

# Cold Weather Camping Seminar

2009



Cradle of Liberty Council  
Boy Scouts of America  
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Wayne, PA 19087



Dear Scouter:

This booklet, offered as part of Cradle of Liberty Council's Cold Weather Camping Seminar, is not to be considered the "final authority" on winter camping. Actually, there probably can never be such a publication, since new equipment, new techniques, and new ideas will continue to appear and be useful in winter camping. However, certain basic facts about cold weather and its effect on the human body will not change. You will learn about these facts as they are repeated again and again in the information in this pamphlet and in the presentations at the seminar.

For further information refer to #34040 "Okpik: Cold-Weather Camping", Venture Program Book #33440 "Snow Camping", "Boy Scout Troop Program Features, Vol 1, 2 and 3", and #34416D "Guide to Safe Scouting". All these are available from the Scout Shop.

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# Guide to Safe Scouting

## XIII - Winter Activities

### Winter Camping Safety

There is magic to camping in winter. It is one of the most advanced and challenging of outdoor adventures. Special considerations for winter camping include the following:

#### 1. Leadership.

In no other camp is the type of leadership as important as in the winter camp. It is vital that a leader be an experienced camper with a strong character.

#### 2. Equipment.

Do not attempt to camp unless completely outfitted. Even if equipment for winter camp is more expensive than for summer camp, Scouts must be adequately clothed, and leaders should ensure that blankets and other equipment are of suitable quality and weight.

#### 3. Physical Condition.

A physician's certificate as to physical ability must be obtained by each Scout before preliminary training begins.

#### *Tips for your next winter camping trip:*

1. Use the buddy system for winter outings. Buddies can check each other for frostbite, make sure no one becomes lost, and boost the morale of the entire group.
2. Always allow ample time to make camp in winter, especially if you plan to build snow shelters.
3. Fatigue encourages accidents. Rest occasionally when building a snow shelter; taking part in cross-country skiing or snowshoeing; or participating in other active winter sports. Periodic rests also help avoid overheating.
4. Pulling a load over the snow on a sled or toboggan is generally easier than carrying it in a backpack.
5. Snow is a terrific insulator. Snow shelters are much warmer than tents because they retain heat and keep out the cold wind. If you have adequate time for building snow shelters, you will spend a much more comfortable night sleeping in them than in a tent.
6. Small liquid-fuel stoves are much better for cooking in winter than fires, which are difficult to build with wet wood. Gathering wood that is frozen to the ground also can be difficult, if not impossible. A pressure/pump-type stove is essential in winter.
7. Always use a funnel to refuel a stove so you won't frostbite your fingers by accidentally pouring fuel on them. Fuel evaporates at a high rate of speed and quickly removes heat from anything it touches.
8. Place a stove or fire on a platform of logs or rocks so it will not melt through the snow.

9. Never light or use a stove inside a tent or snow shelter. A tent may catch fire, and vapors in a snow shelter may lead to carbon monoxide poisoning. Neither of these potential mishaps is worth the risk.
10. A windscreen is essential for using a stove in the winter. Even a slight breeze will direct the heat away from its intended mark.

References: *Okpik: Cold Weather Camping, Boy Scout Handbook, Scoutmaster Handbook, and Camping Sparklers*

Be sure your winter outdoor activity always follows these guidelines:

1. All winter activities must be supervised by mature and conscientious adults (at least one of whom must be age 21 or older) who understand and knowingly accept responsibility for the well-being and safety of the youth in their care, who are experienced and qualified in the particular skills and equipment involved in the activity, and who are committed to compliance with the seven points of BSA Winter Sports Safety. Direct supervision should be maintained at all times by two or more adults when Scouts are "in the field." The appropriate number of supervisors will increase depending on the number of participants, the type of activity, and environmental conditions.
2. Suitable clothing for the activity and environment should be worn at all times, and equipment should include gloves and helmets when appropriate.
3. Winter sports activities often place greater demands on a participant's cardiopulmonary system, and people with underlying medical conditions (especially if the heart or lungs are involved) should not participate without medical consultation and direction. For participants without underlying medical conditions, the annual health history and physical examination by a licensed health-care practitioner every three years are sufficient. The adult leader should be familiar with the physical circumstances of each youth participant and make appropriate adjustments in the activity or protection as warranted by individual health or physical conditions. Adults participating in strenuous outdoor winter activity should have an annual physical examination. It is recommended that the medical assessment be performed by a licensed health-care practitioner knowledgeable of the sport and the particular physical demands the activity will place on the individual.
4. All participants should know, understand, and respect the rules and procedures for safe winter activity. The applicable rules should be presented and learned before the outing, and all participants should review them just before the activity begins. When Scouts know and understand the reasons 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.

## Cold Weather Basics

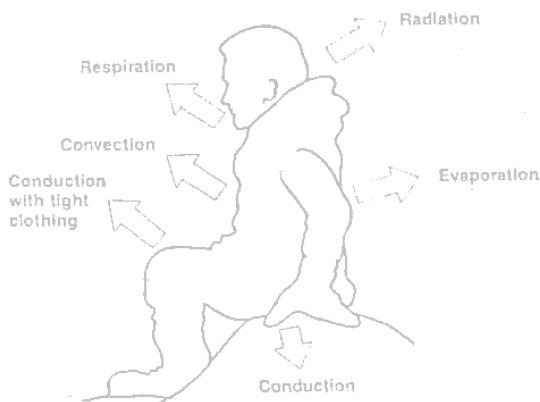
### HOW HEAT IS TRANSFERRED

**RADIATION** – a leading cause of heat loss in almost any situation. The head is the most efficient part of the body's radiator system. So rapid is the radiation from the head in a cold situation that heat loss from an unprotected, uncovered head can be enormous. An unprotected head may lose up to one-half of the body's total heat production at 40°F (4°C), and up to three-quarters of total body heat production at 5°F (-15°C).

**CONDUCTION** – Ordinarily, only small amounts of body heat are lost by conduction. But winter campers tend to lose body heat this way more than others do because they often carry metal tools such as a saw, axe, or shovel, and they often rest by sitting on ice, snow, or a cold rock. Climbing ungloved over cold rocks is another mechanism of heat loss through conduction. Conduction of heat from skin to metal is so rapid it can produce an actual cementing of skin to metal, instantly freezing the skin's surface moisture to the metal, with subsequent frostbite or loss of skin.

Wearing thin silk or cotton gloves when handling metal (axe, saw, camera, stove, shovel) protects against this freezing hazard. Handling gasoline or other liquid fuels at low temperatures is especially dangerous. Gasoline stored in a metal canister outside of the tent during a storm will cool

to the lowest temperature attained during the storm. Even covered with an insulating blanket of snow, it cannot rewarm so when it is uncovered, its temperature may be as low as -20° to -40°F (-29°C to -40° C). Spilling such supercooled fluids on your hands will cause instant frostbite. This happens not only from the conduction of heat by cold liquid, but also by the further cooling effect of rapid evaporation of the liquid as it hits the skin. Many cases of severe frostbite occur in this manner.



Types of Body Heat Loss

continuously warms a thin layer of air next to the skin to a temperature nearly equal to that of the skin. If this warm-air layer is retained close to the body by clothing, you remain warm. However, if this warm layer of air is constantly being removed by a brisk wind (convection), you feel cool and have to put on more clothing. In short, the primary function of clothing is to retain a layer of warm air close to your body. In conditions of severe cold and wind, you need garments of high wind resistance and insulating qualities.

**EVAPORATION** – The evaporation of sweat from the skin accounts for a substantial loss of body heat. There is very little you can do to prevent this loss. In fact, those in the outdoors are well advised to help the process of evaporation by wearing fabrics that "breathe". If water vapor cannot pass freely through your clothing, it condenses and freezes.

**RESPIRATION** – Inhaling cool air and exhaling warm air accounts for a significant amount of heat loss. This is especially true at high altitudes, at low temperatures, and during heavy exertion. There is little you can do to prevent or conserve this type of heat loss. Your breath helps to warm a tent or snow cave, if you have one, but that's about the extent of its thermal value.

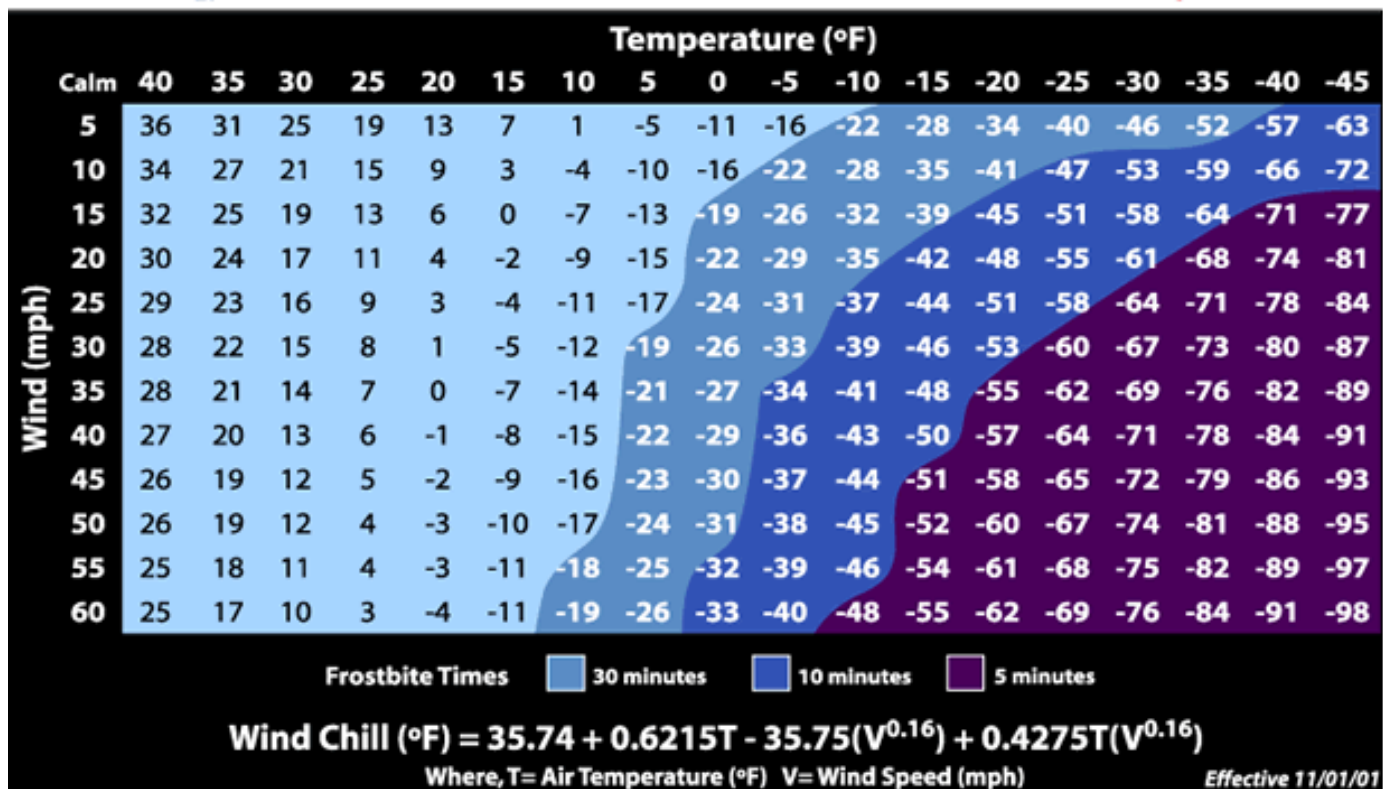
## HOW WEATHER AFFECTS HEAT LOSS

**WIND CHILL** – If there were no breeze at all you could remain lightly clad and comfortable at 0° F for long periods of time. But let the air stir even slightly, and the calories or heat energy produced by your body will rapidly leave.

**WATER CHILL** – The thermal conductivity of water (or ice) is 20 times as great as that of still air. This means that wet clothing can extract heat from your body much faster than clean dry clothing. When your clothing gets wet, it no longer provides an insulating layer of warm air next to the skin. Instead, it rapidly conducts heat away from your body and dissipates it into the environment. Wet clothing is like a wick. If a cold wind is blowing, or if you are not generating extra heat by strong exertion, this "wicking action" or "water chill" dissipates heat much more rapidly than your body can produce it. It is worth noting that the wicking action of wet wool is considerably less than that of other fabrics. Wool provides some warmth even when damp.



