

Winter is on its way

The clocks have gone back, the sun is lower on the horizon and the polar front is moving further south with the result that the temperature is dropping - winter is on its way! From autumn through winter and into spring, the battle between the warmer moist air to the south and the colder, drier air to the north, produces the cold air flows and storms that bring the snow and ice to the hills of Ireland and the UK.

On a cold clear day with firm snow, winter mountaineering and climbing is possibly safer than in summer, because, the ground is frozen solid, you have spikes on your boots for grip and stones on the cliffs are frozen in place. The problem is, that it can all change in the blink of an eye. A sudden rise in temperature, a maelstrom of gale force winds, blizzards, zero visibility and numbing cold can turn a pleasant day out into a miserable experience. This series will help you to be more prepared for all that winter can throw at you.



The simple things matter

One of the secrets to enjoying winter mountaineering is to pay attention to the simple things. The first is to stay dry at all costs, even if it means removing a layer, moving more slowly or, whenever you stop putting a layer on to keep warm!

A base layer and mid layer fleece with a waterproof layer over the top is usually enough when walking, but vary the layers to reduce sweating yet stay warm enough. Carry a spare base layer and change it when you get really damp or before starting a climb. Fleece tops are hard to beat for warmth, but 'soft shell' fleeces take longer to dry and do not provide as much insulation. Carry extra warm clothing to put on when you stop moving but instead of removing your waterproof jacket put a synthetic insulated jacket such as the ME Trango, over the top. This is particularly useful when climbing and is then called a 'belay jacket'. Make sure there is enough room under your waterproof jacket to add a layer or two, but not too much space as cold air from the outside exchanges easily with the warm air inside. Cuffs and openings must be easy to adjust with gloves on. A large hood is essential to pull over the top of your fleece hat or helmet and all the zip toggles must have tags large enough to grab hold of with gloves on (you can always add your own with a bit of cord). Legs radiate less heat and sweat less, so good quality, well-fitting trousers are important. You can wear long johns underneath a thinner pair of trousers.

Keep your fuel tank full

Staying warm is not just down to your clothes it also affected by your energy levels, so eat a hearty breakfast and snack every 30 minutes or so. Slow-burning carbohydrates like grain bars, trail mix and honey sandwiches are best. Give up smoking and take in plenty of fluids because dehydration causes the capillaries in the fingers to shut down. Carry a Thermos, but to make it go further, fill your mug with snow and melt it with the warm drink. Warm drinks are psychologically beneficial but ultimately it is the energy content that keeps you warm not the temperature of the liquid.

Avoiding the 'hot aches'

Andy Cave describes the hot aches in his book, *Learning to Breathe*, "*As the blood began to creep back into my hands I bowed my head. It felt like small shards of broken glass were being hammered into my fingertips*". To reduce the chances of the hot aches keep your core warm and your hands dry. Do not blow on your fingers or into your gloves and avoid putting damp hands into gloves it will only make them wet. Instead to warm them up place them on the back of your neck for a few moments.

Your wrist has the third highest heat loss of the body and therefore need protecting. Try this test - put your hands in the air while wearing your hill clothes and see if your wrists are revealed. Some fleece tops and base layers have a thumb hole to stop the garment riding up the arms, but if the top doesn't fit well they tend pull on the shoulders. Make some close fitting wrist protectors from a tube of fleece and piece of elastic to fit over the thumb.

Carry lots of thick fleece gloves and a waterproof shell mitten or glove to go over them. change the inners whenever they are wet and before your hands are really cold. I carry a dry pair of gloves for every pitch when climbing. Attach gloves and mitts to your wrist by a keeper cord. Avoid gloves with a floating liner because they are difficult to get back on once you have pulled the liner out. A pair of fleece mitts that are easily accessible are great for belaying or when it is really cold. Put 'hand warmer' packets in the back of your gloves (or even in your boots) if its really cold. With the advent of leashless climbing, gloves with substantial wrist closure tabs that prevent the glove slipping from the hand are important.

Keep your head warm

Contrary to popular belief you don't loose more body heat through your head than any other part, of your body, it is just that it is exposed more. Wear a fleece hat or balaclava and use a neck gaiter made from lighweight fleece to prevent

heat loss from your neck when you are standing still or on a belay. Neck Gaiters are also useful to pull up over your face when the wind is really blowing.

