide variety of outdoor high adventure activities that Scouts, Venturers and Explorers may undertake, it is widely apparent that most of the incidents could have been mitigated or even prevented by an appropriate exercise in extensive pre-event planning to anticipate and prepare for as many risks and threats as might occur on the proposed event.


### Tabletop Exercise, Pre-Event Simulations and Scenarios

*A tabletop exercise* in which these events are considered in advance with both the youth and the adults, and solutions for prevention, mitigation, and response are carefully considered with input from experts, leaders, and youth. From these exercises, preparation, anticipation of risks, and appropriate training, equipment and modifications to plans may effectively mitigate risks and better prepare the entire group for an optimal experience as well as for dealing with emergent situations that may arise.

### Pre-Event Shakedown Activities

After concluding tabletop exercises, schedule a limited scope activity that will simulate parts of the planned event [e.g., a weekend hike, a winter cross-country ski weekend, a whitewater raft or canoe day, peak climb, rock climb/rappelling day, etc.] This will allow youth to get to know each other better, learn what strengths and weaknesses they have and what skills need improvement.
The event will also let youth and adult leaders observe group dynamics and interactions, and to learn what possible conflicts or physical strengths and weaknesses of each youth and adult may exist that could affect the morale and cohesiveness of the group.

In case of extreme problems that become apparent, and that may seriously or adversely affect the activity, it may be necessary to consider remediation or improvement opportunities including physical, behavioral, and emotional. If issues cannot be resolved, it may be necessary to consider asking the participant [youth or adult] not to participate to avoid adversely impacting the entire crew on the primary event.

Use **team-building exercises** to build team spirit, and have a de-brief each day such as the “**Thorns, Roses, and Buds**” exercise often used at Philmont where each youth and adult participant offers a **thorn** [problems], a **rose** [good things they experienced], and a **bud** [things they would like to see or experience, or what would help resolve the problems they may be experiencing.

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**THE VENTURING RANGER AWARD HAS A REQUIREMENT FOR PRE-EVENT PLANNING AS FOLLOWS:**

“Write a risk management plan for an upcoming crew high adventure activity such as a whitewater canoeing or a rock climbing trip. The plan should include nutrition, health, first aid, supervision, insurance, safety rules and regulations, proper equipment, maps and compass, in-service training, environmental considerations, emergency and evacuation procedures, and emergency contacts. From memory, list the survival priorities and explain your use of each in a survival situation. Learn about and then make a tabletop display or presentation for your crew, another crew, a Cub or Boy Scout group, or another youth group . . . ”

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**THE FOLLOWING IS A CLASS OUTLINE PREPARED BY VENTURING ADVISOR COOPER WRIGHT ON RISK MANAGEMENT, ADVANCED PLANNING AND PRE-EVENT EXERCISES SUCH AS TABLETOP AND SHAKEDOWN EXERCISES THAT CONSIDER PREVENTION, MITIGATION, AND RESPONSE TO POTENTIAL HAZARDS OF THE PROPOSED EVENT.**

**APPENDIX**

[posted on U.S. Scouting Service Project Website]

**CLASS OUTLINE**

**Venturing/Varsity Program Safety (VVS 105)**

Objective: To familiarize the student with risk management and safety considerations which relate to the high adventure activities associated with the Venturing and Varsity Scout programs.
1. **Change in Outdoor Ethics:** The current focus on training Scouts and Scouters in outdoor high adventure program safety emphasizes what to do after an emergency situation presents itself. In order of priority, we train people in wilderness survival, first aid, outdoor skills, safety management, and accident prevention. This class is intended to shift that focus to emphasize risk management and accident prevention first, then worry about outdoor skills, first aid and wilderness survival.

The idea is that

- an injury that does not occur needs no treatment;
- an emergency that does not happen requires no response, and
- an illness that does not develop demands no remedy.

2. **Present Boy Scouts of America Guidance:** A number of BSA publications address safety as it relates to high adventure, but there is no formal risk management program established at the unit level.

   - **The Guide to Safe Scouting** says: “Trail safety is a matter of common sense BSA has an abundance of literature relating to proper procedures and guidelines for a group on a trail.”
   - The **Boy Scout Fieldbook** has chapters on Outdoor Safety, and Planning.
   - The **Passport to High Adventure** contains chapters on Who Will Go, Trip Planning, and Trek Safety.
   - The **Safe Swim Defense and Safety Afloat** programs were established as a result of water related accidents and fatalities, and are both highly effective in preventing accidents.
   - **Climb On Safely** was recently introduced to reduce risks associated with climbing and rappelling activities.