# NWS Windchill Chart



## **TYPES OF COLD**

There are basically three types of cold: wet, dry, and Arctic-like. Each type of cold requires different clothing considerations. Know the type of cold you will encounter and prepare accordingly.

Wet-Cold – this is the most dangerous type of cold and it is the type of cold in which most winter camping is done. Wet-cold temperatures range from 50°F (10°C) to 14°F (-10°C). Wet-cold can occur with or without snow. During wet-cold conditions, temperature differences between the warmest time of the day and the coldest period at night may be as great as 30° or 40°F. The coldest temperature usually occurs about 1 hour before dawn, unless there is a strong frontal system affecting the weather. This wide temperature fluctuation causes melting during the day and a hard freeze at night. The cycle of freezing and thawing, often accompanied by rain or wet snow, causes the ground to become muddy or even slushy. Wet-cold clothing is designed to cope with these conditions.

Dry-Cold – temperatures vary from 14°F (-10°C) to -20°F (-29°C). Dry cold is usually associated with snow conditions. During dry-cold conditions, the ground is usually frozen and the snow cover is relatively dry – in the form of small crystals. Strong winds cause the low temperatures to seem colder and increase the need for protecting the entire body. Dry-cold clothing is the same as for wet-cold conditions except that more insulating layers are added, and the rain protection needed in wet-cold conditions can be replaced by windproof outer clothing that is water repellent.

Arctic-Like Cold – with temperatures below -20°F (-29° C). Rarely, if ever, would you encounter temperatures this low without snow. Arctic-like cold requires the most insulation, especially when you are not active. During times of Arctic-like cold, many thermally formed materials (metals, plastics, etc.) change their physical properties, becoming brittle; they may break or shatter. Camping comfortably at these temperatures takes a great deal of experience. The correct layering of clothing is essential. The outer layer should be a windproof barrier that covers most of the body.

## HEALTH & SAFETY DURING COLD WEATHER ACTIVITIES

### ***Dehydration***

Excessive loss of body water. Impairs the ability to reason, so the victim may not react properly.

#### **Prevention:**

- Drink at least 2 quarts of water a day.
- Avoid dehydrating foods (high protein) and fluids (coffee, caffeine).
- Increase fluid intake at first signs of darker yellow urine.

#### **Symptoms:**

##### **1 to 5 % deficiency**

- Increased pulse rate
- Nausea and loss of appetite
- Dark urine or constipation
- Irritability, fatigue
- Thirst

##### **6 to 10 % deficiency**

- Headache, dizziness
- Labored breathing
- Tingling
- Absence of salivation
- Inability to walk
- Cyanosis (bluish or grayish skin color)

##### **11 to 20 % deficiency**

- Swollen tongue, inability to swallow
- Dim vision, deafness
- Shriveled, numb skin
- Painful urination
- Delirium, unconsciousness and death

#### **Treatment:**

Mild cases - drink liquids, keep warm.

More severe cases require professional medical treatment.

## ***Hypothermia***

Lowering of the inner core temperature of the body. Can and usually does happen above freezing. The victim may not recognize the symptoms and may not be able to think clearly enough to react. Injury or death may result.

### **Predisposing Conditions:**

- Poor physical condition.
- Inadequate nutrition and water intake.
- Thin build.
- Nonprotective clothing.
- Getting wet.
- Inadequate protection from wind, rain and snow.
- Exhaustion.

### **Prevention:**

- Keep rested, maintain good nutrition.
- Consume plenty of high-energy food.
- Use proper clothing.
- Make camp early if tired, injured or lost.
- Get plenty of exercise. Don't sit around much.
- Appoint an experienced person to watch the group for signs.
- Take immediate corrective action for any signs.

### **Symptoms:**

- Loss of ability to reason.
- Shivering.
- Slowing, drowsiness, fatigue.
- Stumbling.
- Thickness of speech.
- Amnesia.
- Irrationality, poor judgment.
- Hallucinations.
- Cyanosis (blueness of skin).
- Dilation of pupils of eyes.
- Decreased heart and respiration rate.
- Stupor.

### **Treatment:**

- Shelter the victim from wind and weather.
- Insulate the victim from the ground.
- Change wet clothing.
- Put on windproof, waterproof gear.
- Increase exercise, if possible.

- Put in a prewarmed sleeping bag.
- Give hot drinks, followed by candy or other high-sugar foods.
- Apply external heat; hot stones, hot canteens.
- Huddle for body heat from others.
- Place victim in a tub of 105° F water. Never above 110° F.

## ***Frostbite***

Tissue injury involving the actual freezing of the skin and underlying tissues. Recovery is slow, severe frostbite can lead to gangrene. Once exposed the victim will be predisposed toward frostbite in the future.

### **Predisposing Conditions:**

- Prolonged exposure to temperatures 32° F or below.
- Brief exposure at extremely low temperatures, -25° F and below.
- Exposed body parts
- Restriction of circulation.
- Fatigue, poor nutrition, low liquid intake, poor physical condition.
- Previous case of frostbite or other cold injury.

### **Prevention:**

- Proper clothing.
- Good nutrition, drink water, maintain core temperature.
- Use buddy system to check face, nose, and ears.
- Immediate treatment of minor symptoms.

### **Symptoms:**

#### First Degree (Frostnip)

- Redness, pain, burning, stinging or prickly sensation.
- Pain disappears and there is a sudden blanching of the skin.
- The skin may look mottled.
- Skin is firm to the touch, but resilient underneath.
- On thawing, there is aching pain or brownness. The skin may peel off, and the part may remain cold for some time.

#### Second Degree (Superficial Frostbite, Frostbite)

- No pain, the part may feel dead.
- Numbness, hard to move the part.
- Tissue and layers underneath are hard to the touch.
- After thawing (takes 3 to 20 days) pain, large blisters, sweating.
- Black or discolored skin sloughs off, leaving tender new skin.

### Third degree (Severe Frostbite)

- Full thickness of the skin is involved.
- After thawing, pain continues for 2 to 5 weeks.

### Fourth degree (Severe Frostbite)

- Skin and bone are frozen.
- Swelling and sweating occur.
- Gangrene may develop, amputation may be necessary.

#### **Treatment:**

- Do not rub affected area with snow. Hold it over fire, or use cold water to thaw it.
- Exercise the affected area to promote blood circulation.
- Use any warmth available to thaw area.
- Do not attempt to thaw frostbitten limbs in the field. It is less harmful for the victim to walk out on a frostbitten limb than to thaw it in the field. Thawing only risks additional injury and the victim will be in too much pain to walk.
- Check for hypothermia.
- For more severe cases refer to more complete instructions.

### ***Snow Blindness***

Inflammation of the eye caused by exposure to reflected ultraviolet rays when the sun is shining brightly on an expanse of snow.

#### **Prevention:**

Wear sunglasses when any danger is present. Do not wait for discomfort to begin.

#### **Symptoms:**

Sensation of grit in the eyes, made worse by eye movement, watering, redness, headache, and increased pain on exposure to light.

#### **Treatment:**

Blindfold the victim and get rest. Further exposure should be avoided. If unavoidable, the eyes should be protected with dark bandages or the darkest sunglasses. The condition heals in a few days without permanent damage once exposure is stopped.

### **Specific Actions That Reduce The Likelihood of Cold Weather Health Problems**

#### **Food:**

- **Have water available (and drink it)**
- **Eat well – complex carbs, protein, fat; limit sugars**
- **Snacks – grains, nuts, granola, gorp**

**Clothing:**

- **Follow recommendations from clothing session**
- **Hat and gloves a must**
- **Carry extra dry clothes (especially socks)**
- **NO SNEAKERS or other porous type footwear**

**Behavior:**

- **Stay out of puddles**
- **No “snow angels”**
- **No snow fights**
- **Stay standing; don’t sit on frozen ground**
- **Limit games of tag or other high physical activities**

**NOTES:**

## NUTRITION AND COOKING IN COLD WEATHER

Food, Water, and Sanitation are important considerations for cold-weather camping. Food should be easy to prepare and provide the calories and bulk necessary to provide you with heat and energy, as well as supply needed nutrients. Plans should be made to collect and purify water as needed. Finally, eating and drinking necessitates plans for sanitary waste elimination.

### **NUTRITION**

Except under survival conditions, well-clothed, sheltered, and trained campers use little more food in the cold than in moderate temperatures. However, caloric intake in cold weather increases for two reasons. First, the extra-activity required by dressing and the hampering effect and weight of that clothing increases energy needs. Second, the stimulus of the cold gives you ravenous appetite. However, because the body "fires" burn somewhat hotter in cold weather and because food affects morale, you will want to supply your group well. Foods come from animal and vegetable sources, and serve three functions in the body:

- Serve as fuel to provide heat energy or calories
- Provide materials for building repairing, or maintaining body tissues
- Help regulate body processes.

Calories measure the amount of energy in the food you eat. They are furnished by carbohydrates, fats, and proteins.

**CARBOHYDRATES** - These are usually the main source of food energy. They are grouped together as starches, sugars, and celluloses. Starches and sugars are quick-energy foods because they provide only energy. Starches are found in bread, cereals, flour, and potatoes. Sources of sugar in the diet include ordinary white or brown sugar, milk, and fruit. During digestion, starches and sugars are turned into simple sugars which are then oxidized to give energy. The body does not digest cellulose (dietary fiber), but fiber helps move food wastes through the digestive tract, making them easier to pass. The best sources of fiber are whole grain cereals and breads, nuts, seeds, fruits, and vegetables.

**FATS** – the highest energy food, provides about 9 calories per gram. Carbohydrates and proteins each provide about 4 calories per gram in metabolism. They also furnish the natural sources for the fat-soluble vitamins A, D, E, and K. Fats can be either animal or vegetable in origin. Fats give a diet its "staying" qualities, helping to satisfy your appetite. Fats and carbohydrates are called "protein spacers" since their presence prevents the body from having to burn its protein (blood and muscle) to give energy. The body selects carbohydrates to- burn first, then fat, then protein, because of their relative ease of metabolism. A diet consisting of 40 percent fat, 40 percent carbohydrates, and 20 percent protein appears to be best in cold weather, for a number of reasons.

**PROTEIN** – is the most common substance, other than water, in your body. Its main function is the growth and maintenance of body structures. Supplying energy is a backup function for proteins. Carbohydrates and fats have the primary responsibility for supplying energy. Protein serves this function only if not enough of these nutrients are available to meet the body's energy needs. Protein can either be of animal or vegetable origin. Proteins are made of building blocks called amino acids. Most of the amino acids can be manufactured in your body but some cannot, so these essential amino acids must be supplied by the foods you eat. Protein from animal sources (meat, fish, poultry, milk, and eggs) supplies all of the essential amino acids. Protein from vegetable

sources (Beans, peas, whole grains, and nuts) may have several of the essential amino acids, but rarely all of them. Protein has another remarkable property; the specific dynamic action by which protein, in its own digestion and oxidation, increases body metabolism by 30 percent. This is a source of heat in addition to that normally produced by the muscles and the liver. In the cold, protein is an additionally protective food. Because the byproducts of protein metabolism are dependent on the kidney for excretion, water intake must be kept up to prevent damaging hard-working kidneys when increased protein is eaten. This liquid can be in almost any form (water, fruit drinks, hot thin soups), except coffee. Not only does coffee increase nervous tension in cold climates, but it also causes excess dehydration by stimulating kidney function. This decreases the body's ability to handle protein excretion.

## PROVISIONING

Using "Best and Taylor's Physiological Basis of Medical Practice" as a reference, the best average temperature-climate diet follows, along with a recommended cold-weather diet.

Food Element	Temperate Climate	Cold Weather
Carbohydrates (4.1 calories/gram)	53%	40%
Fats (9.2 calories/gram)	35%	40%
Proteins (4.1 calories/gram) (first-class proteins: meat milk, eggs)	12%	20%

The number of calories required per day is based on many factors and should be matched to the individual and the circumstances. The quality of calories utilized in winter programs depends on many factors; weather, temperature, type of activity, etc. The following example of a day's ration is designed to be adjusted from between 3,000 and 4,000-plus calories per day. This ration should be consumed along with 2-1/2 to 3 quarts of water per day. The amount of water can be increased depending upon the amount of work, the temperature, etc.

