

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

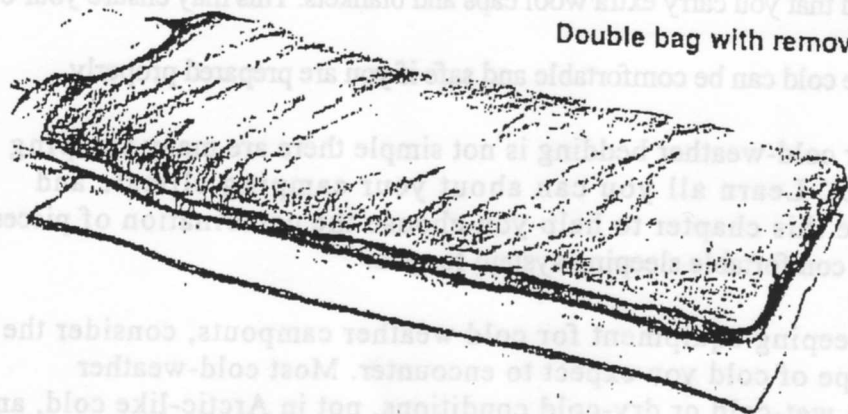
The insulation under the sleepers is the most critical concern. Good insulation should cover the entire floor of the sleeping quarters rather than just a small area under each sleeper. With the floor of the shelter completely covered, you do not have to worry about sleepers rolling off the pads. Using 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.

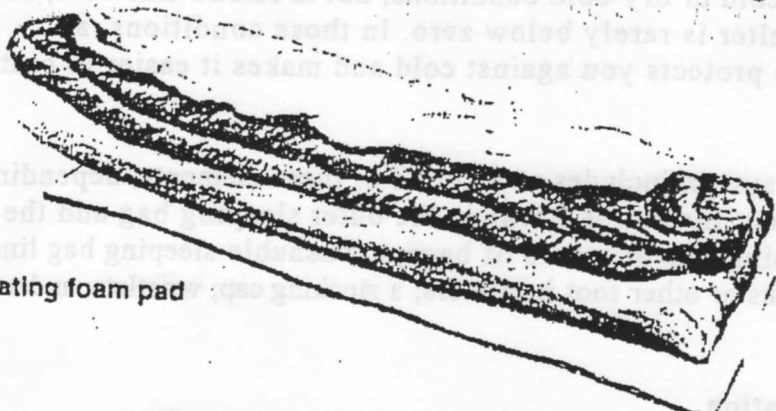
Sleeping Bags

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

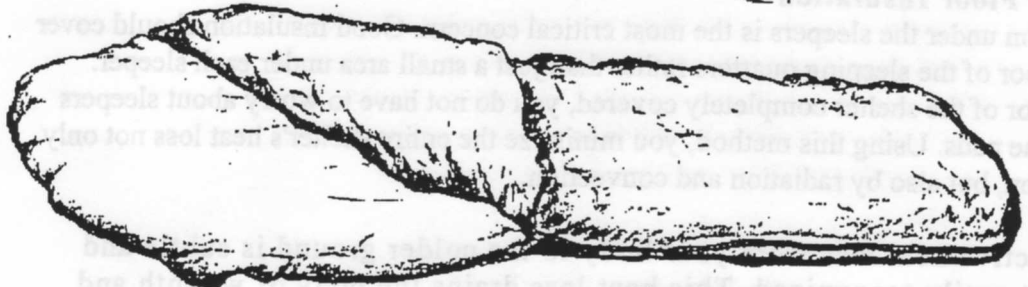
bags; synthetics pick up little moisture, and can be washed easily. If you use a down bag in combination with other sleeping bags, always make sure it is the bag closest to the body. The warm air leaving your body is moist. As it cools, it loses its ability to hold moisture, and the moisture condenses.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



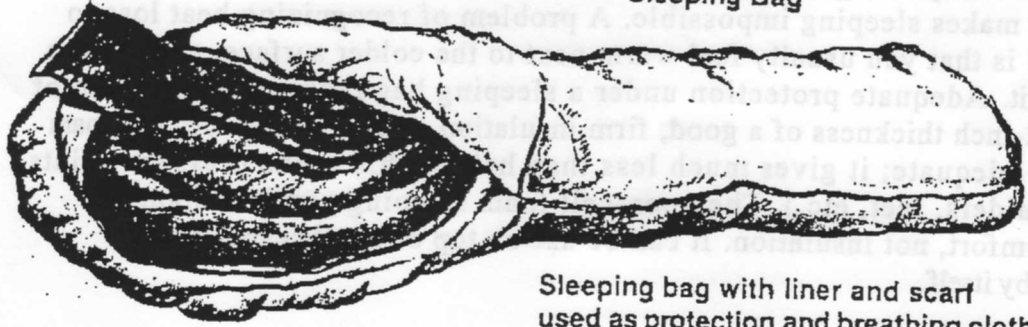
Double bag with removable liner



Insulating foam pad

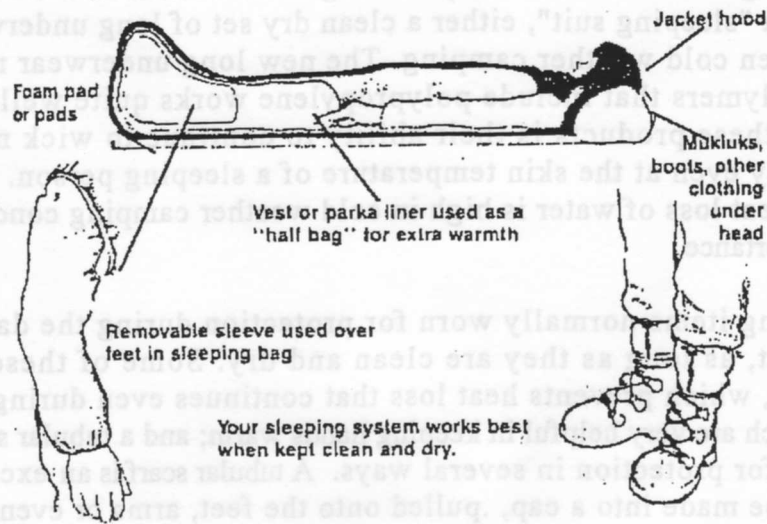


Sleeping Bag



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.

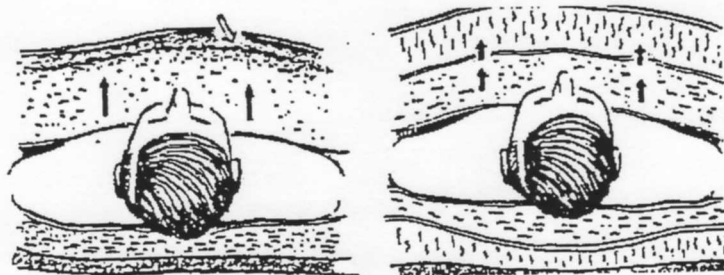


Washable, Insulating Liner

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:



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