WINTER CAMPING TIPS

from

Shingebis Chapter

Nanepashemet Lodge No. 158, Order of the Arrow January 1998 Edition

Cold-Weather Camping

Cold-weather camping is any camping that takes place when the high temperature of the day is 50°F or below. Conditions can include cold, wet, and windy weather. Hypothermia and dehydration can be serious problems. Other potential problems include frostnip or frostbite, immersion foot and snow blindness.

Shingebis Chapter of Nanepashemet Lodge of the Order of the Arrow, under the leadership of Chief Michael LaPlante and Vice-Chief Todd Sutliff, presents these winter camping tips to help you achieve a successful, fun, and safe cold-weather camping experience. Additional information about cold-weather camping can be found in the Boy Scout leader video, *Winter Camping*, AV-010, the Venture handbook, *Snow Camping*, No.3440, and Boy Scout book *Okpik: Cold Weather Camping*, all of which are available from the Council Service Center in Haverhill or the Middlesex Scout Shop. Additional resources are available on the World Wide Web.

Contributions for this issue have come from the *Outdoor Action Guide to Winter Camping* by Rick Curtis (http://www.princeton.edu/~oa/wintercamp.html), *Winter Camping Manual* by Brian Tomaszewski (http://freenet.buffalo.edu/~bt393/winter.html) and MacScouter (http://www.macscouter.com/KeepWarm/).

Shingebis Chapter gratefully acknowledges the contributions of these individuals and groups to the benefit of our winter camping programs.

What is the Order of the Arrow?

The Order of the Arrow is a national brotherhood of honor campers. Its purpose is to recognize and honor those campers who best live up to the Scout Oath or Promise and the Scout Law in their daily lives and to guide them in expanding the service that has made them outstanding. The Order promotes Scout camping and maintains camping traditions and spirit. It emphasizes that the good Scout camper is not only skilled in Scoutcraft, but also true to the ideals of Scouting and its tradition of the daily good turn.

The only way that a Scout can become a member of the Order of the Arrow is to be elected for this honor by the members of his unit. To be eligible for election, a youth must fulfill the camping requirement and hold the First Class rank.

After being elected, the Scout must complete an Ordeal, which is a series of tests of his sincere dedication to the high ideals of Scouting and the Order. If he is faithful in performing the tests, he takes a solemn pledge of service and is admitted into the order. A long period of self-improvement and service then follows.

The lodge flap, universal arrow ribbon and the distinctive sash identify the Order of the Arrow member. They are symbols of service. Our lodge has its own activities and projects, but our program does not replace the member's responsibility to his unit. Indeed, each Arrowman is expected to give richer service to his own troop in return for the honor his unit extended to him.

Inside This Issue

Hypothermia, Causes Prevention and Treatment	2
Frostbite and Other Cold Related Injuries	3
Winter Clothing	4
Winter Campsite	5
Winter Camping Personal Equipment List	6
Trip Planning	7
Winter Water	7
Winter Food Notes	8

Shingebis Chapter congratulates North Essex District on attaining Quality District Status. Keep up the good work. We are all proud to be part of this Quality District.

Hypothermia

Causes

Hypothermia, sometimes referred to as "exposure", is a lowering of the body's core temperature caused by over-exposure to cool or cold air or water. Hypothermia generally occurs during cold weather, but it can occur at any temperature (but usually below 60°).

Three factors are major causal factors in hypothermia: cold, water, and wind.

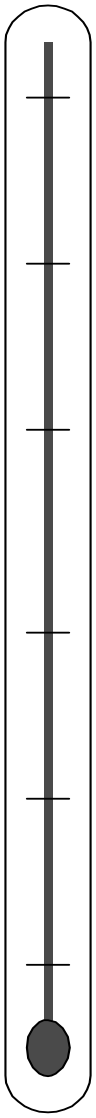
1) In a cold environment, the body must work harder to regulate heat; contact with cold air, water, snow, ground or clothing will cause heat losses due to conduction.

2) If a person is submersed in water, heat will be lost due to conduction and convection. At a water temperature of 32° death occurs in 15 minutes; at 70° survival for as long as 48 hours has been observed. Loss of heat by evaporation is a major contributor also. Wet skin or clothing will cool of the body quickly, especially if it is windy and/or cold.

3) Wind will cause heat loss due to convection, and will accelerate heat loss due to evaporation.

4) Hypothermia occurs much more quickly in the elderly and chronically ill.