   Although there are a number of incidents resulting in death or serious injury that occur on hiking trails every year, there is no formal risk management program to address the problem. Tour permits are a requirement that forces Scouters to plan ahead for outings. But in the case of high adventure activities, these permits require planning that just gets you to the trail head and no further. What is needed is a comprehensive “Safety Afoot” program to address the issue during high adventure activities.

3. **Causes of Outdoor Accidents:** As the Guide to Safe Scouting says, “trail safety is a matter of common sense”, but lets explore some specific reasons that accidents occur during high adventure activities.

   - **Lack of Preparedness:** Before a crew attempts a high adventure trek, it must be both physically and mentally prepared. The BSA Venture and Varsity programs are designed to stretch the Scout’s capabilities. For an activity to be rewarding, it must be challenging. Failure to prepare can not only ruin a high adventure activity, but can contribute to accidents, injury and even death. If, for example, some or all members of a backpacking crew are in poor physical condition, accidents are more likely to occur when exhaustion sets in. Poor morale can result from a failure to mentally prepare crew members for the rigors of a backpacking trek. Shakedown hikes before the final trek will help eliminate these problems.

   - **Exposure:** Unexpected changes in the weather combined with improper crew and individual equipment are a recipe for disaster. Keeping warm and dry are the prime considerations to prevent weather related injuries. Inadequate individual or crew equipment, or improperly used equipment contributes to the chances of exposure related injuries

   - **Being in a Hurry:** To avoid this pitfall plan each day’s trek to be reasonable in terms of distance and terrain to be traversed. Start out slowly and cover short distances until you know what your crew is capable of. Do not deviate far from your planned route. A side hike here and there is permissible, but stay with what you planned as closely as possible. If you fall behind schedule, don’t rush to make up time. Moving faster to make up for lost time only increases the possibility of accidents.

   - **Getting Too Tired:** Accidents on the trail occur most often when the crew is tired. Don’t make your trek an endurance contest. Plan your days to be challenging, but not so difficult that crew members will not enjoy their accomplishments. Fatigue slows reactions and mars judgment, both of which are contributors to accidents. Extreme fatigue causes the body and mind to react as if it were on drugs, thus further...
impairing judgment and reaction time.

- **Leader Judgment Errors**: A high adventure adult advisor is there for the health and safety of his crew first and foremost.

  When a dangerous situation presents itself, the leader must be able to recognize it and take appropriate action. I will illustrate several examples of situations which can lead to poor leader judgment. If one member of a backpacking crew becomes exhausted it is time to stop. Other crew members may want to continue, and in an attempt to please them, the leader may authorize the trek to go on. Further, if the crew is behind schedule and crew members are becoming fatigued, the leader may want to push on to remain on schedule rather than stop for the night. If unexpected situations arise, such as bad weather or an encounter with a wild animal, it may be time to stop for the night. The point is, a leader must be able to recognize dangerous situations and act to prevent accidents from happening.

- **Other Causes of Outdoor Accidents**: Without elaboration, here are some other obvious causes of outdoor accidents.
  - Improper use of equipment or faulty equipment.
  - Inadequate preparation.
  - Horseplay.
  - Swift water.
  - Loose, fallen objects.
  - Inadequate food and water.

4. **Five Preventative Virtues**: The potential for accidents to happen can be greatly reduced if leaders pay proper attention to the five following things:

  - **Dehydration**: Dehydration is a factor in about 90% of all backcountry incidents. When a person becomes dehydrated, it results in decreased dexterity, agility, and judgment. Leaders must ensure that their crews drink enough water. Crew members should continuously drink water during high adventure activities. Preventing dehydration is a major factor in preventing the next thing on the list.

  - **Heat Related Illness**: If a heat related illness is allowed to progress from heat prostration to heat stroke, the result can quickly be death.

  - **Cold Related Illness**: Hypothermia is a major cause of death in outdoor activities, second only to drowning. It is not only a winter time occurrence. In fact most cases of hypothermia happen when temperature conditions are around 50 degrees. The best way to avoid hypothermia in any season is to ensure that all crew members keep dry. This means possession and use of proper rain gear, wearing synthetic clothes instead of cotton while on the trail, and getting the crew under shelter if weather conditions become severe enough.

