

Putting it all together

“Lead with your head not your arms”

In the previous two articles I examined how to stay warm, what axes and crampons to buy and how to avoid getting caught in an avalanche. Here I want to look at putting it all together to tackle an easy snow slope/gully from start to finish.

The day(s) before

A good winter mountaineer plans their day, prepares their gear; looks after their hands/feet, and retreats when the conditions on the route are poor. To help make my winter mountaineering, not only safer, but more enjoyable planning and preparations start days before. Not in a mega serious manner but check the previous day(s) weather forecast paying particular attention to wind speed and direction, temperature and whether rain or snow has fallen. Also keep your eyes on the previous days avalanche reports. Are they getting better or worse?

Based on the information gained, consider at affect these reports have on the venue. Have a few alternatives up your sleeve so that your mind is not fixated on a particular route that may not be in condition when you arrive. If the venue is new, phone a friend who has been there and ask questions about the venue and route especially the descent. The night before take important compass bearings especially for the descent in the comfort of your home and write them on the map for when the weather turns bad. I sometimes draw arrows showing the prevailing wind direction to help me see which slopes are likely to be loaded with snow and therefore avalanche prone.



Food and drink is prepared the night before and then, using a pre-prepared laminated list I pack my rucksack. I then unpack it again with the contents laid out in a corner of the room...why? Because in the morning I know that I will unpack my rucksack to check I have everything! Finally, crampons and ice axes are checked to see that they are sharp.

In the morning

Wake early and have a hearty breakfast, a few cups of tea or coffee and a pint of fluid. Plan to start walking as early as possible to make the best of the short winter days and to avoid people above you in the gully. Re-pack your rucksack, but keep your ice axe free so you can tuck it away safely in the car.

I usually let someone know where I am going or leave a note in my car windscreen.

During the drive

Talk through the day with your partner(s), ensuring you have got all your gear and agree on your interpretation of the weather and avalanche report. Then talk through the route and agree a plan of action.

During the walk in

Slot your ice axe down the compression straps of the rucksack not the purpose-built carriers on the rear as it is easier to keep sharp points away from other people and it is more accessible. As you enter snowy or icy terrain tuck it down between your back and the rucksack for even easier accessibility.

Set off cool, you will warm up as you start moving and it will help to avoid sweating. Set off slowly, gradually increasing the pace as you warm up. Take in your surroundings. Feel the ground with your feet - is it frozen? Where is the snow line? Is there ice along the river? Can you see wind being blown from the ridges? Is it staying cold, as you get higher? These and many other questions will help you to make the correct decisions about your chosen route.

To help with balance use ski poles that collapse small enough to fit inside your rucksack and have large baskets, but remember they are not a substitute for an ice axe.

Don't put crampons on if the walking is easier without them on, and safety is not compromised. The reason for this is that they are heavy and slow you down by 10/15%. However, it is always better to put crampons on before you need to use them. Ice axe arrests are usually necessary because winter mountaineers have delayed putting on their crampons!

At the base of the snow gully

Get 'kitted up' for the climb before the slope steepens and where you are safe from falling ice and rocks. Have a snack and a drink, put on a dry base layer, your harness and helmet. Hang gear from the shoulder straps of your rucksack or dedicated gear racks because the rucksack often gets in the way of the harness racking system.

Put on crampons if needed by stamping a good platform in the snow and laying the crampons down carefully. Attach yourselves to the rope, shortening it using chest coils, until there is 1.5 to 2m between you. However, be aware that putting the rope on can sometimes provide an illusion of safety and you may be better running the rope out to a snow belay. For easy snow gullies a single 50 m rope will suffice, but if you want to escape it does not allow very long abseils.

Using crampons

When walking and climbing on moderately steep, but firm snow or ice that you cannot kick a big step into, it is more efficient and safer to use a technique called 'flat-footing'. This is in contrast to using a boot where you 'edge' the foot into the slope, however when wearing crampons edging only uses one row of points. Instead plant all the downward facing points into the slope and walk with your legs slightly apart. When the slope angle increases spread your feet and walk like a duck. As the angle increases further, zig zag diagonally, but with your toes pointing across or even down the slope. Eventually you will have to sidestep up the slope by planting your uphill foot firmly and swinging your lower foot well forward and over the upper foot. When used in descent, point your toes down the slope, flex at the knees and hips, keep your feet apart and do not dig your heel in - the rear points do not work like the heel of a boot. If you cannot place all your points in, turn around and front point down.