Hypothermia is insidious. As the body's core temperature drops, more and more body systems suffer from the effects of cold. The presence and severity of hypothermia can be assessed by the signs and symptoms below. A patient is hypothermic at any temperature below 98.6°. 98° -94° is mild hypothermia; 94° - 84° degrees is moderate hypothermia, and below 84° is severe hypothermia.



Stages of Hypothermia

98° - 95° - Sensation of chilliness, skin numbness; minor impairment in muscular performance, especially in use of hands; shivering begins.

95° - 93° - More obvious lack of muscle coordination and weakness; slow stumbling pace; mild confusion and apathy. Skin pale and cold to touch.

93° - 90° - Gross lack of muscular coordination with frequent stumbling and falling and inability to use hands; mental sluggishness with slow thought and speech; retrograde amnesia.

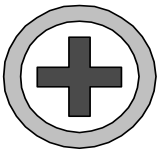
90° - 86° - Cessation of shivering; severe lack of muscular coordination with stiffness and inability to walk or stand; incoherence, confusion, irrationality.

86° - 82° - Severe muscular rigidity; patient barely arousable; dilatation of pupils; no apparent heartbeat nor pulse. Skin ice cold.

82° - 78° and below - Unconsciousness; death due to cessation of heart action.

Treatment

Two situations are possible. One is where evacuation to a medical facility is possible within several hours. The other is where evacuation will be delayed or impossible. The other parameter is stage of hypothermia.



Moderate Hypothermia

Get the patient as sheltered as possible (tent, snow cave, etc.)

Remove wet clothing and replace with dry clothing. Keep patient lying down. Place patient in a sleeping bag with a second rescuer of normal body temperature. Direct skin to skin contact is preferable.

Warm stones or bottles can also be placed in the bag (be careful not to burn patient). Make sure all extremities and exposed areas (e.g. face, nose, ears) are protected. If patient is conscious and able to swallow without danger to his/her airway, give sugar and sweet, warm (not hot) fluids by mouth. DO NOT GIVE ALCOHOL. If evacuation is IMPOSSIBLE and facilities permit, immerse patient in tub of water at 105 degrees Fahrenheit. Monitor patient's temperature rectally with thermometer if possible. Continue rewarming efforts until patient's core temperature is restored to normal. Always evacuate a hypothermic patient as quickly and gently as possible, including rewarmed patients.

Severe Hypothermia

Patients in severe hypothermia are

(Continued on page 3)

Prevention of Hypothermia

Dress properly for current and possible conditions. Be prepared for sudden weather changes especially at elevations. Have at least one wool garment for the upper and lower parts of your body. Wool is the only material with any insulating value when wet. Carry or wear a windproof, waterproof garment. Always have a wool hat and wool mittens. Have extra clothing available especially mittens and hats. A large proportion of body heat is lost through the head. When your feet are cold, put on a hat. Wear suitable boots, insulated if necessary; wear wool socks, and always carry extra wool socks. Avoid getting overheated and perspiring, this cools you down - fast. Wear layers and remove clothing as necessary. Better having extra than too little. Dress sensibly and expect the worst.

Sit out bad weather. Better waiting than be overtaken by a blizzard. Do not push on through the night. Make camp early and rest. You can continue tomorrow with a much greater safety margin.

Do not get exhausted. Exhaustion promotes heat loss, and thus hypothermia. Besides, if you're exhausted, you are probably drenched.

Do not get in over your head. If your experience is limited to day hikes on moderate trails, do not try to go out and tackle Mt. Washington in February. Be smart. Learn to use a map and compass. Learn fire-starting techniques. Learn first aid. Be calm. Be prepared. Lastly, learn about hypothermia. Know the causes, warning signs, and treatment. Learn how not to get cold.

"A large proportion of body heat is lost through the head. When your feet are cold, put

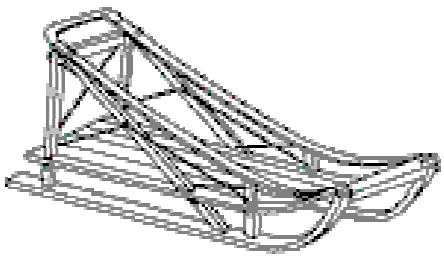
(Continued from page 2)
often erroneously thought to be dead. Neither pulse, nor heart sound, nor respiration may be apparent. Handle a severely hypothermic patient with great care - VERY GENTLE HANDLING.

Cut away wet clothing and replace

with dry clothing.