  - **Nutrition**: Nutrition on the trail is extremely important. Leaders should ensure that crew members are eating sufficient amounts of food. Trail menus should be heavy in carbohydrates. Instead of eating a heavy lunch each day, crew members should snack constantly on the trail. Break out the GORP at every break during the day.

  - **Exhaustion**: Prevent exhaustion by taking frequent breaks to relax, drink fluids and snack. Ensure that your schedule is reasonable. It's all right to challenge the crew, but don't make it a race.

5. **Dynamics of Accidents Model**: This model provides a tool for adult advisors to predict accident potential during high adventure activities. It combines Environmental Hazards (EH) with Human Factors Hazards (HFH) to determine Accident Potential (AP). EH are associated with terrain, weather, and equipment. HFH include physical condition, experience, skills, fear, and communication. The combination of EH and HFH result is some level of accident potential. Several examples will best illustrate how to use this model.

  - **Example 1**: A group has been hiking along the Appalachian Trail. It has been raining all day; the group
is tired. Accident Potential is high for ankle injuries. EH = rocky trail, difficult footing, wet rocks, slippery conditions. HFH = tired, cold hikers not paying attention to the trail. If people are aware of increased AP, they will be more careful about footing.

**Example 2: Environmental Briefing** - “Today we will canoe on the Delaware River. There are several EH to keep in mind: Broken glass and rusty cans on the river bottom (shoes will be worn at all times); No shade (sunburn, dehydration likely); Rapids (powerful currents can pin boats or swimmers). Each time a crew moves to a new environment, an new Environmental Briefing should be done.

6. **Planning Group Adventures:** The best way to ensure a successful trek is thorough and detailed planning. In planning high adventure activities there are four things that need to be considered.

   - **What Are The Capabilities Of The Group?** Leaders must determine the experience and knowledge levels of the crew members for the type activity being planned. This applies to leaders as well; both adult advisors and Scouts who will hold leadership positions in the crew. Adult advisors must determine whether the crew members possess the physical and emotional maturity to successfully complete the planned activity. The interests of the group should be considered when determining which type of high adventure activity is planned. If no one wants to do the particular activity being planned, then maybe it should be changed.

   - **Where Do You Want To Go?** Be sure that where you want to go matches up to the capabilities of the crew. If you are taking a group of 13 year olds backpacking, start on an easy portion of the Appalachian Trail rather than the Green Mountains of Vermont. The differences in terrain are striking. As Venture/Varsity Scouts become more experienced in a particular activity, then they can be further challenged.

   - **How Far Do You Want To Travel?** The planning required for a one hour drive to the Appalachian Trail for a weekend hike is considerably different from that required for a cross country drive to spend ten days on the trail at Philmont. In any case, each activity requires some amount of logistics planning. This additionally describes how far to travel each day. Considerations include the Time Control Plan, which is explained below, the type of terrain, what you want to do while on the trail, and the capability of the group.

   - **Where Will You Get Help?** Each of the previous considerations are generally done for most Scouting activities. This is the one that is normally not done very well, if at all. Leaders need to identify park or forest personnel, police, rescue, and medical assistance in or near the area of your high adventure activity. Phone numbers, locations, and how to reach them from any location on the trail or river need to be identified. This subject will be covered in greater detail when we discuss development of a Risk Management Plan.

7. **Risk Management Plan:**
Development of a risk management plan causes adult advisors to be attentive to all potential hazards which could occur during a high adventure trek. The elimination of all risks is not the point of a risk management plan. It provides a means of conscientious and consistent review of every aspect of the proposed trek, and requires identification of sources of help if accidents or illnesses happen. Refer to the Sample Risk Management Plan handout and we will discuss its contents.

   - **Activity:** The title of the planned high adventure activity.
   - **Date and Time:** Time and date of departure and return from the activity.
   - **Trek Goals and Objectives:** The Scouts who make up the crew should have a hand in determining the goals and objectives of the activity. Leaders can and should assist in defining these, but ultimately they should be determined by the youth.