## BREAKFAST

This meal should provide a moderate amount of energy but enough fat to satisfy your appetite. A good breakfast might include:

- Hot cereals – oat, wheat, rice, corn, grits, etc.
- Cake bar or granola bars.
- Fruit – single item like raisins or mixed fruit; sauce can be added to make a fruit soup.
- Fruit juice – a pure fruit juice, not a fruit-flavored drink as is used for lunch and dinner. The primary purpose of this juice is to provide liquid, sugar for energy, and vitamin C.
- Hot drink--can be cocoa, but should not be limited to this product alone.

Other good hot breakfast drinks include tea, eggnog, and spiced hot cider.

## LUNCH

This meal should provide high-carbohydrate energy. A good lunch will include:

- Hard, fortified crackers or Hudson Bay Bread.

- Spread for crackers – peanut butter, honey, jelly, etc.
- Fruit drink, hot or cold.
- Hot soup or other hot dish – baked beans, etc.
- Fruit – applesauce, etc.
- Trail snack.

## DINNER

This meal should provide adequate calories and the highest amount of protein of the day. This provides warmth and promotes tissue repair during the night's rest. A dinner menu should include the following:

- Hot main dish – can be a one-dish meal, a retort meal, or a freeze-dried dinner, and should include a starch (rice, noodles, or potatoes), a sauce (meat broth, gravies, etc.), and a meat (chicken, beef, or ham).
- Freeze-dried or fresh vegetables – served separately or added to the main dish.
- Crackers – can be less "durable" than those eaten at lunch, but should still be high in nutritional value.
- Fruit drink – same as lunch item; 8 ounce serving.
- Hot drink – same as at breakfast; a 1-cup serving.
- Dessert – can be one that requires preparation and cooling, such as pudding, or an already prepared item. A hot sauce goes well with either.
- Extras – sugar or sweetener, milk powder, cream powder, salt, pepper, and your own favorite spices. Butter or margarine, honey, maple sugar, fruit soup mixes, flavored teas, instant hot soups and bouillons, special soups.

## COLD-WEATHER FOOD PREPARATION TIPS

- Use stainless steel containers for cooking whenever possible. They are easy to cook with and to clean.
- Use insulated plastic cups, bowls, and spoons, if possible. Wooden cups and spoons are also good for winter camping as there is much less heat loss than with metal.
- A small camp stove is usually a great help.
- Rice is one of the best items in your 'cupboard' for any camp menu. It can be used in many different ways for main dishes, breakfasts, or desserts, takes a small amount of space, and is easily prepared.
- Fats are important in the winter to release heat and energy slowly. A good source of vegetable fat is corn oil margarine, which can be used in almost anything. Fats give energy of about 9 calories per gram, compared to carbohydrates and protein, which yield about 4 per gram.
- In provisioning for winter camping, use 40 percent carbohydrates, 20 percent protein, and 40 percent fats. This is not a hard-and-fast rule but a guide in choosing your foods. Half of the protein should be from high quality proteins; meat, milk, and eggs.
- Substituting caffeine-free coffee or tea for those containing caffeine helps to combat dehydration and prevent headache.
- When making trail biscuits, use whole-wheat flour, which provides more protein, nutrients, and fiber than white flour.
- Peanut butter and honey make a very good spread. Mix them together at home and package the mixture in individual servings.

## SAMPLE RECIPES

### Hudson Bay Bread

Hudson Bay Bread is a year-round favorite, serving as the basis of a high-energy lunch or snack. Start by mixing together the following ingredients:

1 1/2 lbs. margarine or butter                      2 tsp. maple flavoring

4 cups sugar                      Then mix in:  
2/3 cup corn syrup              1 1/2 cups ground nuts  
2/3 cup honey                      19 cups oatmeal

Spread the mixture in a large sheet pan. Press it down into the pan. Bake at 325°F in a wind oven for 15 to 18 minutes. As soon as the bread is taken from the oven, use a spatula to press it down (to keep it from crumbling). Cut the bread while it is still warm.

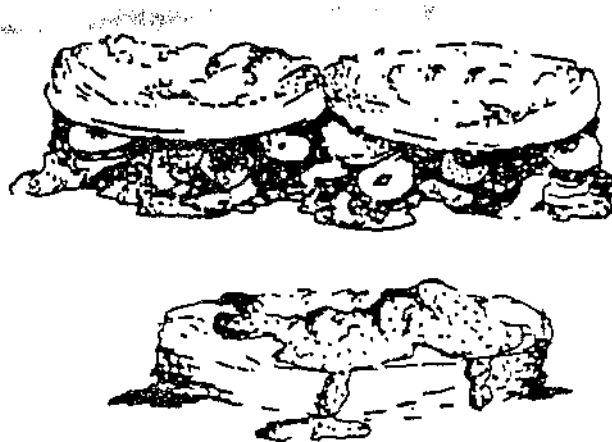
For home preparation, cut the recipe at least in half. A conventional oven requires a longer baking time.

### Old Fashion Dumplings

1 scant cup water  
1/4 lb. butter or margarine salt  
1 cup flour  
2 eggs

Bring water, butter and salt to a boil. Remove from heat and beat in flour till smooth. Beat In eggs one at a time mixing each in thoroughly. Drop by **teaspoon** In boiling soup. Lower heat a little and cook till dumplings rise to top of **soup**.

A great addition to most soups.



### Rick's Dutch Oven Stew

(12 inch Dutch oven)

1 lb. lean hamburger 12  
sliced potatoes 12 sliced  
carrots  
1 large chopped onion 1  
large green pepper  
1 cup sliced mushrooms Salt and  
pepper to taste  
8 to 10 slices Velveeta cheese

Brown meat. Add remaining ingredients except mushrooms and cheese. Cover with water and cook until vegetables are tender. Add mushrooms. Cover with cheese

Continue cooking until cheese is melted. Serve hot. 12 coals top and bottom. Rick Bybee, Famous Chef's Apprentice

## Cream Of Broccoli Soup

(12 inch Dutch oven)

3 strips bacon fried and crumbled  
1 cup butter  
1/2 cup flour  
1/4 cup chopped celery  
1 small onion minced  
2 cups half and half  
2 cups finely chopped fresh broccoli  
salt and pepper to taste  
1/4 tsp. thyme

1/4 tsp. nutmeg

Use same dutch oven as bacon was cooked in, using bacon grease. Melt butter in frying pan or dutch oven. Saute onions and celery and butter. Add flour to make a roux. Cool 2-3 minutes until you have a stiff paste. Slowly add half and half and water to desired thickness. Add salt, pepper and spices. Add broccoli last. Simmer until tender. Stir occasionally to keep from burning. Coals: Bottom 8-10, Top 12-14.

## Surprise Stew

(12 or 14 inch Dutch oven)

Ask each person coming to dinner to bring 1 or 2 **cans** of meat or vegetables with the labels removed. Open the cans and pour into the Dutch oven. Cook to boiling point. Cover with biscuits made from a mix or from refrigerator can. Replace lid **and** remove from heat. Let stand 15 to 20 minutes or until biscuits are done. 12 coals top and bottom.

## Oxtail Soup

(12 inch Dutch oven)

1 1/2 - 2 lbs. ox Joints  
2 carrots sliced  
2 stalks celery chopped 2 medium onions  
6 leeks chopped  
1 tsp. Worcestershire  
1 2 1/2 can tomato sauce

Place oxtail in dutch oven. Cover with water and simmer until tender. (Approx. 1 1/2 hrs). Cool and skim off fat. Add chopped vegetables and continue cooking until done, about 45 minutes. Add 1 tsp. Worcestershire sauce, tomato sauce and salt and pepper to taste. Coals: Bottom 10 top 12.

## NOTES:

## **WINTER DRESS – THE KEY TO WARM CLOTHING**

The C-O-L-D key to keeping warm applies to the clothing you wear. Here are some of the ways you can use it:

- Keep Clothing **CLEAN**. Dirt and grease clog the air spaces in the clothing and reduce its insulation value. When cleaning, make sure all soap is rinsed out because soap residue can reduce insulation qualities.
- Avoid **OVERHEATING**. Select the clothes that you need to stay comfortable, and even slightly cool. It is better to be cool than run the risk of perspiring and reducing the insulation value of your clothing. If you are too warm, loosen closures a few at a time if you are still too warm, remove a layer.
- Wear **LAYERS**. Layers of clothing should be worn long and loose-fitting. Not only does this allow more freedom of movement, but it lets your blood circulate freely, preventing frostbite. Select clothing that is the correct size, and care for it so that it retains that size. Do not boil fabrics or wash them in water that is too hot. Do not dry fabrics in a hot dryer. The fabrics will shrink and clothes will lose the insulating advantages of a loose fit.
- Stay **DRY**. It is important to keep clothing dry outside as well as well as inside. Do not get so warm that you start to perspire. Do not let snow collect on the outside of your clothing. The heat from your body melts it, and some will penetrate even water-repellent fabric, reducing the insulating properties of the fabric.

### **THE OKPIK CLOTHING SYSTEM**

The Inuit refer to all warm clothing as okkortok. The Okpik system is similar to the many-layered clothing the Inuit call the annorak.

- The outer coat is called kolliktark.
- The inner coat is called attagi.
- Trousers are called karklik.
- All undergarments or liners are illupak.
- Boots are kamiks, socks are alerte, and mittens are poaluk.

You need clothing that protects you from the cold and holds your body heat, but that also can be ventilated. The layers should be thin so frost forms between layers, not inside the insulation. Clothes for cold-weather camping should be designed so that the camper can function effectively in any environment. The prime consideration is comfort, not appearance. The clothing is designed to keep campers warm rather than stylish. However, the three principles of insulation, layering, and ventilation used in the Okpik system apply to any cold-weather clothing.

Okpik clothing design incorporates the principles of insulation, layering, and ventilation to make the clothing work for the wearer. Insulation material reduces the amount of body heat lost to the outside. By regulating the amount of insulation, you regulate the amount of heat lost or retained. This flexibility becomes important when environmental conditions or activities change, altering the amount of warmth needed for comfort and safety. One method of insulation is layering. Several layers of medium-weight clothing provide more insulation and flexibility than, one heavy garment. This is true even if the heavy garment is as thick as the

combined layers. The reason is that air is trapped between each clothing layer, as well as in the air pockets between the cloth fibers, as it is warmed by body heat.

To capitalize on this heat trapping, the layers of clothing are designed differently. Winter underwear is porous, with many air pockets to hold body-warmed air, while the outer garments are made of windproof, water-repellent fabric to keep cold air outside. The layering method allows greater freedom of movement and is easily adjusted for a wide range of conditions. Layers can simply be added or subtracted as needed.

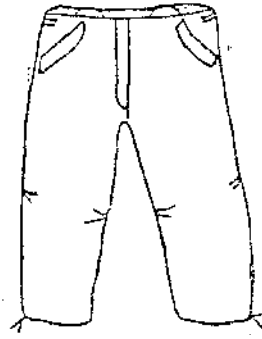
Ventilation helps to maintain a comfortable body temperature. It is important to ventilate before you become overheated, because evaporating perspiration cools the body. Perspiration can also fill the air spaces of your clothing with moisture-laden air, reducing its insulating qualities. Scientists advise, "Allow outside air to cool overheated layers by adjusting openings such as cuffs and front closures. If more cooling is necessary, it may be time to remove a layer".

The illustrations following show outer clothing systems based on layering that works well in most cold-weather camping, whether in wet-cold, dry-cold, or Arctic-like conditions. Layers are important, as they supply the insulation necessary to control the body's warmth. They can also be adequately ventilated to control the buildup of perspiration within the clothing. This clothing system uses layers that fit over one another loosely and without constricting body movement. The outer garments should be water-repellent or, in areas of extreme wetness during cold-wet conditions, both breathable and waterproof. The wind parka pullover (not insulated), insulated parka liner, insulated vest with removable sleeves, hood, trousers, insulated trouser liner, wind pant, and insulated wind pant liner make up the Okpik outer clothing system. They are used with various inner layers and footwear, including the mukluk with foam or conventional liners, and upper-body protection. This upper-body protection includes cheek protectors, hat or cap, balaclava, scarf, headover, hand protection with gloves, wristlets, mittens, and protective overmittens. Sleeping attire is discussed under Cold-Weather Sleeping Systems.

