

## Equipment for the summer alpine meet

### Keeping warm

I have never failed on a route because of my clothing, but I have certainly had a more miserable time. The secret to enjoying alpine mountaineering and ice climbing is to pay attention to the simple things, such as adjusting your layers.

The basic principle is to climb cool and belay warm. It can be difficult to stay dry in the alps - either sweat or cold will make you damp but try to stay dry at all costs even if it means moving more slowly! This is particularly important for those that have more body fat hence a slower metabolism and slower circulation because they warm up slower and cool down faster, plus a lower metabolism means there is less heat to dry out base layers. When climbing, long pitches can save time, but when the weather is nasty or cold, shorter pitches will help to keep everyone warmer.

### Keeping your body warm

A base layer and mid layer fleece with a waterproof over the top is usually enough when walking, but vary them to reduce sweating. When you reach your climb, or part way through the day, change into a dry base layer. Fleece and fiber pile are hard to beat. Modern soft shell windproof fleeces with waterproof membranes take longer to dry and do not provide as much insulation.

Carry extra warm clothing for when you stop moving and do not leave it too late; put an extra layer on before you are really cold. Make sure there is enough room to move in your waterproof jacket and trousers or salopettes and to put another layer on underneath, but they should not be too loose; cold air exchanges easily with the warm air inside. Cuffs and openings must keep the snow out and be easy to adjust with gloves on. A large hood is essential to pull over the top of your helmet or fleece hat and all the zip toggles must have a tag large enough to grab hold of with gloves on. Legs radiate less heat and sweat less, so good, well-fitting trousers are important. If required you can wear long johns underneath a thinner pair of trousers.

Removing your waterproof to add a layer when you are wearing a harness is a problem, instead try layering on top with a synthetic high loft insulated jacket (belay jacket) such as the ME Trango. If you need a small packed size and more warmth go for a down filled jacket, but if you want something easier to look after and insulates better in the wet then use synthetic fill.



### **Protecting hands**

Keep your core temperature up and your hands dry (so don't put wet hands into gloves). Your wrist has the third highest heat loss of the body so make sure your layers are long enough and make some fleece wrist-over's. Carry a waterproof shell glove or mitt and lots of thin and thick fleece gloves with sticky palms. Change them whenever they are wet and your hands cold (a new pair for every pitch when climbing). Avoid gloves with a floating liner because they are difficult to get on and off, and carry a pair of fleece mitts that are easily accessible at belays and for when it is really cold. Attach all gloves to your wrist by a keeper cord.

Putting on only thin gloves can actually make you colder. The addition of a thin layer of insulation actually increases heat loss through radiation until a thickness of about 1/4 inch is reached.

If you are doing a lot of walking with your hand on top of your axe, you will lose heat through conduction. Consider taping a piece of thin closed-cell foam over the top. Do not grip your ski poles or axe handle too tightly and keep 'hand warmer' packets handy for putting in gloves, and even your boots, or carry a charcoal warmer in your pocket. To warm cold fingers, place them on the back of your neck for a few minutes. Do not blow on your fingers or into your gloves, it will only make them damp.

### **Keeping your head warm**

Wear a fleece hat, balaclava or even a neoprene beanie under your helmet. A fleece neck gaiter or a fleece jacket with a hood will seal your neck and prevent heat loss during long belays.

### **Looking after your feet**

Your feet have little muscle bulk and it's much easier to keep them warm than to warm them up. On long belays, avoid standing on snow, weight your feet equally and stamp your feet when they start to chill. Try to minimise the body closing down the extremities by dressing according to the route and climate, and don't scrimp on leg protection.

Put your feet into warm boots, and keep your feet dry, even if it means changing your socks during the day. Wear gaiters. Foot powder with aluminium hydroxide can help to reduce perspiration.

### **Other equipment**

**Rucksacks:** A simple 45-55 litre rucksack with a lid or pocket and compression straps is big enough. You do not need crampon pockets and ice axe tubes etc, they just add weight and get caught on everything when climbing. A removable padded, lightweight waist belt is best for climbing.

**Eye protection:** Snow reflects a lot of the sun; even when the sun is not shining, the glare can be intense. Take sunglasses and goggles for navigating in a blizzard.

**Helmets:** Essential for alpine climbing: make sure your balaclava or fleece hat can fit underneath and it has an attachment for a head torch. Because of the amount of falling ice in a classic style helmet may be better than foam ones.