Maintain an airway, but use no adjuncts (e.g. oral airway). Once you start CPR, DON'T GIVE UP. Get help. Do not attempt to rewarm patient unless evacuation is IMPOSSIBLE. Keep patient supine (lying on his back), in a 10^{o} head-down tilt.

Handle every hypothermic patient very gently. Rough handling can cause cardiac arrest and death. Get every patient into shelter, replace wet clothes with dry ones. Apply external heat if condition dictates. And give warm, sugary food and drink if patient's condition allows. Get help. If possible, have rescuers bring a heated oxygen unit, and administer to patient. Keep calm and do not become a victim yourself.



Frostbite, and Other Cold-Related Injuries

Frostnip

Frostnip is the freezing of top layers of skin tissue. It is generally reversible The skin is white and waxy. The top layer feels hard and rubbery but deeper tissue is still soft Numbness is associated with frostnip. It is most typically seen on cheeks, earlobes, fingers, and toes.

To treat for frostnip, rewarm the area gently, generally by blowing warm air on it or placing the area against a warm body part (partner's stomach or armpit). Do not rub the area - this can damage the effected tissue by having ice crystals tear the cell.

Frostbite

The skin is white and has a "wooden" feel all the way through. Superficial frostbite includes all layers of skin. Deep frostbite can include freezing of muscle and/or bone. It is difficult to rewarm the appendage without some damage occurring .

Superficial frostbite may be rewarmed as frostnip if only a small area is involved. If deep frostbite occurs, a specific rewarming technique should be used. Rewarming is accomplished by immersion of the effected part into a water bath of 105^{o} F - 110^{o} F. No hotter or additional damage will result. This is the temperature that is warm to your skin. Monitor the temperature carefully with a thermometer. Remove constricting clothing. Place the appendage in the water and continue to monitor the water temperature. This temperature will drop so that additional warm water will need to be added to maintain the 105^{o} F - 110^{o} F. Do not add this warm water directly to the injury. The water will need to be circulated fairly constantly to maintain even temperature. The effected appendage should be immersed for 25 - 40 minutes. Thawing is complete when the part is pliable and color and sensation has returned. Once the area is rewarmed, there can be significant pain. Discontinue the warm water bath when thawing is complete. Do not use dry heat to rewarm. It cannot be effectively maintained at 105^{o} F - 110^{o} F and can cause burns further damaging the tissues. Once rewarming is complete the injured area should be wrapped in sterile gauze and protected from movement and further cold. Once a body part has been rewarmed it cannot be used for anything. Also it is essential that the part can be kept from refreezing. Refreezing after rewarming causes extensive tissue damage and may result in loss of tissue. If you cannot guarantee that the tissue will stay warm, do not rewarm it. Mountaineers have walked out on frozen feet to have them rewarmed after getting out with no tissue loss. Once the tissue is frozen the major harm has been done. Keeping it frozen will not cause significant additional damage.

"Rewarming is accomplished by immersion of the effected part into a water bath of 105^{o} F-110^{o} F. No hotter or additional damage will result."

Special Considerations for Frostbite

If the person is hypothermic and frostbitten, the first concern is core rewarming. Do not rewarm the frostbitten areas until the core temp approaches 96^{o} F. Do not permit any alcohol - vasodilation may increase fluid buildup. Do not permit smoking - nicotine as a vasoconstrictor may increase chances for developing frostbite.

Liquids such as white gas can "supercool" in the winter (drop below their freezing point but not freeze). White gas also evaporates quickly into the air. Spilling supercooled white gas on exposed skin leads to instant frostbite from evaporative cooling. Always wear gloves when handling fuel.

Touching metal with bare skin can cause the moisture on your skin to freeze to the metal. (In really cold conditions, metal glasses frames can be a problem). When you pull away, you may leave a layer of skin behind. Don't touch metal with bare skin.

Avoiding Frostbite and Cold related Injuries

Follow the tips for prevention of hypothermia, described in the previous article. Especially follow the tips for dressing properly for the weather. Use a "buddy system" - keep a regular watch on each other's faces, cheeks, ears for signs of frostnip/frostbite. Keep a regular "self

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Winter Clothing

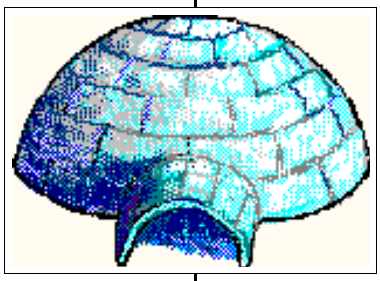
Cold weather conditions make the proper choice and use of clothing more vital than at other times of the year. As you prepare your cold weather clothing, keep warm by following the guidelines that spell the word COLD.