On slopes of more than 45 degrees flat footing is tough on your ankles, and front pointing is required. This is where only the front-facing crampon points are placed in the hard snow/ice. It is the most direct way to ascend a steep slope, but the hardest on your calf muscles. Use the weight of your boot and swing from the knee, not the whole leg. Once the front points have engaged, drop your heel so that the secondary front points make contact with the hard snow/ice, but keep your feet flat so your crampons remain horizontal.

On moderately steep snow/ice experiment mixing front pointing with one foot and flat footing with the other.

Using an ice axe

Wear gloves and keep your axe in the uphill hand. Contrary to popular belief it does not matter whether the pick is forwards or backwards. Pick forwards makes it easier to stab quickly into hard snow should you slip and pick backwards makes it marginally quicker to use in self-arrest.

There are a number of ways that an ice axe can be used effectively:

The Self-belay - Hold the axe by the head and plunge the axe shaft into the snow. If you slip, push the axe and with the other hand grasp the axe's shaft at the surface of the snow (to reduce leverage). The pick should be facing forwards so that if this fails you can plunge the pick into the hard snow.



When the snow/ice becomes 45 degrees or more use front pointing combined with:

Low and high dagger - The low dagger is a comfortable method for short stretches of steep hard snow/ice. Face the snow/ice and hold the axe on top of the adze. Push the pick into the slope at about waist or chest level. For the high dagger wrap your hand around the head of the axe with the pick facing into the slope.

The anchor position - This is what ice climbers do on steep ice. Hold the axe near the bottom of the shaft and drop the head of the axe behind your shoulder far enough to hit your rucksack and relax your wrist. Make a relaxed swing using the weight of the axe head to do the work, not your shoulder or body and progressively straighten the arm, keeping your shoulder, wrist and axe in a straight line. Now, front-point your feet upward and move both hands progressively up the axe shaft. Eventually, you will reach the dagger position, at this point, remove and place the axe again.



As the gully gets steeper

When the gully becomes steeper you will need to start 'pitching' rather than moving together. This requires one climber to create a belay then the other climber runs out the rope until they have to create a new belay. The most reliable and rapid winter belay is created using rock-climbing gear. The more you practice the more you will learn where it is worth spending time clearing snow to reveal cracks for protection and where it is better to climb on. The golden rule in winter is never climb past a good runner placement.

When a rock belay cannot be found, a buried axe or deadman is next best. The most important thing to realise is that their strength will depend on the consistency of the snow and the surface area of the object buried.



Buried axe – In undisturbed snow use the adze to dig a clean horizontal slot perpendicular to the direction of loading. The front, load wall, of the slot should incline slightly to stop the axe lifting out. Cut a very narrow slot running down from the horizontal slot. Make sure it is the same depth as the ice axe slot, to prevent the axe being lifted out. Attach a sling with a clove hitch or girth hitch at a point on the axe that ensures the surface area is the same on

both sides of the sling. Firmly place the axe horizontally, pick downwards, into the snow. Driving a ski pole, just back from vertical, through the sling in front of the horizontal axe will reinforce the anchor.

Deadman - They are most useful in slush or moist and heavy snow. It is best placed at about 40 degrees from the direction of pull with a deep slot to allow the cable to run directly to the belayer, but great care must be taken to ensure that you dig deep enough and that there are no hard layers to deflect the deadman.



Snow bollard - These are strong and reliable in good snow, but are time-consuming to build and best used at the top of the climb or for abseiling. To keep as much snow in the anchor the bollard should be horseshoe shape and not tear-dropped shaped. The trench should be at least 30 cm deep and the diameter of the mound at least one metre in good snow and even 3 m in poor snow. The bollard can be padded with cardboard, clothing or ice axes to stop the rope cutting through the snow. If it is used as an abseil anchor, the ice axes and padding can be removed when the last person abseils.

Belay seat

After creating your anchor, cut out a deep bucket seat two metres below the axe, with slots for your legs (at least the depth of your thighs) and a ledge for the rope to lie on. Many climbers advocate the use of a dynamic waist belay when using snow anchors, but if your snow anchor is well constructed and you have a good bucket seat then use a standard belay device.

At the top of the gully

Avoid climbing through cornices whenever you can. The snow slope below the cornice is likely to be avalanche prone and they do collapse on a regular basis. If you do have to tunnel through one, create a belay 10m horizontally to the side of the lead climber. Dig deep, preferably down to rock or ice for anchors.

Descending

It is never over until the 'calorifically challenged' lady sings, so put as much effort into planning your descent as you have into the ascent. Keep crampons and rope on until you are sure they are no longer necessary. Make sure you tell relevant people that you have returned safely and then enjoy a well-earned whisky!