**Harnesses:** Make sure it will fit over all your clothing and you can go to the toilet wearing it.

**Ski poles:** Can be better than an ice axe when carrying a heavy sack or on easy angled safe ground. Buy a pair that can collapse small enough to fit inside your rucksack.

### **Boots:**

A good, well-fitting pair of boots with room for your toes to wriggle is essential for warmth. Leather boots are great on mixed routes, in less than arctic conditions especially in countries where the climate is drier because they provide a more precise feel. In general, the harder the climbing becomes, the lighter and more closely fitting the boot must be. This is because calf pump can originate from your heel rising up the back of the boot.

Boots suitable for alpine use will be stiffer and have a sharp edge to the sole for edging in snow.

To make the issue of boot/crampon compatibility more straightforward, boots and crampons can be graded according to their basic design and intended use. However, not all manufacturers follow the system designed by Scarpa.

### **Boot Compatibility**

Graded B0 to B3, dependent on the stiffness of the sole and the support provided by the uppers:

B0 – Flexible walking boots. Any boot that can be bent more than half an inch or so when standing on the front edge will be unsuitable for use with any type of crampon.

B1 – Stiff mountain walking boots suitable for occasional use with C1 crampons only.

B2 – Very stiff mountaineering boots suitable for use with C1 or C2 crampons only.

B3 – Fully rigid, winter climbing and mountaineering boots suitable for use with C1, C2 or C3 crampons.

**Crampons:** Crampons and boots make an integral unit and using the wrong type of crampon on the wrong type of boot can break them or make them fall off the boot. Modern hard mixed climbers use a boot (fruit boot in Canada) with a bolt-on crampon - if you climb M12 you will know all about them. A good general mountaineering crampon will do a better job on waterfall ice than a waterfall ice crampon will do in the mountains!

They are graded C1 to C3, depending on their attachment method and flexibility, but there are some models that seem to fit somewhere between C2 and C3. When buying crampons, always take your boots with you and fit the crampons in the store. Manufacturers' crampons are all slightly different - some suit narrower boots, some suit boots with a thicker sole, some won't fit boots with too much of a 'rocker' (curved section of the sole). For those of you with narrow feet, avoid crampons that have a wide spread between the front points and think about how long the points are...They may be too long.

C1 - Lightweight articulated or flexible, walking crampons with simple straps. Most commonly 10 point (2 front and 8 bottom). They are light, simple, and a good choice for occasional use (low angle snow, glacier crossing).

C2 - Articulated or flexible step-in crampons attached with a heel clip and toe strap. Most commonly 12 point (4 front and 8 bottom). They give the best balance between ease of attachment, walking comfort and climbing performance. They are a good choice for general mountaineering and low to mid-grade climbs.

C3 – Stiffer, or even fully rigid, crampons (although the latter are becoming rarer) attached with a heel clip and toe bail. They usually have 12 or more points, and adjustable front points (mono or dual). They are the best choice for pure ice and climbing performance, but a pain for general mountaineering/walking.

The front points: These should stick out by 25-35 mm. Front points that are drooped and the second row angled forward are more suited to ice climbing. The angled second points reduce calf strain by resting against the ice. Downward facing second points facilitate a more ergonomic walking motion

Best for ice climbing

Gives a more ergonomic walking action for general mountaineering

Horizontal front points are more versatile and work better than vertical ones for pure ice climbing, and two are better than one. Vertical front points tend to come out of the ice easier when the heel is raised. However, vertical mono points do provide more precision and are the best choice for very steep, hard ice and mixed ground. But, if the route is predominantly firm snow or ice, stick with two.

### **Tips for fitting and using crampons**

The sole of your boot should match the shape of the crampon, with no large gaps.

A correctly adjusted crampon should remain attached to the boot with the straps and clips undone.

Put crampons in a crampon bag and carry them inside your pack.

Trim the straps to a sensible length – long, dangling straps can get caught on the other crampon, but allow enough for gaiters.

Check before use. Ensure all boots and screws are tight, that straps are not cut or damaged, and that there are no cracks in the linking bar or crampon itself.

If you forget anti-balling plates, use a plastic bag and tape but don't expect it to last very long.

Carry some plastic ties, a strap, some cord and a small nut and bolt to repair crampons

### **Crampon attachment**

There are three main attachment systems:

Strap on - These may be useful in exceptional circumstances e.g. high altitude boots, because they will fit any boot, but they can restrict blood flow and are difficult to put on. They have been superseded by a plastic heel cup and plastic front bail and are found on most C1 crampons. They will fit on boots without a heel and toe lip.