C - Clean Since insulation is effective when heat is trapped by dead air spaces, keep your insulating layers clean and fluffy. Dirt, grime, and perspiration can mat down those air spaces and reduce the warmth of a garment.

O - Overheating: Avoid overheating by adjusting your layers of clothing to meet the outside temperature and exertions of your activities. Excessive sweating can dampen your clothing and cause chilling later on.

L - Loose Layers A steady flow of warm blood is essential to keep all parts of your body heated. Wear several loosely fitting layers of clothing and footgear that will allow maximum insulation without impeding your circulation.

D - Dry Damp clothing and skin can cause your body to cool quickly, possibly leading to frostbite or hypothermia. Keep dry by avoiding cotton clothing that absorbs moisture, brushing snow from your cloths before it melts, and loosening the clothing around your neck and chest. Since body heat can drive perspiration through many layers of breathable cloth and force it out into the air, don't wear waterproof clothes.



Wool clothing is ideal in cold weather because it is durable and water resistant, and even when soaked it can keep you warm. Wool makes excellent blankets, socks, hats, mittens, sweaters, and even pants. Army surplus stores have good wool clothing for winter camping. If wool irritates your skin, you may be able to wear wool blends or wear it over clothing made of other fabrics. Many synthetics are also good in winter for use as windbreakers and insulation.

Remember that winter camping is not a fashion show. Whatever combination of clothing it takes to keep you warm should be worn, regardless of how it looks.

The best method of wearing clothing in the winter is to use the layering system. Choose loose fitting clothing in as many layers as you can. The layers can be taken off or put on, depending on your activity level, temperature, wind, and precipitation. 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 system in many more ways than will a single heavy coat.

Footwear is important in winter camping as your feet are subject to more exposure to moisture especially if it's not too cold out and snow is melting. At least two pair of socks are recommended as long as they aren't too tight. Wool or a wool blend is best. One method that can be used in wet conditions is to put plastic bags on your feet, either between the two layers of socks or directly on your feet. NEVER wear cotton socks under plastic bags as they will get wet from your perspiration and your feet will feel cold. Thin synthetic socks under the plastic bags with heavy wool socks over them is best. Whatever winter boots you have should be adequate plus an extra pair of boots, good sneakers or mukluks should be brought.

Mittens that allow your fingers to be in direct contact with one another can keep your hands warmer than gloves that isolate each finger. A good pair of gloves are a must however for many tasks around camp that would be too cumbersome with mittens. Extra gloves and/or mittens are a must as gloves and mittens tend to get very wet.

Stocking hats are great for wear outdoors and at night in your sleeping bag. Even better is a stocking hat long enough to cover your head and neck, and all of your face except your eyes. A coat with a hood is also helpful, as is a scarf around your neck that can be used to cover your face if needed.

The best way to pack clothing for a winter camp out is not to just follow a list of clothing, but to actually put on what you will wear to be sure your layering system

(Continued on page 8)

Layering System

Layering keeps you comfortable in temperatures spanning more than 100 degrees. Layering offers versatility and economy. One set of gear serves four seasons' use. Just shed or add layers to accommodate the weather conditions and your activity level.

WICKING

In the old days, cotton long johns or woolies helped keep you warm. But the new synthetic thermal wear perform a second, more important job - they help keep you dry by wicking perspired moisture away from your skin towards the outside where it can escape. When you're active in brisk weather, that's critical because damp skin loses heat 25 times faster than dry skin.

WARMTH

Next comes the warmth layer - garments with insulating thickness or loft that capture body-warmed air. Traditional options, like wool or down, hold heat but tend to trap perspired moisture (which can amount to a pint an hour during vigorous activity). Today's alternative garments are made of synthetic fleece, whose fibers insulate well but will absorb almost no moisture.

WIND

For your wind layer - both pants and top - choose a shell garment that's windproof and water repellent but also highly breathable to let perspired moisture escape.