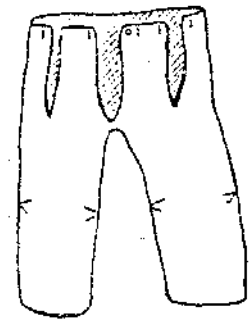


insulated parka liner •

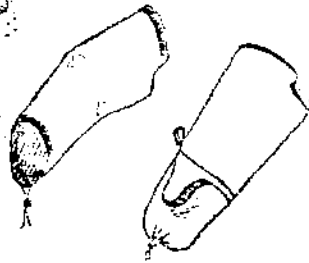
Uses for removable sleeves



Wind pant



Wind pant liner



Emergency foot covering

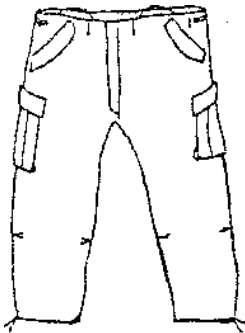
Emergency mitten



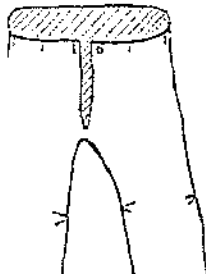
Hood



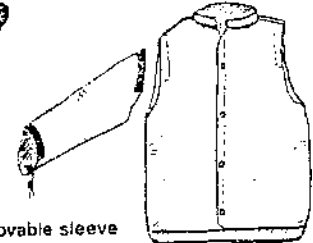
Wind parka pullover



Trousers



Trouser Liner



Removable sleeve

Vest

# Clothing—the Key to Comfort

**Headgear.** This is a matter of personal preference, but it always a good idea to have at least one stocking cap or knit cap for use under a parka hood or in the sleeping bag. Soft, insulated caps with ear flaps are good, but should be loose fitting.

**Eye Protection.** Goggles are best, but sunglasses and homemade snow shields will reduce glare from sun off the snow, a situation that can cause painful problems, and even "snow blindness."

**Scarf.** Wool or synthetic fiber makes an excellent cold weather protector, but make sure the scarf is plenty long.

**Parka.** The *amorak* or pullover parka should be windproof, should reach almost to the knees, and be large enough to fit over all the other garments. It should have a hood.

**Hand Covering.** This is a matter of personal preference that can be made up of any loose fitting combination of the following: wool gloves, wristlets, wool mittens, foam mittens, Dacron mittens, leather overmitts, or wind and waterproof expedition mitts.

**Jacket.** A lightweight jacket used in combination with other outer garments makes a better "layering" system than one thick, heavy jacket. A hood for extreme cold is a welcome addition.

**Vest.** This insulated garment keeps the vital organs, heart, and lungs warm. The best style has a flap in back to protect the kidneys. Detachable sleeves convert a vest to an insulated jacket.

**Sweater.** Wool or wool synthetic sweaters will keep you warmer.

**Shirts.** Wear full-cut, loose wool or wool and synthetic fiber.

**Long Underwear.** This can be wool, wool and cotton, wool and synthetic fiber, or synthetic fiber. Keep a spare set for emergencies and to sleep in.

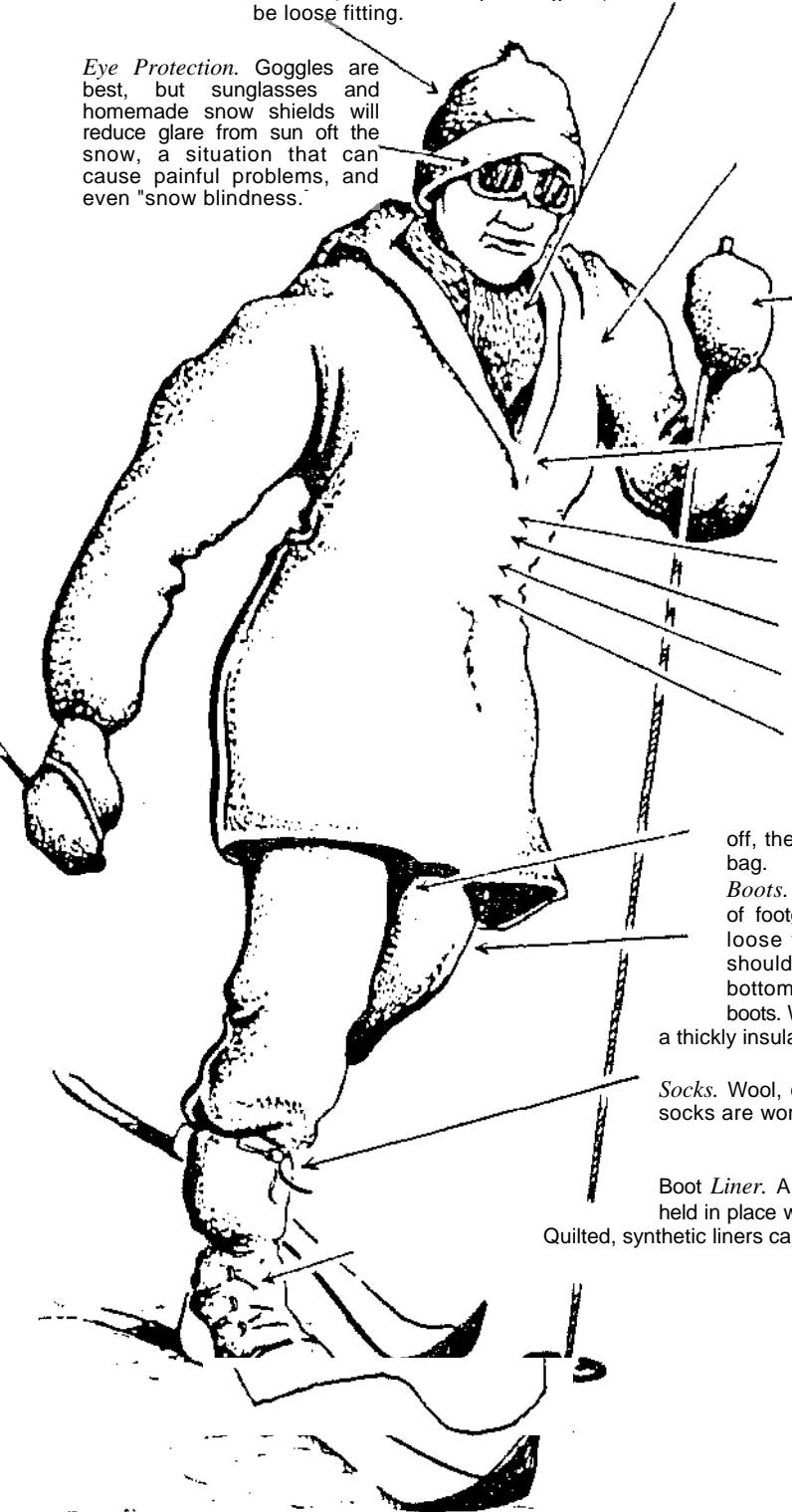
**Pants.** Wear full-cut pants, preferably with suspenders. In extreme cold, lightweight, windproof pants may be worn over everything.

**Insulated Chaps.** Equipped with snaps down the inseam, they may be put on or taken off without removing the boots. Taken off, the legs may be zipped together to form a half bag inside the sleeping bag.

**Boots.** Proper footgear is essential. In the Okpik program we use a variety of footgear; designed for different needs. A boot should fit somewhat loose for warmth, but the adage "cool is comfortable" is true; the feet should not sweat profusely. The boots we use are rubber, rubber bottom pacs, mukluks (high tops), kamicks (low boots), moccasins, and ski boots. We sometimes use a combination of a light boot for travel, and a thickly insulated boot for camp.

**Socks.** Wool, or wool and synthetic are good. Sometimes synthetic fiber stretch socks are worn next to the skin for added warmth.

**Boot Liner.** A specially cut piece of 1-inch foam can be wrapped around the foot, held in place with a nylon sock, and used with the mukluk in very cold weather. Quilted, synthetic liners can also be used, as well as felt liners.





### Types and Amounts of Clothing

1. long underwear; 2. shirt or inner layer; 3. sweater or light jacket; 4. wind or rain gear; 5. inner pants; 6. wind or rain pants; 7. wicker inner socks; 8. insulating socks; 9. boot liners; 10. and 11. footwear; 12. and 13. head coverings; 14. and 15. gloves and mittens

## INNER LAYERS AND FOOTWEAR

**SOCKS** – Wear a wicking (polypropylene, silk, or similar material) sock next to your foot. The insulating socks can be made of wool or wool blends. You may want to consider a vapor barrier sock as well. If you use a vapor barrier sock, place it between the wicking socks and the insulating socks.

**LONG UNDERWEAR** – Use long underwear made from a wicking-type material such as polypropylene.

**PANTS** – Good wool pants are hard to beat as cold-weather clothing items. Figure-eight suspenders work well and allow you to change or add wind pants without taking off the upper garments.

**UPPER-BODY PROTECTION** – use layers of shirts, sweaters, and vests. Make sure you wear items that fit properly and are comfortable.

Wristlets

**HAND PROTECTION** – Nothing can be more frustrating than cold hands. Use wristlets to keep your whole hand, especially your fingers, warm. Mittens are warmer than gloves, but you may prefer gloves if you are skiing or using your hands for other work. Both inner and outer mitts may be necessary, so don't forget extras.

**NECK PROTECTION** – Be sure that you have either a scarf or neck gaiter to protect your throat and neck area. The 5- or 6-foot tubular scarf can be used in several different ways, including as an emergency cap or sleeping hood.

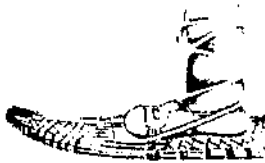
**CHEEK PROTECTION** – See the section on making cheek protectors.

Cheek protector

**HEADGEAR** – Caps, ear warmers, hats, etc. are important because they minimize the heat loss from your head.

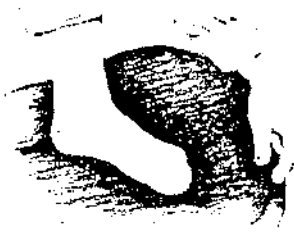
**FOOTWEAR.** Among the most important items in footwear are insulated insoles. These can be made from scraps of foam or they can be purchased in sporting goods stores. Make sure your footwear meets the requirements of the area where you camping.

Always carry extra footwear to use in camp. Don't make the mistake of wearing boots that are too tight. For snow camping, consider mukluks or other snow boots. Make sure you wear them properly. Snow boots must be worn with insoles as well as socks or footwraps. Make sure you have plenty of insulation and that your footwear allows adequate circulation.



Muklucs

Proper method of using an insole or insoles with a foot wrap inside a mukluk



Fold insulated foot wrap around foot.



Use a "slippery" nylon sock over foot wrap and insert in Mukluk or other cold-weather foot gear



Insulated insoles (one or two)

Mukluk

## NOTES:

## Winter Campsites

**The following general information needs to be supplemented with the actual rules in place at the camping facility. Remember, National Parks, Historical Sites, State & County sites, and private facilities will generally have specific rules that MUST be followed. Incorporate their requirements into your campsite set up.**

Campsites should be set up so that the rear of the tents is toward the prevailing wind or a windbreak. The prevailing wind can be determined by observing snow, leaves, moss, etc. If the campsite is in a hilly or mountainous area, the rear of the tent should be uphill because this is the region where the cold blasts will come from after sunset. Natural windbreaks (bushes, hedgerows, tree lines) as well as man made (snow walls, piled brush, etc.) should be used when possible. Caution should be exercised, when using a tree line for a windbreak. Avoid the temptation to camp under those trees. The results of a snow-laden bough breaking loose could be the crushing or impaling of your tent or YOU. The extra cover provided is not worth the risk.

