

American Alpine Institute^{Ltd.}

SIERRA NEVADA & COLORADO ROCKIES WINTER MOUNTAINEERING EQUIPMENT LIST ©Copyright 2004, American Alpine Institute

It is essential that you do a careful job in selecting and preparing your equipment for this course. The weather in the mountains is a major objective hazard, even in the summer, and in the winter it can present extreme challenges to survival. Temperatures are typically in the teens but can easily drop to -10 to -20 F and be accompanied by high winds and blowing snow. These conditions, in combination with the long periods of inactivity required to belay a climber on a difficult pitch, can easily lead to problems of hypothermia or frostbite. We can teach climbing in difficult conditions, but we cannot teach hypothermic students. For your own safety and that of the group, please take this list seriously and come in good physical condition. If you have any questions about choosing your gear, feel free to call the office and ask for advise.

AAI's Winter Mountaineering program is usually conducted in either the Colorado Rockies or in the Sierra Nevada. In both of these areas we will be spending a lot of our time in the backcountry. When equipping yourself for winter backcountry travel you should pay equal attention to the need to have adequate protection from the elements as well as the necessity of traveling light. As a general rule you should not bring more clothing than you can wear at one time. With the exception of extra socks and hand wear, avoid duplicating layers. Backcountry skiing and climbing is always a challenge. Travel light to avoid making it an ordeal.

On this program AAI supplies the group climbing gear such as ropes, protection, etc. You need only bring the personal technical gear outlined below. Likewise, AAI supplies snow saws and shovels. If you already own snow shelter building tools, please bring them as it is generally best to become accustomed to using your own equipment.

CLOTHING

The clothing you choose should be warm, lightweight, fast drying and allow good freedom of movement. Synthetics such as polypropylene, pile or fleece, are lighter than wool and also dry much faster. For ice climbing and winter mountaineering the layering system, using several thin insulating layers and a Gore-Tex shell, performs well.

Boots - Plastic climbing boots. All models designed for extended cold temperatures are adequate. Avoid the temptation to purchase boots too big for you. They may be slightly warmer but the performance, especially when front point cramponing, will suffer.

Gaiters - Required.

Socks - Wool or synthetic (no cotton). Bring two complete changes. Climbers frequently wear a thin liner sock, and one or two pair of thick socks depending on boot fit.

Long Underwear - Tops and bottoms, polypropylene or similar synthetic.

Pants - Plie or fleece preferred.

Warm Shirt - Wool or synthetic. Turtlenecks or shirts with a high, snug collar are recommended.

Pile Jacket - Plie or fleece.

Insulated Jacket - Down or synthetic, with an insulated hood. Should be able to fit over your pile jacket. We recommend a lightweight and very compressible down jacket with a hood.

Wind and Rain Parka with Hood - Gore-Tex or other waterproof breathable material required. Coated nylon is unacceptable. Your parka should be sized to fit comfortably over all your other clothes.

Rain Pants or Bibs - Gore-Tex or equivalent. Full side zips recommended for easy on and off.

Gloves - Polypropylene.

Climbing Gloves - Bring a pair of warm shelled gloves such as the Expedition Modular Gloves manufactured by Outdoor Research. Much of the time you will be climbing or skiing in either your lightweight polypro gloves above or these shelled gloves. Because of the technical nature of waterfall climbing, the needed dexterity requires the use of warm gloves.

Extra Mittens - Bring a lightweight pair of warm mittens as spares. A good example of this would be the Outdoor Research standard Modular Mittens. For most people these regular weight shelled mitts offer plenty of warmth. We do not recommend using OR's Expedition Modular Mittens or comparably thick mittens because of serious problems with dexterity.

Warm Hat - Synthetic is less itchy than wool.

Balaclava - Heavy wool, pile or fleece. A balaclava is a hat that can be pulled all the way down over the head to the shoulders. It completely covers the head except for an opening for the face. It provides excellent protection of the chin, ears and neck.

Lightweight Balaclava - Also required. Thin polypropylene recommended.

CLIMBING GEAR

AAI's Winter Mountaineering programs include at least two days on frozen waterfalls. The equipment needed for waterfall climbing can also serve as general mountaineering gear although an ice axe appropriate for waterfall climbing is usually considered too short for glacier travel. As there are no major glaciers in either Colorado or the Sierra Nevada, we recommend you bring tools appropriate to waterfalls, as well as a longer axe for use on snow climbs.

Ice Axe - For waterfalls 45-55 cm length. 50 cm is the preferred length for waterfalls. Tools with picks designed specifically for waterfall ice perform much better in this medium than those designed for alpine ice and snow.

Ice Axe - For snow climbing; 60-70 cm length.

Hammer Holster - Optional

Wrist Loops - Good, pre-sewn wrist loops are available commercially, or you can tie your own from about 5 feet of 3/4 or 1 inch webbing.