Winter Campsite

Factors to keep in mind when choosing a winter camp include:

- Camping regulations
- Other campers
- Wind (avoid ridge tops and open areas where wind can blow down tents or create drifts)
- "Widow Makers", (dead branches hanging in trees)
- Low lying areas where the coldest air will settle.
- Avalanche danger (select sites that do not pose any risk from avalanches)
- Exposure (south facing areas will give longer days and more direct sunlight)
- Water availability (lakes or streams will prevent you having to melt snow for all your water)
- Level ground

MINIMAL IMPACT CAMPING IN WINTER

Winter generally provides a blanket of snow which protects underlying soil and vegetation, the major concerns for minimizing impact. However, when thin snow cover is compressed and compacted in early or late season, snowmelt can be delayed, shortening the growing season. Also, early and late winter trips can run into melting conditions, where top layers of soil melted by the sun lie overtop frozen ground. Erosion, and destruction of plant life is extremely likely at these times, and winter travel is best avoided. Otherwise travel in small groups and visit either remote places where your disturbances won't be compounded by others following you (allowing for recovery) or high impact areas that have already been disturbed. Special considerations exist for high altitude and glacier conditions.

Setting up Camp

OUTDOOR CODE

As an American, I will do my best to

Be clean in my outdoor manners

Be careful with fire

Be considerate in the outdoors, and

Be conservation minded

When you first get into camp, leave your snowshoes or skis on and begin to tramp down areas for tents and your kitchen. If possible, let the snow set up for 30 minutes or so, this will minimize post-holing once you take snowshoes or skis off.

Tips for Tents

Make sure you bring extra poles with you and pole splints in case a pole breaks. A ground sheet (like a space blanket or tarp) can help protect your tent floor (the ground underneath usually turns to ice from your weight and body heat. Sharp ice can tear the floor).

Always stake you tent down if you are going to be in windy areas or leaving your tents during day excursions. Bring stakes or know how to stake using "dead men."

A wisk broom is an important addition to every tent. You should brush all the snow off your clothes and boots before getting into the tent at night. This helps reduce condensation and water buildup in the tent keeping you and your belongings dryer. Also when snow gets into the tent at night it often melts from your body temperature, then freezes during the day when you are not in the tent.

Do not cook in a tent. It is possible to asphyxiate yourself from accumulated carbon monoxide and the water vapor leads to extensive condensation.

Set up your tents with the doors at 90 degrees to the prevailing winds. Stake the tents out. On a cold night you can build snow walls on the windward side of the tent. Mound the sides of the tent with snow (have someone inside pushing out

(Continued on page 8)

Time For Bed

When it's time for bed, here's what to do:

1. Get warm before you get into your bag. Do some jumping jacks, etc. so your heat is built up for when you get in your bag.
2. Get any clothing/gear you will need out of your pack as well as full water bottles and tomorrow's lunch.
3. At the tent door, brush off any snow with the wisk broom. Sit down inside the tent entrance and, keeping your boots outside, either have a friend brush them off, or remove them and brush them yourself.
4. Climb into the tent and close the door.
5. Strip off your layers of clothing to what will be appropriate in your sleeping bag. The more layers you wear the better insulated and the warmer you will be (contrary to the myth that says sleep in your underwear). However, too much clothing can compress dead air space in the bag and reduce its effectiveness.
6. Remove any wet/damp layers and replace them with dry ones, particularly socks.
7. Pre-warm your bag with your body (get it nice and toasty).
8. Place damp items in the sleeping bag with you near your trunk. This will help dry them overnight.
9. Place your boots in your sleeping bag stuff sack (turned inside out) and place the stuff sack between your legs. This will keep them from freezing during the night and the stuff sack keeps your legs from getting wet.
10. Put water bottles and food with you in the bag.
11. A hat and polarguard booties are recommended to help keep you warm.
12. Try to sleep with your face out of the bag. This reduces moisture build-up inside the bag (which could be catastrophic for a down bag). A scarf on your neck may be better than using the sleeping bag neck drawcord (which makes some people feel a little claustrophobic and creates a difficult night's sleep).
13. You will probably wake up a number of times during the night. This is normal in cold weather. Your body needs to change position to allow for circulation to compressed tissues and to move around a bit so that muscle movement generates more heat. If you are still cold, eat some protein to "stoke up your furnace" If that doesn't work, wake a tent-mate for some extra warmth.
14. With 10 or more hours in the tent, you are likely to need to urinate in the middle of the night. Go for it! Otherwise you won't get back to sleep, and your body is wasting energy keep all that extra fluid warm. You will be surprised how quickly you can get out and back in and your body really won't chill that much.
15. It is useful to have a thermos of hot drink in each tent.