Keeping your feet warm

Feet have little or no muscle to generate heat and it is therefore much easier to keep your feet warm than it is to warm them up when they have got really cold. To help don't scrimp on leg protection, wear Gortex gaiters and put your feet into warm dry boots at the start. If your feet get damp take the time to change your socks especially before climbing. Foot powder with aluminium hydroxide or deodorant can help to reduce perspiration. A thermal insole will prevent heat loss through the sole of the boot that is in contact with the snow and ice. A thin sock and thick sock will also help. If you are ice climbing the fit of the boot is critical, but the toes must not bang against the front when kicking the foot into the ice.

Therefore the secret is to stay warm and not to be lackadaisical about what you wear and not to be lazy because you can't be bothered to get your insulated jacket out, put dry gloves on or change a damp top.

Selecting a mountaineering ice axe

One or two poles are possibly better than an ice axe on easy angled ground, but only where the consequence of a slip is not dangerous. I walk with a single ski pole in winter to keep my other hand free to use an ice axe, which acts as a walking stick; a self-belay and a braking system if a slip turns into a slide. It can cut steps, bucket seats, snow bollards, large ledges 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 winter equipment - and the skill to use it - is more important than an ice axe.



No single design of axe performs all of the above equally well. An axe that is a convenient length for walking is awkward to climb slopes of more than 45° because you must lift it high in the air. A pick set at a shallow angle for efficient self-arrest will not perform so well when climbing steeper slopes. Make sure the shaft is small enough for you to grip it with gloves on and check that the swing is nice.

The correct length for an ice axe can send a room of climbers into a frenzied debate, but the answer is actually simple - the steeper the slope and the more

proficient you are on crampons, the shorter your axe can be. The actual length depends on how far your hands are from the ground - 60 to 70 cm seems a good place to start. Axes with a gently curved shaft have a better swing and do not compromise their ability to be plunged into the snow although on slopes less than 60 degrees they have no real advantage.

For general mountaineering the head of the axe should be of a one-piece construction, with a gentle curve. The adze should be a good size, slightly scooped and at an angle that continues the curve from the pick.

Selecting technical tools

Leashless climbing is the way forward! Leashless tools enable you to shake out more often and with two grips on the shaft, they make it is easy to swop hands. Another advantage often overlooked is that hands tend to get less cold as blood can flow more easily without hanging in leashes. If you are nervous of leashless climbing attach the axes via an elastic lanyard to your harness or try climbing with a leash on one axe.

Technical axes are usually about 55 cm long with a curve in the shaft and a reverse pick that is better for hooking, ice penetration, and easier removal from steep ice. Some climbers may prefer a straighter pick for alpine work where a bit of everything can be encountered. The adze will be more curved and more steeply drooped for hooking and torquing! For pure ice climbing two hammers may prove more useful, but if it is your only set of tools get an adze on one of them.

Choosing boots and crampons

Boots suitable for winter use have room for your toes to wriggle, are stiffer and have a sharp edge to the sole for kicking into hard snow. Any boot that can be bent more than half an inch or so when standing on the front edge will not work well with any type of crampon but more importantly will not perform well in hard snow when not wearing crampons.

Crampons and boots make an integral unit and the wrong type of crampon on the wrong type of boot can break the crampon or cause them fall off the boot. There are three broad designs:

- **Lightweight flexible walking crampons with simple straps.** Most commonly 10 point. They are light, simple, and a good choice for low angle snow.
- **Articulated step-in crampons attached with a heel clip and toe strap.** Most commonly 12 point. They give the best balance between ease of attachment, walking comfort and climbing performance. They are a good choice for general mountaineering and even low to mid grade climbs.

- **Stiff crampons attached with a heel clip and toe bail.** They usually have 12 or more points. They are the best for pure ice climbing, but a pain for general mountaineering/walking.

The front points should stick out 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 vertical ice. Second points that are vertical facilitate a more ergonomic walking motion and are better for all round mountaineering. Horizontal front points are more versatile and work better for general-purpose use than vertical ones.

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.

If you have any questions please contact the training Officer for Mountaineering Ireland on alun@mountaineering.ie