In addition to facing the rear of the tent toward the wind, your tents should be set closer together than normal "fair weather" camping for two reasons:

1. The tents themselves form a windbreak.
2. It allows you to readily summon assistance from your neighbor when necessary.

Camping in snowy cold weather brings a vast array of difficulties – not the least of which is mud control. The constant walking on snow as well as the sun will turn snow to water and the ground to a muddy mess. Heavily used areas such as for cooking, campfire and in front of the tents are most likely to turn to mud. To control the mud, clear away the snow and cover the area with one of the following:

1. Pine boughs, grass, straw/hay, leaves
2. Corduroy of logs (see description below)
3. Pallets (recommend roofing/shingle pallets because slats are closer together).

A corduroy is simply a series of small logs, no thicker than your wrist and about four to eight feet long for a fireplace, or as long as needed for other applications (tents/trails/latrines/etc.). Lash these poles together (similar to a raft) as wide as needed for the area to be covered. A corduroy around the fire will make camp cleaner, cooking and other gatherings a bit more mud free, and reduce the number of mess kits/silverware/other objects that traditionally go "missing" around the fire.

### **Food and Water:**

Certain precautions must be taken when storing food and water in cold weather. Food can freeze at temperatures of 32 degrees F or below. Non-perishable foods in glass and plastic containers are susceptible to freezing. Glass containers should not be taken on cold weather camping trips. Plastic and metal containers when taken should be stored in an insulated container (old cooler, Army melamite can) because even the plastic and metal containers will explode when the temperature goes below 0 degrees F.

Sometimes, it is assumed that because it is cold outside, refrigeration for perishable items is not important. Milk, orange juice, & eggs will freeze making them hard, if not impossible, to use. A cooler (insulated container) for perishable with minimal ice is needed to keep items from freezing. In the case of eggs, it is recommended they be broken and placed in a plastic container because the cooks have

difficulty breaking eggs with gloves on, and if they use their bare hands they become very susceptible to frost bite.

Water storage can have its problems. Water starts to freeze at 32 degrees F and as temperatures drop becomes more viscous. If the campfire area allows, water in metal or plastic containers can be placed near, NEAR the fire to insure pourability. When doing this, much care needs to be given to how close plastic containers get to the fire. Another method is to store water in insulated water jugs (Coleman, Rubbermaid, etc.). The valves on these containers will freeze at low temperatures. Usually, even if the valve is frozen the water remains pourable if the top is removed.

### **Shelter:**

What should be used for shelter? For personnel, the shelter can be tents, igloos, snow caves, etc. Here we will talk about tents. The modern nylon tent has breathable panels, but in cold weather even these are not enough to remove the moisture caused by breathing. The front and rear window/door should be opened about 4 inches to allow the wind to remove the moisture-laden air. Today's nylon tents have two types of floors, nylon and polypropylene. The nylon floors need to be protected from the elements (snow, moisture, etc.) by something. Later in this section we will discuss protection for floors. Nylon tents are easy to set up and lightweight. The canvas tent is a better retainer of heat than the nylon tent but it is much heavier and harder to transport making it not well suited for cold weather use. Also, most canvas tents do not have a floor.

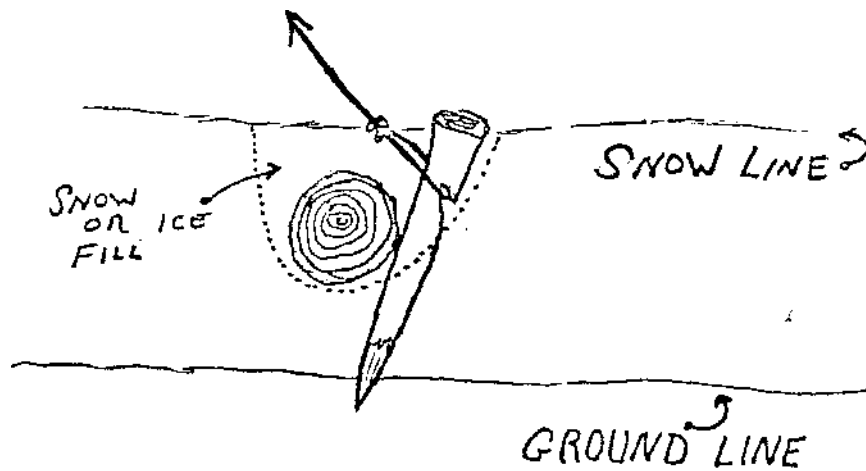
To protect the occupants of a canvas tent or nylon tent with nylon floor from the elements, some barrier needs to be used. Some barriers are biodegradable; they include straw/hay, leaves and paper. The non-biodegradable barriers include polypropylene tarps and plastic. Probably the best barrier is \_\_\_\_\_ plastic sheeting (preferably 6 or 8 mil thick) because it is virtually impervious to the elements and to mold and mildew. Caution must be taken to insure the plastic is completely under the tent so as not to let moisture run on the plastic and under the tent.

Snow is an excellent insulator as shown by the igloo and snow cave. It can also be used around the base of a tent to stop air infiltration. If the tent is canvas the snow can be loosely placed on the skirt. If the tent is nylon do not put snow against the side as the heat from inside will cause the snow to melt and water to penetrate the tent. On a nylon tent an 8" to 12" wall of snow 6" from the base will act as a windbreak.

If a cooking shelter is used and has four walls, one corner should be left unsecured to allow carbon monoxide to exit. If you secure a tarp to a peg by rope in cold weather (snow or not) your rope will work better if the taut line hitch is at the upper end not near the ground, where water or snow could cause it to freeze and not be adjustable.

Driving tent stakes into frozen ground can prove to be an interesting experience, especially if you are trying to drive one of the newer aluminum-alloy pegs, plastic or even better, one of the old style wood type. They will bend, curve, or break. Long (8 inch or longer) NAILS, from the local hardware store, can be used in place of the pegs. They do not bend as easily as the aluminum-alloy.

If the ground is too hard to drive a stake in and has a light covering of snow, remove a 12" x 12" square, place your stake vertically in the square, attach your rope (double half hitch) and cover with water. This should securely freeze your stake to the soil and at least give you an attachment point.



If you are fortunate enough to be camping in deep snow and wish to rig a tarp, but cannot drive the peg deep enough, use the " Snow Anchor Alternate" method shown below.

Simply custom-cut a peg of desired length, and a log about 6 inches in diameter and 18 inches long. Dig a trench, bury the log and drive the peg behind it. Fill the trench with snow (wet the snow if possible) refill the trench, tamp down the wet snow and allow to freeze. (It is not MANDATORY to use wet snow, only for increased strength should wet snow be used!) A good thing to remember is that pegs should not be driven into the ground so far as to make it impossible to remove because of BSA Leave No Trace policy.

### **Fires:**

If a fire is built for the people to keep warm by, great care needs to be given that as each person nears the fire they open or remove appropriate layers of clothing. This keeps them from becoming overheated. If they do not adjust the clothing, when they walk away from the fire they will be extremely cold.

If a fire is built for the people to keep warm, great care needs to be given that as each person nears the fire they open or remove appropriate layers of clothing. This keeps them from becoming overheated. If they do not adjust the clothing, when they walk away from the fire they will be extremely cold.

In order to prepare meals some sort of fuel has to be used. One fuel is white gas (Coleman fuel). This fuel offers reasonable heat. Its bad point is the storage requirements for the spare fuel and the possibility of spills while fueling. Propane is another fuel that is commonly used. Its storage and refueling is good but due to the use of copper and brass fittings, sometimes the lines/tanks freeze. The last fuel we will look at is charcoal. Charcoal is the best fuel in cold weather. It is easily stored and gives good heat and is not affected by the cold. When using charcoal, an off-the-ground container is recommended (less ground thaw). These containers can be purchased or homemade.

### **Equipment Transport:**

We now know some of the equipment we need but, how do we get it from the vehicle to the site? If there is snow, a sled is a good choice. It can be your Klondike sled, a store bought sled, a toboggan or a snow disk. Another method would be to use some kind of cart (if snow is not too deep); these also could be commercial or homemade.

In many National Parks/Historical Sites, state, county, local or private parks, there are "off limit" areas and the appropriate persons should be contacted to find out what these limitations are.

**NOTES:**

## COLD-WEATHER SLEEPING SYSTEMS

This module of the Cold Weather Camping Seminar covers the proper equipment, clothing and techniques that should be used to ensure a comfortable and safe night sleep when camping in cold weather.

Sleeping condition is one of three factors that can make or break a cold weather camping experience, along with keeping warm and having the proper amounts of food and water.

You may encounter controversy about which kind of bedding is best for cold-weather camping, but your choice will depend on the type of cold in which you camp. Many factors contribute to the selection of bedding, but the following points apply to all cold-weather camping situations:

The body cools down during sleep. The blood (heat) is drawn from the extremities (feet and hands) and brought to the center, or core, of the body. In all cold-weather camping situations, the ground is colder than the body. Proper insulation must be provided to prevent heat loss by conduction.

C-O-L-D, the key to staying warm, is as important with bedding as it is with clothing.

- Your bedding should have a washable liner so it stays CLEAN.
- To keep you from OVERHEATING, your bedding must be ventilated. Overheating in a sleeping bag produces perspiration just as when you wear the wrong clothing.
- Your bedding should be lightweight and large enough to accommodate you. If possible, use a LAYERING system. When a layered system is used, it is easier to remove the frost buildup that occurs naturally when your body produces warmth. It is a major concern if you are camping for more than one night.
- Keep your equipment as DRY as possible by pumping all of the warm, moist air out of the bag each morning and then airing and exposing it to the radiant warmth of the sun. Turn the bag or bags inside-out and check for frost. Then leave them open until they cool to the air temperature.

First we discuss why we tend to get cold at night and what should be done to combat it. The first element we discuss is water and what an effective heat transfer medium it is. We then go on to mention that humans produce lots of water in the form of sweat. So if water will drain us of heat and we are producing it what can we do to combat this. We must find things to wear and ways to prepare so maximize keeping us comfortable and DRY while sleeping. The following are the items covered:

1. When you are sleeping the cloths you are wearing as well as your body should be Clean and Dry. DO NOT sleep in clothing you have worn during the day. It is DAMP and DIRTY and will make you cold. One should completely disrobe and change into clean sleeping cloths at bed time. Towel off before dressing for bed.
2. You should use the Layering Technique of dressing just like during the day.
3. Pay attention to the materials you wear. AVOID COTTON. There are lots of manmade materials and wool that can be worn which promote moisture wicking (moving water away from you body).
4. Have a clean/dry stocking hat to wear for sleeping. "If your feet are cold put on a hat."
5. I then show the variety of clothing available in thermal, polyester, silk and wool available for sleeping in comfort. One item of cotton is featured, a towel that can be used at your feet or around your neck.

- The terry cloth tends to again, wick water away from you while you sleep.
6. Some Common Sense practices: Avoid drinking anything before bed. Eat something with a high fat content (peanut butter) before bed to give your body energy to fight the cold.
  7. Make sure to change into fresh clothing in the morning for activity allowing your sleeping gear to dry. It will dry, even in the cold air. Allow your bag to stay open to dry as well.
  8. As a leader it is advised that you carry extra wool caps and blankets. This may ensure your own good night sleep.
  9. Finally, sleeping in the cold can be comfortable and safe if you are prepared properly.

Selecting the proper cold-weather bedding is not simple there are many sleeping bags on the market. Learn all you can about your camping climate and conditions, and use this chapter to help you choose the combination of pieces that will be the most comfortable sleeping system for you.

When preparing sleeping equipment for cold weather campouts, consider the temperature and type of cold you expect to encounter. Most cold-weather camping is done in wet-cold or dry-cold conditions, not in Arctic-like cold, and the temperature in a shelter is rarely below zero. In those conditions, a layered sleeping system protects you against cold and makes it easier to control moisture and heat.

A cold weather sleeping system includes some or all of these elements, depending on the particular situation: insulation between the outer sleeping bag and the ground or floor; a sleeping bag or layers of bags; a washable sleeping bag liner; a sleeping suit; loose socks or other foot insulators; a stocking cap; wristlets; and a tubular scarf.