Winter Camping Personal Equipment List

Head:
_____ Wool/Pile Balaclava
_____ Face Mask
_____ Goggles with side screens

Upper Body:
_____ 2 Long Undershirts - polypropylene
_____ Vapor Barrier Shirt (optional)
_____ Wool/Polypropylene/Pile Shirt
_____ Wool/Pile Sweater or Jacket
_____ Wind Jacket with Hood
_____ Winter Parka with Hood

Hands:
_____ Glove Liners - synthetic, polypropylene
_____ Wool Gloves
_____ Wool/Synthetic/Pile Mittens

Lower Body:
_____ Underwear
_____ Long Underwear - polypropylene
_____ Vapor Barrier Pants (optional)
_____ Wool/Pile Pants/bibs
_____ Wind Pants - nylon
_____ Overpants - insulated

Feet:
_____ Liner Socks - polypropylene - 2+ pairs
_____ Vapor Barrier Socks
_____ Wool/Pile Socks (heavy) - 4+ pairs
_____ Mountaineering double boots
_____ Gaiters - coated nylon
_____ Polarguard/Down Booties
_____ Camp Overboots
_____ Cross-Country Ski Boots (if skiing)
_____ Ski Overboots (if skiing)

Raingear:
_____ Rain Jacket
_____ Rain Pants

Pack & Packing:
_____ Large External Frame Pack
_____ Stuff Sacks of all sizes
_____ Pack Raincover

Travel Equipment:
_____ Snowshoes with binding & crampons
_____ Ski poles - 1 pair
_____ Ice Axe
_____ Skis and boots (if skiing)

Sleeping Gear:
_____ Synthetic/Down Sleeping Bag (-15^{o})
_____ Foam Pad

Eating Utensils:
_____ Plastic Cup - double walled
_____ Plastic Spoon
_____ Water Bottles

Food (individual):
_____ 1/4 - 1/2 pound meat & cheese per day
_____ 1/2 - 3/4 pound gorp per day

Miscellaneous:
_____ Day Pack
_____ Flashlight - headlamp best
_____ Knife
_____ Whistle
_____ Compass
_____ Matches or Firestarter
_____ Belt or suspenders
_____ Bandanas - the ultimate useful item
_____ Extra Glasses, Sunglasses
_____ Sunscreen
_____ Chapstick
_____ Toilet Articles
_____ Any Medications needed during trip
_____ Camera, film, books, games,
_____ Paper & pen, etc. (optional)
_____ Cough drops or sour balls

Additions to standard trip Group Equipment List

SHELTER:
_____ Winter tent with fly
_____ Snowstakes for each tent
_____ Wisk broom
_____ Thermos (metal)
_____ Spare tent poles

COOKING:
_____ Stoves
_____ Fiberboard with stove platform
_____ Nesting pots with lids
_____ Pot grippers
_____ Fuel bottles with Fuel
_____ Funnel
_____ Plastic cooking spoons, other utensils
_____ Dip Cup
_____ Waterproof matches
_____ Scrubbies
_____ Garbage Bags

REPAIR:
_____ Pliers
_____ Visegrips
_____ Screwdrivers - regular, phillips
_____ Ripstop & Duct tape
_____ Sewing awl and heavy thread
_____ Regular needles and thread
_____ Hose clamps - 4
_____ Parachute cord - many yards
_____ File
_____ 1/4" waterproof rope - 100 ft.
_____ Extra snowshoe binding
_____ Neoprene straps
_____ Wire
_____ Epoxy glue (low temperature)
_____ Pack repair parts
_____ Stove repair parts
_____ Pole patch kits - 2 (ski or tent)
_____ Spare bails for XC bindings (if skiing)

FIRST AID KIT: (ADDED TO STANDARD FIRST AID KIT LIST)
_____ Throat lozenges
_____ Antacid tablets
_____ Heavy space blankets - 1
_____ Heat packs
_____ Hypothermia thermometer

MISCELLANEOUS:
_____ Snow shovels - 2 - packable
_____ Ice hammer (1-2)
_____ Goretex bivy sack
_____ Spare ski pole
_____ Lots of parachute cord
_____ Thermometer
_____ Altimeter/barometer
_____ Signal mirror
_____ Extra sleeping bag straps
_____ Oil lantern - 1/tent, oil
_____ Candles
_____ Extra batteries/bulbs for headlamps
_____ Toilet paper & lots of ziplocks
_____ Alarm clock
_____ Extra spoon
_____ Extra garbage bags
_____ Guide book(s) & Maps
_____ Snowsaw - inside snow shovel
_____ Throw bags with 1/4" polypropylene rope (for ice rescue, snow belays)

Notes:

- Contact lenses can be a problem!
- Zipper pulls on all clothing and pack zippers.
- All clothing must be clean.
- Idiot strings on all mitts/shells.
- Nonfreezing laces on all boots.
- Defog all glasses and goggles.
- Develop method for hanging water bottles on body.
- Adjust and mark boots, snowshoes and skis before leaving.
- Figure out how you carry snowshoes or skis on your pack if the need arises.