Step in - A wire toe bail fits over the boot welt and a heel tension lever snaps into place on the heel welt. An ankle strap is also typically part of the system. It's a secure system for plastic boots and leather boots with plastic soles that have deep notches on toes and heels. However, without the proper boots, you risk losing a crampon in mid-climb. Correctly fitted, these are fast, vibration free and easy to use but, for most climbers, a mixed binding is better because they are easier to put on when your boots are iced up and safer as the welt wears out.

Mixed - These are simple and efficient and suitable for most things. The heel attaches with a lever similar to step-in bindings. The toes, however, attach with a strap and a ring or a plastic bail at the front. Because they don't require significant notches at the toes, these bindings can be used with lighter mountaineering boots, without heavy welts, and are used by most climbers, except specialist steep waterfall ice climbers.

Anti-balling plates are essential to prevent the build-up of snow on the underside of crampons, especially in wet snow conditions. The traditional remedy is to tap your crampons with your ice axe, but this is awkward, time consuming and distracting.

### **Choosing an ice axe**

Your ice axe acts as a walking stick; a self belay in the event of a slip occurring; and a brake if a slip turns into a slide. It can cut steps, bucket seats, snow bollards, large steps for resting or organising equipment, pits for checking snow profiles, emergency shelters, and can act as a buried axe belay. It is used for climbing ice, hard snow, frozen turf or even rock. No other piece of alpine equipment - and the skill to use it - is more important than an ice axe.

Most axes can perform most of these tasks, but no single design will perform all the functions equally well. An axe that is a convenient length for walking will be awkward to climb with, and a pick set at a shallow angle for an efficient self-arrest will not perform so well when climbing. How an axe feels is important - if it is not a comfortable fit in your hand and the swing nice then there will be little incentive to have it ready to use. Where the weight is distributed in the head will change the swing of the axe. Make sure the shaft is small enough for you to grip it with gloves on.

### **Ratings and standards**

There are two CE marks (European standard – see [www.uiaa.ch/?c=310](http://www.uiaa.ch/?c=310) for details) for ice axes:

B-rated (Basic) axes - intended for hill walking and glacier walking. They have shafts strong enough to use as a belay anchor.

T-rated (Technical) tools - intended for climbing and mountaineering. They are 30-40% stronger to allow for more extreme use and abuse (such as torquing the picks into cracks).

The picks also have B and T ratings with the T rated picks being thicker to withstand the side to side stress test. However they are not as good for penetrating ice. Whichever you use it is very difficult to break an ice pick.

#### **Walking axe**

Predominantly for use as a walking stick on flat or easy angle slopes, to arrest a fall, climb grade 1 gullies, and occasionally to cut steps.

Shaft - The length of an ice axe for general use has generated quite a debate over the last few years. The steeper the slope, the more experienced you are, and the more proficient you are on crampons, the shorter the axe can be. It does, of course, depend on the length of your arms and how tall you are - 55 to 65 cm is a good place to start. Longer axes are un-

wieldy and get in the way if the slope does become steep but are the best for walking on easier angled slopes.

Weight - Light is right and B rated is enough.

The head - Consisting of the pick and the adze, this should be a one-piece construction, with a gentle curve. If the curve of the head is too flat, it is unstable when self-arresting and climbing; if it is too steep, it will tend to snatch and can be wrenched out of the hand. The adze should be a good size, slightly scooped and at an angle that continues the curve from the pick. The hole in the centre of the head is for the attachment of a leash.

The spike - A long, sharp spike can be harder to hold if you need to ice axe arrest.

Materials - Most axes are made from composite materials that are extremely strong. Wooden axes may not be strong enough when used as a belay. Light is right, but be careful, ultra-light axes are not as good at penetrating hard snow.

General mountaineering axes

A general mountaineering axe is a balance between performance for walking and low-grade climbs (up to grade 3/4) or winter scrambles. It should be well balanced and have a natural easy swing.

The shaft - A length of 60 cm is a good place to start. It is usually straight, but gently curved models have a better swing and do not compromise their ability to be plunged into the snow although on easy angled slopes (less than 60) they have no advantage. A recent improvement to shaft design is the hand rest; it makes gripping easier and helps stop you banging your knuckles against the ice. The hand rest does not appreciatively affect plunging the axe into the snow. Make sure the diameter is small enough for you to hold with gloves on. Some ultra light models do not have a spike, which is not a problem in hard firm snow but they can become blocked and do not work well in ice.