### **Ground or Floor Insulation**

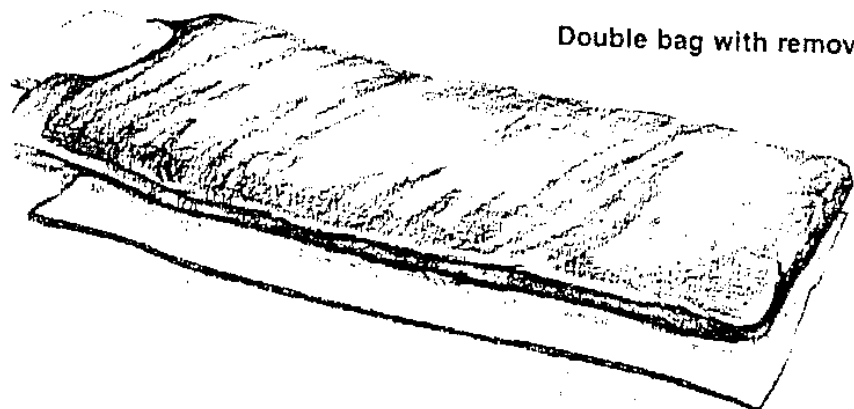
The insulation under the sleepers is the most critical concern. Good insulation should cover the entire floor of the sleeping quarters rather than just a small area under each sleeper. With the floor of the shelter completely covered, you do not have to worry about sleepers rolling off the pads. Using this method, you minimize the entire shelter's heat loss not only by conduction, but also by radiation and convection.

The conductive heat loss from your body to the colder ground is subtle and usually not easily recognized. This heat loss drains the body of warmth and eventually makes sleeping impossible. A problem of recognizing heat loss to the ground is that you usually feel warm next to the colder surface, even as you lose heat to it. Adequate protection under a sleeping bag requires a minimum of 3/8- to 1/2-inch thickness of a good, firm insulation. A 1-inch thick open-cell foam pad is not adequate; it gives much less than half of this at the pressure points (hips, shoulders, feet, etc.). The open-cell foam sleeping pad is designed to provide comfort, not insulation. It can be use on top of another pad, but is inadequate by itself.

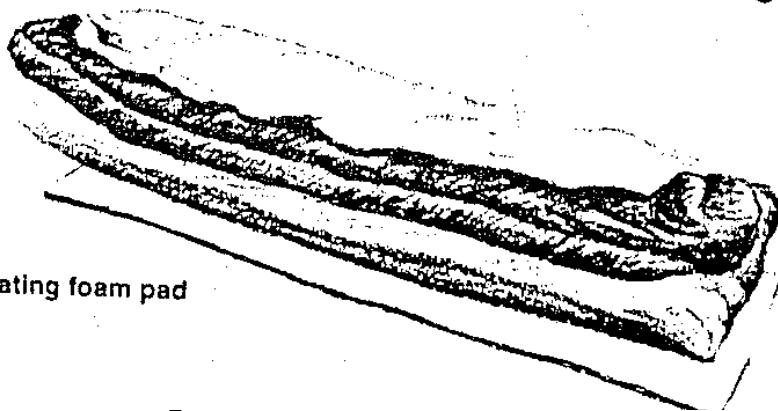
### **Sleeping Bags**

In choosing a sleeping bag, make sure of your needs and wants, considering the temperature where you will camp. Ask others to give you honest answers as to how their bags work in your camping locality. Synthetic insulation can be very good in sleeping

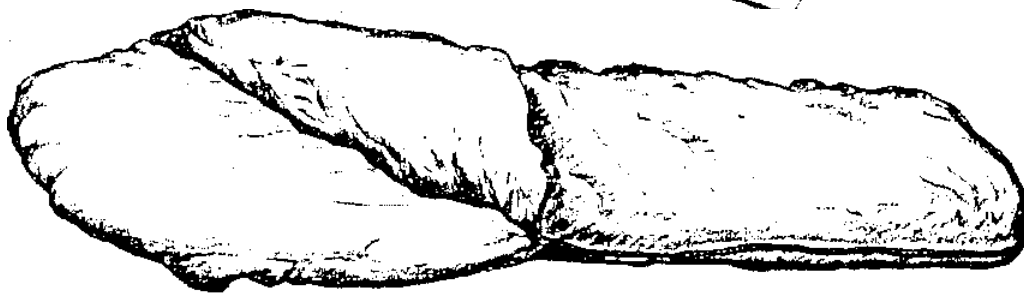
bags; synthetics pick up little moisture, and can be washed easily. If you use a down bag in combination with other sleeping bags, always make sure it is the bag closest to the body. The warm air leaving your body is moist. As it cools, it loses its ability to hold moisture, and the moisture condenses. Since down is porous, it absorbs this moisture; synthetics, being less porous, let the moisture pass more readily.



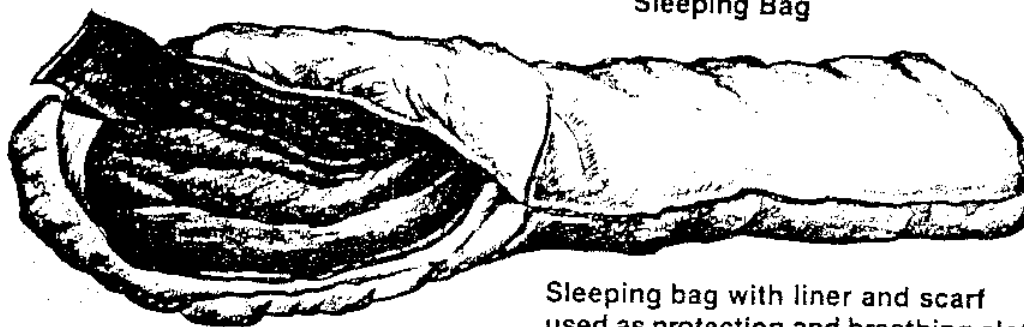
Double bag with removable liner



Insulating foam pad

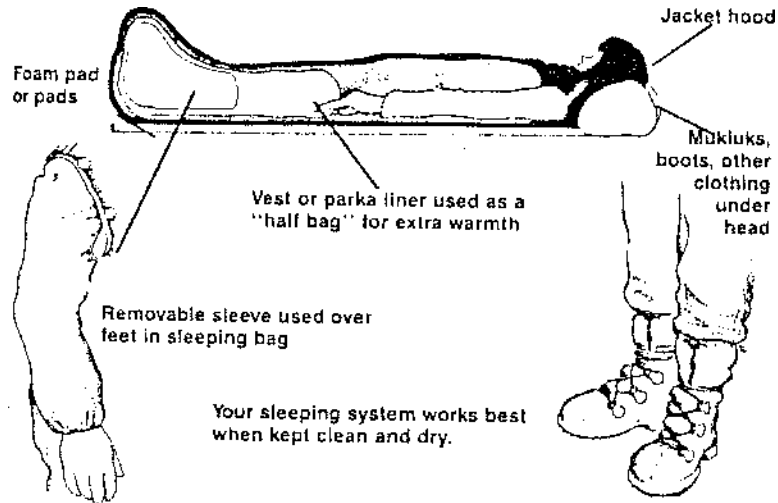


Sleeping Bag



Sleeping bag with liner and scarf used as protection and breathing cloth

The elephant foot or half-bag helps to conserve your body heat while you sleep. It is form-fitting but not too tight, and goes over inner items, closing with a drawstring under the arms. This bag can be made of many different materials. The half-bag moves with you and helps keep a warm envelope of air around your lower body.

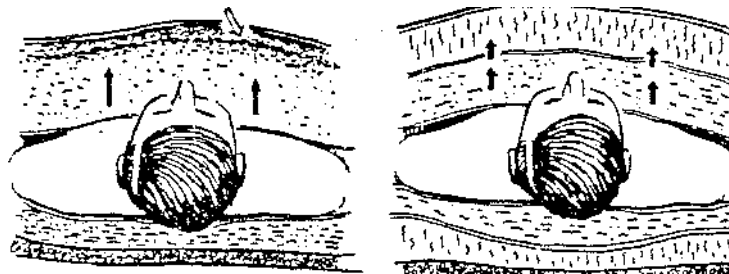


### Washable, Insulating Liner

This completes your sleeping bag combination. The Boy Scouts of America Supply Division has several good selections. If the liner is only for use during cold-weather camping, try the no-zipper model. This style helps even more to enclose that warm envelope of air around you (zippers and other openings are just another place for heat loss). This liner, as well as the other sleeping items, should be washed often. Keeping your sleeping equipment clean and dry goes a long way toward keeping you warm.

### Controlling Moisture in Sleeping Bags

Frost forms when moisture hits the freezing point. A double bag passes moisture more efficiently. Frost will usually form between layers—not inside insulation as with the single bag.



### Sleeping Attire

Keeping your feet warm is usually the biggest problem when sleeping in cold weather. Before retiring, be sure your feet are as dry as possible. This can be done by "dry" washing with a good foot powder. The best foot powder contains a high percentage of aluminum chlorohydrate. This substance dries the skin and shrinks the pores to reduce normal perspiration. Wear a loose insulator on your feet for sleeping. Socks can be used, but be sure they are dry and not

too tight. The constriction of a tight pair of socks is enough to cut off the warmth generated by the blood flowing to the feet.

Other sleeping attire is dictated by the degree of cold encountered on your outing. Use a "sleeping suit", either a clean dry set of long underwear or pajamas, when cold weather camping. The new long underwear made from a family of polymers that include polypropylene works quite well. A major attribute of these products is their ability to continue to wick moisture away from the body even at the skin temperature of a sleeping person. Since the conductive heat loss of water is high in cold weather camping conditions, this is of major importance.

Other clothing items normally worn for protection during the day can also be used at night, as long as they are clean and dry. Some of these include a stocking cap, which prevents heat loss that continues even during sleep; wristlets, which are very helpful in keeping hands warm; and a tubular scarf, which can be used for protection in several ways. A tubular scarf is an excellent choice since it can be made into a cap, pulled onto the feet, arms or even the legs if necessary.



Stocking cap

## NOTES:

## **COLD WEATHER REVIEW**

Cold weather camping as defined by BSA is "camping in weather where the average daily temperature is below 50 degrees Fahrenheit and conditions are cold, wet or windy."

The hints listed below are in a random manner. There is no order of importance to the list, just some suggestions that have proven true for me over the years.

### **CLOTHING**

1. Layer your clothing. Wear several layers of lighter clothing instead of one heavy layer. This way you can better regulate the amount of insulation. If you get warm you can take layers off and add some more clothing layers if you get cold.
2. Keep yourself dry, both from the weather and perspiration.
3. Wear loose fitting clothing, to optimize insulation.
4. Remember when buying clothes for cold weather that wool retains most of its insulation properties when wet, while cotton loses most of its.
5. There are also excellent manmade fibers and insulations that retain their insulation properties as good as or better than wool. Other benefits include light weight, wide design options & wind-blocking.
6. Remember your rain gear is water proof and will not allow perspiration to exit. During rainy weather change your clothing several times a day.
7. Athletic shoes and nylon hiking boots do not provide enough insulation. You should wear either mukluks, water-proofed leather hiking boots, rubber overshoes or rubberized boots.
8. Waterproof your leather hiking boots with the appropriate commercial treatment. Be sure to use only silicon-based products on leathers which require it. Check the care tag that came with the boots.
9. If you choose to wear rubberized boots, remember they do not allow for ventilation, therefore you will need to change your socks several times a day. Also you may want to get some felt inserts for insulation.
10. Wear a pair of cotton and a pair of wool socks to increase insulation and take the perspiration away from your feet.
11. Pull trouser legs over top of shoes to keep out snow. You may want to use nylon gaiters (leggings), or tie or tape them to make sure of the seal.
12. Wear mittens instead of fingered gloves when you do not need independent use of your fingers. This will allow the fingers to help keep each other warm.
13. Use a pair of socks to cover hands if mittens get wet.
14. Wear a stocking cap or other warm hat. One that covers the ears and neck area is particularly effective. Remember, most heat loss is through the head. Wearing a warm hat warms the rest of your body, too.
15. Wear a scarf to reduce heat loss around the neck. Use a "ski mask" or scarf over your face for protection from the cold and wind.
16. In an emergency use your neckerchief to cover your ears.
17. If you need a fire to keep you warm you are not dressed properly. If the heat can get to your body, so can the cold.
18. Paper is a good insulator and can be wrapped around the body (under your clothes) to add insulation.