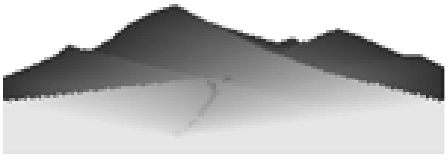
- Figure out clothing arrangements: How will

Trip Planning

Winter camping is an advanced and challenging adventure. The winter camper has a respect for nature that the summer camper will never have. But as with most things in life, the most rewarding experience is the one that takes the most effort. If it were easy, then the personal reward and satisfaction that a winter camp out gives would not be the same. A Boy Scout has a unique opportunity to experience this first hand. Most adults never get the chance to go on summer camp outs, let alone winter camp outs. For those people, it's hard to explain the feeling of lying in your tent on a cold winter night, with only the sound of the wind howling outside. It is a feeling of solitude, peace and great respect for nature that will be a memory to treasure. We hope that each Scout tries winter camping and will have the opportunity to take his own "photograph" that he alone will be able to view. It will hopefully give him a new outlook that will enrich his life.

Planning a trip in the winter means spending a good deal of time researching areas and conditions to determine where, when, and how the trip will work. Many factors will interact to determine what your daily pace and mileage can be. These include the route (on or off of a trail), snow level (shallow or deep), snow quality (powder, packed, breakable crust, or variable), trail (breaking trail or on a broken trail), mode of travel (hiking, snowshoeing, or skiing), elevation changes, strength and experience of group, and group size.

Keeping all these factors in mind, set up a plan for your trip. Remember that everything takes "twice" as long in the winter (setting up camp, breaking camp, cooking, going to the bathroom, etc.). Look at your proposed route for potential campsites for each day. Also look to see where you could camp before your planned site if you can't make it. Know what your emergency and bail out options are if conditions deteriorate or you have problems. Talk to area rangers about permits and camping restrictions. Find out about snow levels, avalanche danger, safety of ice crossings, etc.



Winter Water

Do not eat snow! It takes an incredible amount of energy to transfer water from one state to another (solid to liquid). You are burning up too many calories to do this, which can quickly lead to hypothermia.

Getting Water - Water may be obtained by digging a hole in frozen lakes or streams where there is running water beneath the ice. Be careful about falling in. Sometimes filling pots and water bottles from a stream or lake is a major expedition in itself. Make sure that the area you plan to get water from is secure. Avoid steep banks that might lead to a plunge and make sure any ice is sufficiently stable to hold your weight. Also make sure you don't get your mittens soaked with icy water. A loop of string tied tightly around the water bottle neck will allow you to lower a bottle in by hand or with a ski pole or ice axe. Don't trust pot grips on a large pot, with mittens you can lose your grip and your pot. Fill the pot up part way and then use a water bottle to top it off. Mark the area so you can find it next time. Remember, in most cases water will need to be purified from giardia and other bacteriological contaminants.

Snow can be melted on a fire or stove to make water. It should be clean snow, no yellow (urine) or pink (bacterial growth). Because it takes so much energy to convert from one state to another you should have some water in the bottom of your container. Heat this water up and add snow to it slowly so it turns to slush and then water. This is much more efficient. If you dump in straight snow, you will only burn the bottom of your container and not make any water. By volume it takes about 10 quarts of snow to make 1 qt of water.

Winter Solar Water Collector - In a spot that will remain sunny for several hours, dig out a depression in the snow about 2 feet across and 1 foot deep. If possible, line this depression with a foam pad or other insulation (not essential but it speeds the process). Then spread a dark plastic bag (trashbag) over the depression forming a shallow dish pan. All over the raised margins pack clean snow. Drawn by the dark plastic the sun's energy will melt the snow and water will collect in the depression.

Water in a pot can be stored overnight by placing the pot lid on and burying the pot under a foot of snow. Snow is such a good insulator that it will keep the water from completely freezing even in sub-zero temperatures.

Personal Water - You should have a water bottle with a wide mouth, otherwise the opening will easily freeze up. During the day you should carry at least one bottle next to your body (usually with a shoulder strap arrangement). Your body heat will keep it from freezing and the bottle is handy to rehydrate yourself throughout the day. Insulated water bottle holders are available for this. Other bottles can be kept upside down in an insulated container (sock etc.) preferably in an outside pocket on your pack. Being upside down will keep the mouth of the bottle from freezing. Keep in mind that the lid must be on tightly or water will leak all over the place. A cold water bottle may have ice crystals in the threads. As the bottle heats up from body temperature the ice may melt causing the cap to loosen also the lid may expand with heat causing leakage. At night keep your water bottles in your sleeping bag to prevent them from freezing.