   - **Location:**
      - **Environmental:** At the location of the activity, precautions concerning environmental conditions should be identified. In addition to the obvious weather and terrain conditions, consideration
should be given to animals and insects expected to be encountered. Bears, poisonous snakes, ticks, black flies, and mosquitoes are examples of creatures that can adversely impact a trek.

**Transportation:** This refers to how the crew will get to and from the location of the trek. It covers transportation to the trail head, and from the end of the trail to home. It includes filling in and submitting the applicable tour permit.

**Routes and Campsites:** This addresses what happens from the trail head to the end of the trail. It includes routes to be hiked or traveled via canoe, potential campsites, water sources, landmarks, and obstacles to be expected during the trek. It also includes a Time Control Plan, which provides time and distance estimates for each day, and terrain profiles which the crew will traverse. This is more than an exercise in map reading. The time and distance estimate is based upon crew travel at 2 miles per hour, with and hour added for each 1000’ increase in elevation, and ½ hour increase for each 1000’ decrease in elevation. The terrain profile provides a more refined understanding of your potential in the wilderness. It shows terrain elevations, water sources, trail intersections, and landmarks. It allows a check of progress against schedule and helps to anticipate problems.

**Permits:** Most state and national parks require permits for hiking and camping. Leaders need to identify any requirement for permits and arrange for obtaining them. In some places, like the Shenandoah National Park, crews fill out their own permits at various trail heads. This method provides crews with a copy of the regulations for the park, although they do not talk with park rangers.

**Participants:**

- **Number:** Self explanatory. Includes youth and leaders.

- **Characteristics:** Includes the age, capabilities and limitations of both boys and leaders. Capabilities and limitations should be identified at shakedowns before the high adventure activity.

- **Medical Examination:** BSA Class 3 physical are usually required for high adventure activities. Leaders should be aware of and prepared to deal with any potential medical problems listed on the physical forms. Leaders should also be aware of prescribed medications required for any of their crew members. In addition, the primary leader should ask parents to inform them of any potential medical or emotional problems that might arise during the trek. As this information could be embarrassing to a boy, it should be kept confidential and provided to only those leaders with a need to know.

- **Permission Slip:** Permission slips should contain pertinent information about the high adventure activity and be provided to parents sufficiently early in the planning stages to clear up questions the parents might have.

**Leaders:**

- **Number:** Self explanatory. Ensure that two-deep leadership and the Scout-to-leader ratio for the activity is always in force.

- **Qualifications:** Leaders should be trained and certified in CPR and first aid. A Wilderness First Aid course is far superior to standard Red Cross first aid training for high adventure activities. In addition, leaders should be skill-trained and qualified in the type activity being undertaken. This includes being in the physical condition required for the activity.

**Equipment:** Early during the planning phase of a high adventure activity both a personal and crew equipment list should be provided to all participants. Leaders should inspect all equipment to ensure its
suitability for the activity.

- **Personal Equipment**: Boots, socks, rain gear, and sleeping bags are at the top of the list of personal equipment for backpacking. Leaders must ensure that each participant’s gear is suitable and serviceable.

- **Crew Equipment**: Leaders must ensure that crew equipment is serviceable and required for the activity. Stoves and fuel containers, crew first aid kit, dining fly, bear bag and rope, and water purification capability are at the top of the list.

- **Emergency Phone Numbers**: The following phone numbers should be easily accessible to leaders.
  - Park or Forest Personnel
  - State or Local Police
  - Rescue Personnel
  - Nearest Hospital
  - Relatives of all crew members, boy and adult

- **Evacuation Plan**: Evacuation routes should be identified for each portion of the course of the trek. The routes should include locations where you will evacuate to, as well as the location of the nearest telephone. Evacuation procedures for crew members in different emergency situations should be thought out during planning.

8. **Summary**: Thorough and detailed planning before departure on any high adventure activity will greatly lessen the chance of accidents.
   - an injury that does not occur needs no treatment
   - an emergency that does not happen requires no response
   - an illness that does not develop demands no remedy

**Handout**
- Class Outline, Venturing/Varsity Program Safety

**References**
- The Backcountry Classroom, Drury and Bonney, ICS Books, Inc., 1992
- Guide to Safe Scouting
- Passport to High Adventure

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**OTHER PREPARATIONS AND REFERENCE RESOURCES:**

http://www.rockymountainrescue.org/index.php


http://macscouter.com/KeepWarm/wildprep.asp

http://www.flightforlifecolorado.org/