## BEDDING DOWN

1. Natural fiber sleeping bags do not maintain their insulation properties when damp, down bags also fit here. A 3 to 4 pound synthetic bag will take care of most of your needs.
2. A mummy style bag is warmer than a rectangular, as there is less space for your body to heat. Also, most mummy bags have a hood to help protect your head.
3. If you only have a rectangular sleeping bag, bring an extra blanket to pack around your shoulders in the opening to keep air from getting in.
4. Do not sleep with your head under the covers. Doing so will increase the humidity in the bag that will reduce the insulation properties of the bag and increase dampness.
5. Remember to air out your sleeping bag and tent, when weather permits. Perspiration and breath condense in the tent at night and the water will reduce insulating properties of your bag.
6. Wear a stocking cap to bed in order to reduce heat loss.
7. Wear a loose fitting hooded pull over type sweatshirt to sleep in.
8. Make a loose fitting bag from an old blanket or carpet padding to put both feet in when in your sleeping bag.
9. A bag liner made from an old blanket, preferably wool, will greatly enhance the bags warmth.
10. Insulate yourself from the ground as much as possible to avoid cold spots at the shoulders and hips.
11. Use a sleeping pad of closed cell foam instead of an air mattress.
12. A good rule of thumb is that you want 2 to 3 times the insulation below you as you have over you.
13. Use a ground cloth to keep ground moisture from your bag. Your body will warm up frozen ground to a point where moisture can become important.
14. Space blankets, if used as a ground cloth, will not reflect the body heat. Instead it will conduct the cold from the ground to your body.
15. Cold air will be above and below you if you sleep on a cot.
16. Put a hand warmer (in a sock) at the foot of your sleeping bag before getting into it.
17. Fill a canteen with hot water (not boiling) and place at foot of bag to keep warm. Be careful with plastic canteens.
18. Exercise before bedding down to increase body heat. This will help to warm your bag quicker. Be careful not to start perspiring.
19. Remove the clothes you are wearing before bedding down if they are damp with perspiration. Put on dry clothing or pajamas before entering the sleeping bag.
20. Build a wind break outside your tent by piling up snow or leaves to a height sufficient to protect you when laying down.
21. Hang your sleeping bag up or just lay it out, between trips, so the filling will not compress and lose its insulating properties.
22. Before you get out of bed bring the clothes you plan to wear inside your bag and warm them up some before dressing.
23. Place an empty capped plastic bottle outside your tent door for "night calls." This will reduce your exposure when you have to answer that call. Think twice before using it inside the tent, you do have a tent mate. Remember to empty the bottle away from the camp in the morning.

## ODDS AND ENDS.

1. If at night you get cold, let the adult leadership know so action can be taken before injury from cold weather health problems occur. In other words it's better to be kidded about forgetting your sleeping bag than risking hypothermia.
2. Organization and proper preparation is very important in cold weather camping. Good meals, proper shelter and comfortable sleeping arrangements make for an enjoyable outing.
3. Drink 2 quarts of fluids per day besides what you drink at meals.
4. Learn to recognize and treat cold weather health problems. These include frostbite, hypothermia, dehydration, chilblains, trench foot, snow blindness and carbon monoxide poisoning.
5. Use the buddy system to check each other for cold weather health problems. Notify the adult leadership if symptoms do occur.
6. If you feel cold gather some wood or do some other type of work. Working will help warm you.
7. Eating ice or snow can reduce your body temperature and it is not pure. Don't eat it.
8. Snow and ice can be used for drinking water but only after boiling.
9. No open flames (candles, matches, etc.) inside the tents. Wiggling your toes inside your boots will help keep feet warm. If your feet get cold put on a stocking cap.
10. Take and wear dark sunglasses if snow is in the forecast. The glare of the sun off the snow could lead to snow blindness. The sunglasses will reduce the glare.
11. Use the solid fuel hand warmers. They are cheaper and you can light them yourself. Adult leaders must handle all liquid fuel.
12. The solid fuel hand warmers tend to have a flair up of heat after burning for a while and then they start to cool down. Placing them in an old sock will help to protect you from this "hot spot".
13. Keep off ice on streams, lakes and ponds.
14. It takes longer to cook food in cold weather, so plan accordingly. Before going to bed pour enough water for breakfast into a pot. It is easier to heat the pot than a plastic water can.
15. Keep your matches in a metal match safe as plastic can freeze and break if dropped.
16. Gather twice as much fuel as you think you'll need for fires.
17. Carry tinder from home. It may be hard to find in snow or wet conditions.
18. Gather your wood and tinder for the morning fire in the evening so that you will be able to start the fire quickly in the morning.
19. Space blankets make good wind shields only. The metallic properties take over the insulation properties in cold weather and become cold conductors.
20. Carry extra plastic bags in cold weather. They can be used as personal wind shields and ponchos by slitting a hole in the top for your head to go through.
21. Carry extra matches because the more you need a fire to warm up the less likely you will be able to start one easily.
22. Flashlight batteries are affected by cold. You can revive a dead battery by warming it up near the fire.
23. You may want to take a bottle of propane into your tent with you at night. This will keep it warmer and make it easier to light your stove for breakfast.
24. Heaters inside your tent can lead to carbon monoxide poisoning.

## ***LAYERED CLOTHING SYSTEM***

Select the proper type and amount of clothing. Regulate your clothing according to your activity rate. This is the most effective way to ensure comfort. Pay attention to your bodies' signals. Don't wait until you are cold to put on more clothing. Act when you first begin to feel cooler.

Clothing layers:

- Long, thermal underwear. polypropylene
  - Shirt or inner layer
  - Sweater, light jacket
  - Wind or rain gear
  - Long, thermal underwear. polypropylene
  - Inner pants wool, wool blend
  - Wind or rain pants
  - Wicking inner socks polypropylene
  - Insulating socks wool or wool blend
  - Boot liners insulated insoles
  - Footwear, boots waterproof, loose-fitting, mukluks or snow boots
  - Head coverings
  - Gloves and mittens
- 

### ***TYPES OF COLD:***

#### **Wet cold: 50° F to 14° F**

The most dangerous. Wide temperature variations from melting during the day to freezing at night makes proper dressing difficult, and important. Damp conditions from melting snow or rain makes keeping dry difficult.

#### **Dry cold: 14° F to -20° F**

Ground is frozen and snow is dry and crystallized. Strong winds cause the most concern with keeping warm. Extra clothing layers and wind-proof outer garments should be added.

#### **Arctic cold: below -20° F**

Requires the most insulation and wind-proofing. Many materials change physical properties, becoming brittle. Only for the most experienced campers

## ***LOSS OF BODY HEAT***

### **Homeostasis:**

The body's process for maintaining an even temperature. The arms and legs are used as a radiator to remove excess heat from the body. This process dilates the blood vessels, allowing more blood to flow to the skin surfaces. When the body temperature drops, these blood vessels constrict, decreasing blood flow, and thereby, heat loss. This is why hands and feet get numb when cold, and why they're particularly vulnerable to frostbite.

Since your brain needs oxygen to function, your body can't cut off the flow of blood to your head in order to conserve heat. Consequently, much of your body heat can be lost through an uncovered head and neck.

Radiation. (55%) A major source of heat loss. Heat is lost directly from exposed skin and the head. The head may lose up to one-half of the body's total heat production at 40 degrees F, and up to three-quarters at 5 degrees F.

Conduction. (15% w/convection) Heat is lost through skin contact with cold objects, primarily the hands, and wet or tight clothing. Handling gasoline, and other super-cooled liquids, at low temperatures is especially dangerous.

Convection. Heat is lost from the wind carrying away heat from the surface of the skin. This includes wind-chill effects.

Evaporation. (21%) Loss from evaporation of sweat, moisture from the skin and lungs produces substantial heat loss. This is little that can be done about this. We need to allow for this by using breathable fabrics to allow this moisture to pass out freely.

Respiration. (2-9%) Heat lost from inhaling cold air and exhaling warm air.

## **COLD WEATHER CAMPING SEMINAR KILLER COLD QUIZ**

During their 1975 Christmas vacation, three teenaged boys from Oregon began a hike around 11,235-ft. Mt. Hood. When the good weather suddenly changed to a raging storm, the boys dug in. Seventeen days later, long after most people had given then up for dead, the three emerged from their snow cave. Despite their weakened condition, they walked off the mountain themselves.

Their survival was called a miracle: a miracle that might not have occurred if the boys hadn't known how to defend themselves from the cold. Hypothermia, the number one killer of outdoor recreationists, doesn't limit itself to mountain climbers. It selects its victims from the unprepared, often adding hunters and fishermen to its toll. Duck hunters seem to be particularly vulnerable.

What you don't know about hypothermia could kill you. Answer the questions below and review the correct answers carefully. You may learn enough to save yourself or your hunting partner from becoming a statistic.

### **QUESTIONS**

1. T F When a newspaper headline reads, "Hunters Die from Exposure" it usually means the cause of death was hypothermia.
2. T F Hypothermia is not likely to occur below the 4,500-ft. level
3. T F Down clothing provides the best protection against hypothermia.
4. T F Alcohol helps combat hypothermia by warming your spirits as well as your insides.
5. T F There is no need to be concerned about the danger of hypothermia until the temperature dips below freezing.
6. T F It's impossible for one person in a group to be dying of hypothermia when everyone else is warm.
7. T F Winter hunting and hiking trips are a good excuse to eat a lot as extra food produces extra heat to combat hypothermia.
8. T F Most hypothermia victims know they are having problems and can ask for help before their temperature falls to a dangerously: low point..
9. T F Vague, slurred speech is one of the symptoms of hypothermia.
10. T F If your hands and feet get cold, you should put on a hat..
11. T F Looking at a thermometer should help you determine if someone could be hypothermic.
12. T F Hypothermia is caused by several combined small heat losses unless you are plunged into cold water.
13. T F The primary function of good outdoor clothes is to heat the body.
14. T F A wool sweater will help keep you warm even when it's wet.
15. T F Shivering is an uncontrollable loss of heat from the body.
16. T F Duck hunters can provide a little extra protection for themselves by wearing life jackets with collars.
17. T F A hypothermia victim should be treated as soon as his symptoms are recognized.
18. T F Handling metal equipment without gloves can cause a significant heat loss.
19. T F The best field treatment for hypothermia is to strip off both the victim's clothes and your own, and let him share your sleeping bag to benefit from your warmth.
20. T F The best protection against hypothermia is prevention.

## ANSWERS

1. TRUE. Hypothermia is the official term for the rapid lowering of the body's core temperature. Exposure is an inexact term, but a more recognizable one because it is associated with cold.
2. FALSE. Hypothermia can occur at any altitude, including sea level. The causative factors are wetness and exhaustion combined with wind and cold.
3. FALSE. Down clothing is useless when wet. However, it provides excellent insulation when covered with windproof, waterproof gear.
4. FALSE. Alcohol can actually have the reverse effect and make the victim's condition more serious by speeding circulation of cold blood from the surface vessels into the body's core, lowering body temperature.
5. FALSE. Most hypothermia cases usually develop in air temperatures between 30 and 50 F.
6. FALSE. Hypothermia will often strike only one or two members of a group. Those not likely to become victims are the ones who are exhausted and not adequately protected from the wind and rain.
7. TRUE. A hunting or hiking trip in the cold is not time to diet. Steady nibbling on high energy foods will make you less vulnerable to hypothermia.
8. FALSE. Never expect the victim to recognize his own symptoms. When cold reaches the brain it deprives an individual of judgment and reasoning power. The victim may try to assure you he is perfectly O.K. right up to the moment he loses consciousness.
9. TRUE. Along with slurred speech, the victim may also suffer memory lapses and become incoherent.
10. TRUE. Heat loss occurs most rapidly through the top of the head. If your head is warm your hands and feet will stay warmer, too. A bare head can lose up to one-half of the body's heat production at 40 F. and up to three-quarters of it at 5 F.
11. FALSE. Looking at a thermometer when you think someone is too cold can be a fatal mistake. Look for these symptoms instead: Vague, slow, slurred speech. Uncontrollable fits of hard shivering, apparent unconcern for physical discomfort, fumbling hands, incoherence and memory lapses, lurching gait coupled with frequent stumbling, drowsiness, apparent exhaustion and unwillingness to go on.
12. TRUE. Little heat losses like taking your gloves off to adjust equipment, leaving the back of your neck unprotected, and letting your clothes get damp before you put rain gear on can add up to hypothermia.
13. FALSE. The body uses the fuel we feed it to beat itself and a thin layer of air next to the skin. The purpose of clothing is to trap that warm air close to the body and keep the wind and wet from carrying it away.
14. TRUE. While cotton, down and synthetic lose over 90% of their insulating value when wet, wool has the unusual quality of drying from within when wet.
15. FALSE. Hard shivering, one of the symptoms of hypothermia is an attempt of the body to warm itself up. It produces about the same amount of heat as running at a slow pace does.
16. TRUE. Both the neck and the back of the head are especially vulnerable to cold. Military records indicate that life jackets with collars helped men survive longer in the North Atlantic by protecting those areas from constant wave action. Still, death from hypothermia occurs very rapidly in icy waters.