Water purification - Keep in mind that water gotten from streams in the winter time may have bacteriological or other contaminants. You should check with local rangers about any water problems before going in. If the water does need to be purified, the best method during the winter is boiling.

Don't Just Stand There

Standing all day long is uncomfortable, but sitting on snow just gets your highly vascular (big muscle) bottom wet, making you cold in a hurry. Rock may be dry, but it sucks heat even faster. Buy the cheapest closed-cell foam pad that you can find, and cut it into 2 by 2 foot squares. Everybody carries a square on the outside of the pack, so they can flop down anywhere and sit dry and insulated during breaks on the trail. "Don't leave home without it."

Frostbite, and Other Cold-Related Injuries

(Continued from page 3)

check" for cold areas, wet feet, numbness or anesthesia. If at any time you discover a cold injury, stop and rewarm the area (unless doing so places you at greater risk).

Eye Injuries
Freezing of Cornea can be caused by forcing the eyes open during strong winds without goggles. Treatment is very controlled, rapid rewarming e.g. placing a warm hand or compress over the closed eye. After rewarming, the eyes must be completely covered with patches for 24 - 48 hours. If eyelashes freeze together, put a hand over eye until ice melts, then open the eye.

Snowblindness
Snowblindness is sunburn of the eyes. It can be prevented by wearing good sunglasses with side shields or goggles. Eye protection from sun is just as necessary on cloudy or overcast days as it is in full sunlight when you are on snow. Snow blindness can even occur during a snow storm if the cloud cover is thin. The symptoms of snowblindness occur 8-12 hours after exposure. Eyes feel dry and irritated, then feel as if they are full of sand. Moving or blinking becomes extremely painful. Exposure to light hurts the eyes. Eyelids may swell; eye redness, and excessive tearing may occur.
Treatment for snowblindness includes the application of cold compresses and a dark environment. Do not rub eyes.

Winter Clothing

(Continued from page 4)

fits and is functional. To see if your system will keep you warm, go outside and sit in the yard or go to the park and sit for a couple hours (You may even be able to do some requirements for one of the nature related merit badges while you wait). Sitting still is the best way to test your system as this is when your body does not produce much of it's own heat. If you can stay warm sitting around, then you will have no problem staying warm moving around at camp. To be sure you have enough extra clothes, try to pack at least another complete system just in case your system gets too wet to be used.

Winter Campsite

(Continued from page 5)

on the tent to keep it from collapsing). When the snow sets up you will have a hybrid tent-snow shelter which will have better insulation than the tent alone. Dig out a pit in front of your tent for a porch. This makes taking your boots off much easier. Put your foam pads in the tent and unstuff your sleeping bag and place it in the tent so it can "expand" from its stuffed size.

If the snow is deep, you may want to dig out a pit for your kitchen. Dig a pit at least 6 feet in diameter (for 4-6 people). You can mark out the circle using a ski or a rope. Dig down about 2-3 feet and pile the excavated snow around the perimeter. Pack the snow at the perimeter of the hole with your shovel. This will give you a 4-5 foot deep area, protected from the wind. You can carve out seats and benches, put your skis or snow shoes behind the pile as backrests, carve places for stoves, etc.

After dinner, get warm water for water bottles, and put gear away.

Winter Food Notes

Cooking time in the winter is greatly increased and, therefore, fuel consumption is also increased.

Individual food such as snacks and things may be brought to winter campouts, however like all campouts, they should be stored in the patrol kitchen or bear bag. Scouts should not bring food in their packs or into their tents.

As you burn more fat and calories to keep you warm in a winter campout, attention should be given meals. Foods high in fat, complex carbohydrates and protein release their energy slowly, keeping you warmer. Sugar and starch burn too quickly to keep you warm hour after hour. Good foods to eat would be beef, poultry, fish, eggs, corn, beans, whole-wheat bread, peanut butter, macaroni and cheese, vegetables and fruits, butter, nuts, cheese, salami, and bacon. Some of these would make excellent snacks for the campout. Avoid sweets.

One important note is that water is very important during a winter campout. Dehydration makes you cold and could lead to hypothermia. Because the air is so dry in the winter, your body looses heat a lot faster.