Crampons - Be sure all points on your crampons are sharp, and that the front points protrude a minimum of 1" from the front of your boot. Bring crampon adjustment tools.

Small File - For sharpening crampons and tools.

Climbing Harness - Be sure it fits over bulky clothing. Adjustable leg loops help in this regard.

Locking Carabiners - Bring two.

Climbing Helmet - Should be able to fit over your balaclava.

Belay/Rappel Device - Recommended are the Lowe Tuber or the Black Diamond ATC.

CAMPING GEAR

Sleeping bag - Rated to -20 F for programs in Colorado in December, January and February, and to -10 F for all California programs and March and April Colorado programs.

Sleeping Pads - 1/2 inch thickness minimum. Thermarest pads, either 3/4 length or full length, are recommended due to their excellent insulating qualities and comfort. 3/4 length Thermarest pad users should also bring a 3/4 length closed cell foam pad for their feet. A Thermarest repair kit should be brought by those using Thermarest pads.

Bivouac Sack - (optional) A lightweight Gore-Tex bivy sack is the thing to have when sleeping in snow caves or igloos.

Tent - A light weight 4-season two person tent is recommended. Please contact the AAI office concerning sharing tents with other participants. When deciding what tent to bring remember that it is worth trying to go as light as possible.

Stove - The lighter the better. We will probably be spending 3 or 4 nights in the field.

Fuel & Bottle - If your using a white gas stove plan on burning about 3/4 cup of fuel per person per day, or half this amount if you are not melting snow. * (As a reminder, fuel cannot be taken on airplanes.)

Cook Pot - A one quart pot with lid is fine if you are cooking alone, two quart is better if you plan to cook with somebody else.

Lighters - Bring two.

Eating Utensils - Spoon, cup (1 pint size) and bowl (1 pint to 1 quart size).

Water Bottles - Bring two 1 quart wide-mouth. One should be insulated, you can use OR Water Bottle Parkas for insulating your water bottles.

Thermos - Optional, a small thermos of tea can be nice on really cold days.

Pocket Knife - Swiss army style is good.

MISCELLANEOUS

Skis - For this program we recommend alpine touring skis and bindings. This type of equipment will allow you to use your climbing boots as ski boots. If you wish to use telemark skis and boots remember that you will have to carry your climbing boots in your pack (not fun) and will have to change boots back and forth with climbing activity (even less fun). AAI rents alpine touring gear, contact the office.

Ski Skins - Required for all skiers. Skins which use adhesive are recommended.

Snowshoes - If you do not have skiing experience, you may bring snowshoes instead of skis but everyone in the group must be using the same travel medium. Do not bring an extremely large pair. The smaller aluminum frame models such as the Sherpa Lightweight are recommended. They should be equipped with an integral snowshoe crampon, which is fairly standard. Wood frame snowshoes are not recommended.

Ski Poles - Adjustable poles are recommended. Avalanche probe poles are also a good idea whenever traveling in the wintry backcountry.

Summit Pack - 2000 to 3000 cubic inches recommended volume.

Large Internal Frame Pack - For use when we overnight in the backcountry. 5000 to 6000 cubic inches is about the right size.

Avalanche Transceiver - If you have a transceiver, please call AAI to confirm that you have a compatible frequency. If you do not have a transceiver, you can rent one from AAI.

Glacier Glasses or High Quality wrap sunglasses with 100% UVA/UVB protection.

Ski Goggles - Useful when conditions are very windy.

Headlamp - With extra batteries and bulb.

Sunscreen & Lip Protection - With a protection factor of at least 16.

Personal Medical Kit - For minor cuts, blisters, scrapes, etc.

Lighters - Bring two.

Eating Utensils - Spoon, cup (1 pint size) and bowl (1 pint to 1 quart size).

Water Bottles - Bring two 1 quart wide-mouth. One should be insulated, you can use OR Water Bottle Parkas for insulating your water bottles.

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Headlamp - With extra batteries and bulb.

Sunscreen & Lip Protection - With a protection factor of at least 16.

Personal Medical Kit - For minor cuts, blisters, scrapes, etc.

Toiletries - Half a roll of white TP, toothbrush, etc.

Repair Kit - Needle and thread, a small amount of adhesive tape, stove repair kit, Thermarest repair kit, 20 to 40 feet of light cord, crampon adjustment tools.

Food - AAI does not supply food on this program. You should plan on having lightweight food for at least three nights out in the field. For the remaining days bring plenty of quick, high energy lunch food.

Garbage Bags - Bring two or three large ones. They serve a large variety of uses.

Stuff Bags - Bring a few of varying sized to help keep your gear or food organized.

Camera - (optional) A small and lightweight range finder camera which can easily be kept in a handy outside pocket is recommended. Bring plenty of film.