17. TRUE. Since the body's temperature sometimes plunges downward very rapidly, there is no time to lose. The first step is always to get the victim out of the wind and into some type of shelter. Then strip the wet clothes off, get him into a sleeping bag, give him warm drinks, and build a fire.
18. TRUE. Cold metal conducts heat away from the body very rapidly. It is best to carry a pair of light-weight gloves to wear for handling cold equipment when it cannot be done with heavy mittens.
19. TRUE. When a warm object and a cold object came into contact, heat always flows from the warm object to the cold. Rapid rewarming of a hypothermia victim requires application of external heat to the body. Skin-to-skin contact is the best method of rapid heat transfer available in the field. This method is most efficient when you can warm the victim between two warm bodies in a double-sized bag.
20. TRUE. You cannot be vaccinated against hypothermia, but carrying extra clothing as well as emergency gear and surplus rations, the right kinds of clothing, keeping your head and the back of your neck covered, putting on raingear before you get wet, and nibbling to provide energy, will all help prevent it.

How well did you do?

19-20 correct-Excellent. Your knowledge may one day save your life or someone else's.

16-18 correct-Very Good. You know enough to be on the alert for hypothermia and to be a real help to a cold companion.

10-15 correct-You probably know enough to be able to help when a problem arises, but you may not know enough to recognize it unless someone else points it out.

0-9 correct-Your knowledge of hypothermia may be too limited to keep you out of trouble or to help someone else who is in danger from the cold.

\*Written by Judy-Osgood for The American Rifleman magazine - November 1977 issue.

COLD WEATHER CAMPING SEMINAR  
TEST

- 1) To prepare your tent, you should
  - a) clear away snow so the tent will sit directly on the ground.
  - b) pile up snow or leaves so the tent sits on the pile.
  - c) choose a smooth icy patch so the tent sits on a smooth surface.
  - d) try to set your tent up under a tree for added protection.
  
- 2) When pitching your tent on frozen ground, you should
  - a) not use any tent pegs; they will only bend.
  - b) use regular tent pegs to hold down the rain fly; gear inside the tent will hold it down.
  - c) use large heavy nails to hold the tent and fly.
  - d) use chunks of ice and snow to hold down the corners of the tent.
  
- 3) When setting your campfire in cold weather
  - a) you won't need a rock fire ring, you can just pile up snow.
  - b) you should set up your fire under the dining fly so to protect it from going out in the snow.
  - c) you should make up a standard rock fire ring and surround it with wooden corduroy mats to cut down on mud.
  - d) you should set up your fire close to your tent so to be warm.
  
- 4) The best sleeping system is
  - a) a sleeping bag on a cot.
  - b) a pad under each person and a sleeping bag with a wool blanket on top.
  - c) an insulator that covers the entire tent floor, a pad and a blanket enveloped inside the sleeping bag.
  - d) an air mattress with a blanket and a sleeping bag
  
- 5) Before going to bed, it is best to
  - a) towel dry and get into what you think you just took off because it's warm.
  - b) go to the bathroom, towel off and put on a sleeping suit.
  - c) take off all of your head gear.
  - d) not to eat anything at least two hours before.
  
- 6) Your body loose heat through...
  - a) Conduction
  - b) Radiation
  - c) Convection
  - d) all of the above
  
- 7) Shivering
  - a) is a sign to start moving
  - b) doesn't mean anything
  - c) warms the whole body
  - d) none of the above

- 8) The most efficient part of your radiator system is the
  - a) Heart
  - b) Lungs
  - c) Head
  - d) Limbs
  
- 9) The best type of clothing to wear is
  - a) Fleece
  - b) Polyester
  - c) Wool
  - d) both a and c
  
- 10) What is HYPOTHERMIA?
  - a) when your body temperature rises above normal.
  - b) when your body temperature drops below normal
  - c) when you can not sit still in cold air.
  
- 11) What are some symptoms of HYPOTHERMIA?
  - a) shivering, confusion and blue skin
  - b) sweating, increased heart rate and feeling warm
  - c) chest pain, headache and sore throat
  - d) both a and b
  
- 12) What are treatments of HYPOTHERMIA?
  - a) take two aspirins and rest
  - b) undress the person and put them in a cold shower
  - c) drink an alcoholic beverage and jump up and down
  - d) shelter from the cold, wrap in sleeping bag and give warm fluids
  
- 13) How do you prevent HYPOTHERMIA?
  - a) keep dry and avoid rain, wind and snow
  - b) roll around in the snow to coat yourself
  - c) practice standing in the snow and rain
  - d) think warm fuzzy thoughts
  
- 14) The victim should be hospitalized when
  - a) person is shivering and feeling cold
  - b) confused and blue
  - c) numb and stiff
  - d) all of the above
  
- 15) What are some signs of FROSTBITE?
  - a) skin is beginning to whiten and person is shivering
  - b) skin appears to be blue, numbness and clumsiness
  - c) passed out and stopped breathing
  - d) death

- 16) The best cure for injuries is
- a) a pot of boiling water
  - b) a good diet
  - c) prevention
  - d) a tourniquet and sling around the neck

- 17) The first affected by exposure is
- a) lungs
  - b) bare extremities
  - c) hair
  - d) someone else

- 18) Alcohol helps combat HYPOTHERMIA.
- a) absolutely
  - b) absolutely not
  - c) sometimes
  - d) maybe

19) MATCH THE CHOICE IN COLUMN 1, WITH THE ANSWER IN COLUMN 2

1. carbohydrates	A	10% of your intake 20%
2. fats	b	of your intake 70% of
3. protein	c	your intake 100% of
4. food and water	d.	your intake
1. Carbohydrates	a.	meat, peanuts
2. Starches	b.	milk, fruit
3. Fats	c.	candy, sweets
4. Sugars	d.	bread, cereal, flour, potatoes
5. Protein	e.	Starches
1. Breakfast	a.	Protein
2. Lunch	b.	day starter
3. Dinner	c.	high carbohydrates, low preparation,

## **PILGRIMAGE & ENCAMPMENT SPECIFIC RULES**

The Pilgrimage and Encampment are located on the grounds of the Valley Forge National Historical Park. The National Park Service has specifically identified their requirements for the use of their facilities. Some of these requirements are already part of Boy Scouts training and expectations (which the National Park Service wants EMPHASIZED); others are specific to the Pilgrimage and Encampment activities taking place at this Historic site..

We are guests of the National Park Service and, as such, Scouts and Scouters are expected to follow these rules!

### Heating and Cooking

- Wood fires are PROHIBITED
- Charcoal may be used in above-ground grills ONLY
- No heaters or open flames in tents
- Follow BSA Guidelines for safe use of stoves and lanterns:
  - Proper adult supervision
  - Use in well ventilated area
  - Extinguisher available
- Secure fuel in a safe area.
- No unattended fires or heating devices
- Cooking must be done in a well ventilated area

### Disposal Issues

- DO NOT put charcoal or propane bottles in trash dumpster
- Dispose of charcoal in appropriate marked containers ONLY (near HQ tent).
- Dispose of empty propane bottles in appropriate marked containers ONLY (near HQ tent) – or take them home with you.

### Clothing

- Absolutely NO sneakers, steel-tipped, or porous fabric shoes are to be worn by Scouts or Scouters while on the Park grounds
- Dress appropriate for the weather conditions

### Shelters

- Use four-season tents, canopies, cook areas.
- Tents need to protect Scouts from the elements
- Tents, canopies, and other shelters must be securely staked or tied down
- Canopies may be closed in

## **PILGRIMAGE & ENCAMPMENT SPECIFIC RULES (continued)**

### Injuries/Illnesses/Emergencies

- All injuries/illnesses/emergencies are to be reported to the emergency personnel immediately.
- Emergency personnel will be on site around the clock.
- Go to Headquarters tent at Encampment site
- Contact Pilgrimage Staff person during pilgrimage (red Staff coat, dark green hat)
- Ambulance staffs are on standby.
- The most likely illness/injury to occur at the Pilgrimage & Encampment is cold-related.
- Ensure that your Troop is dressed properly.
- Treat any cold Scouts/Scouters as emergencies – contact emergency personnel
- Headquarters tent is heated for warming of Scouts and Scouters

### Off Limits Areas

No one is allowed to be in or around the following areas:

- House Areas
- Barn Area
- Lower Area
- Woods

## COLD WEATHER INJURIES/ILLNESSES

<b>FROSTBITE</b>		
Cause	Symptoms	First Aid
Freezing of tissue, normally due to exposure below 32 F.	Numbness in affected area. Tingling, blistered, swollen, or tender areas. Pale, yellowish, waxy-looking skin.	Warm affected area with direct body heat. Consult with medical personnel ASAP. DO NOT thaw frozen area if treatment will be delayed. DO NOT massage or rub affected area. DO NOT wet area or rub with snow or ice.
<b>CHILBLAIN</b>		
Cause	Symptoms	First Aid
Repeated exposure of bare skin for prolonged periods to temperatures from 20 to 50 F (for those not acclimated to cold weather).	Swollen, red skin (or darkening of skin in dark-skinned people). Tender, hot skin, usually accompanied by itching.	Warm affected area with direct body heat. DO NOT massage or rub. DO NOT wet the area or rub with snow or ice. DO NOT expose affected area to open fire, stove, or any other intense heat source.
<b>IMMERSION FOOT (trench foot)</b>		
Cause	Symptoms	First Aid
Prolonged exposure of feet to wet conditions at temperatures between 32 and 50 F. Inactivity and damp socks and boots (or tightly laced boots that impair circulation) speed onset and severity.	Cold, numb feet may progress to hot with shooting pains. Swelling, redness, and bleeding.	Rewarm feet by exposing them to warm air. Evacuate victim to a medical facility. DO NOT massage, rub, moisten, or expose affected area to extreme heat.
<b>DEHYDRATION</b>		
Cause	Symptoms	First Aid
Depletion of body fluids.	Dizziness. Weakness.	Replace lost water. Water should be sipped, not gulped. Get medical treatment.
<b>HYPOTHERMIA</b>		
Cause	Symptoms	First Aid
Prolonged cold exposure and body heat loss. May occur well above freezing, especially when a person is immersed in water.	Lack of shivering. Drowsiness, mental slowness, lack of coordination. Can progress to unconsciousness, irregular heartbeat, and death.	Strip off clothing and wrap victim in blankets or sleeping bag. Get victim to a heated location and medical treatment as soon as possible.

## Cold Weather Camping Overview

Camping and other outdoor activities taking place in cold weather require additional preparation and consideration. Although we break down the Cold Weather Camping Seminar into five categories – Health & Safety, Winter Campsites, Winter Clothing, Cold Weather Cooking, and Bedding – there is one thread that weaves through each presentation. It is represented by the acronym COLD. You will likely hear this acronym in each session. It should be remembered and understood by each scout and leader. COLD stands for:

**C**lean: the person, their clothing, and equipment MUST BE clean

Do not **O**verheat: when bundled up it's easy to do, and overheating leads to chills

**L**ayers: numerous items of clothing/bedding are better than one

**D**ry: stay dry; moisture draws heat