Weight and strength - The axe will be T rated and have a stronger construction overall to make it versatile and durable. Light is right, but this must be balanced against how well it cuts into the snow. A rubber grip on the shaft will keep your hands warmer, dampen vibration and help you grip the axe, but it can make it more difficult to plunge into hard snow.

The head - A more curved pick gives better hooking, but shouldn't be too steep otherwise it may snatch during self-arrest. The adze may be larger, but still follow the curve of the head, for easier step chopping and digging.

**Note.** *There is a limited supply of axes/hammers/crampons/helmets for hire from Mountaineering Ireland, but these can also be hired in the alps.*

**PLEASE PUT IN YOUR HIRE ORDER WITH MOUNTAINEERING IRELAND BEFORE YOU GO!!**  
**016251112 [www.mountaineering.ie](http://www.mountaineering.ie)**

## Equipment Lists - Hut Night

**Clothing – whatever you chose it needs to be flexible to deal with a wide range of temperatures/physical activity – a traditional layering system works best. No padded ski jackets – too bulky.**

Shell Jacket with hood – Gortex or similar.

Over trousers – I find the most flexible is a pair of lightweight over trousers with leg zips – to go on if it's cold.

Base layers (one with long sleeves for glacial travel)

Mid layer

Warm layer

Long johns (depending on what you already have on your legs)

Socks

Underwear

Warm hat

Sun hat

Head torch – for the early morning starts and finding the loo in the night!

Sheet Sleeping bag liner – silk is lightest.

Thick warm mountaineering/ski gloves

Thin gloves

Sunglasses

Goggles (anti fog)

Sun Screen and Lip salve with UV protection

Small wash kit/pack towel – showers are not available in most huts.

Very small first aid kit to deal with headaches/blisters plus Personal medications.

Water bottle – min 1 lt.

Passport and Insurance number/details

Cash – CHF for paying for huts/drink

Lunch/snack foods – packed lunches can be got at the huts.

Luxury item! – PACK OF CARDS ?????

## Alpine Trekking/Walking/Mountaineering/Climbing

**What will I need to bring?** - Listed here are the essentials - this is not an exhaustive list.

- Thermals or suitable under clothing
- Insulating layers – at least one mid weight and one warm fleece layer
- General trekking trousers are recommended, not jeans though.
- Thick socks (several pairs)
- Spare fleece/insulated jacket
- Waterproof jacket (with a good hood)
- Waterproof over trousers or salopettes
- Helmet and harness
- Axe\*
- Crampons\*
- Climbing equipment\*\*
- Hat & balaclava plus spare
- Mitts & gloves - a thin pair, thick pair & big mitts over the top! Plus spares.
- Ski goggles (should have double lens to avoid misting up, you cannot see, or map

read without them in strong winds and snow).

- Whistle
- Compass - Silva type 4 recommended
- Maps and waterproof map case. For all walking courses you need a waterproof 1:50,000 or 1:25'000 map of the area
- Head torch, spare batteries, spare bulb or torch. LED lights are excellent for map reading at night but do not necessarily give a beam to see well ahead. Many torches now offer a combination of bulbs which gives great flexibility.
- Rucksack liner (or sturdy bin liner)
- Vacuum Flask & Water Bottle
- Box or bag for packed lunch.
- Survival Bag - Plastic type
- Blister kit/ small first aid kit
- Personal toiletries & medications
- Sun cream
- Sun glasses
- Spare towel
- Alarm clock

Note. There is a limited supply of walking axes and crampons for hire from Mountaineering Ireland, but these can be hired in the alps.

**PLEASE ORDER YOU HIRE EQUIPMENT FROM MOUNTAINEERING IRELAND BEFORE THE MEET!**

\*Axe and or crampons may not be need if no glacier or snow travel is planned, this would generally only apply to the trekking group.

\*\*Climbing equipment

Depending on the course you are doing please also include:

**Walking/mountaineering**

X2 Prussiks & x3 screw gate carabiners,  
X2 slings (120cm)

**Climbing (in addition to the above)**

Ice Hammer  
Belay device & screw gate carabiner,  
Set of wires/nuts,  
2-3 camming devices,  
X4-6 extenders  
X2 slings (120cm)  
Prussik cord  
Rope, Rock shoes, & additional equipment for personal use, if you plan to stay on and climb.