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use a snow hole

Expert advice on the skills you'll need in the hills – courtesy of the instructors at Glenmore Lodge, Scotland's National Outdoor Training Centre

A SLEEPLESS, freezing cold night due to the wrong design of shelter... Thin roofs collapsing in warm weather... Serious headaches and lethargy caused by oxygen deprivation after several metres of snow drifted over the door and a thin veneer of ice formed on the hole... Burial while digging due to a partial depth slab avalanche... Waking up to find the roof had sunk to within a few inches of our noses and having to escape through a cold air corridor between the sleeping platforms...

I have had all these experiences using snow holes – from Scotland to Norway and the Himalayas. Planned overnight snow holing is not something to take lightly.

However, although winter expeditions can be a rewarding challenge, winter camping requires high spec equipment. Add that to your extra clothing and other cold weather gear, and the weight and volume of your pack goes up considerably. A tent can be pitched in 20 minutes with little effort at any altitude, regardless of the temperature, but pegs are often useless in snow. The wind in the Scottish mountains in winter has destroyed most of the best tents on the market – that is if they could be put up at all. Flapping material is not conducive to sleep, and condensation is worse in winter.

With all this in mind, snow holing might sound an attractive option – but it's important to be aware of all that's involved. Weight-wise, the equation is not as simple as one tent versus a shovel per person. Consider a saw (a personal favourite) as you can take out huge blocks from a hole or build an igloo and it makes a change from shovelling – but there is a knack to getting started and doing it well. An avalanche probe is useful, to check the depth of snow before you start. Digging is hard and hot work, crawling around on your knees for several hours, and several extra pairs of gloves are needed as they'll get soaked. As you are effectively burying yourself underground, a transceiver is

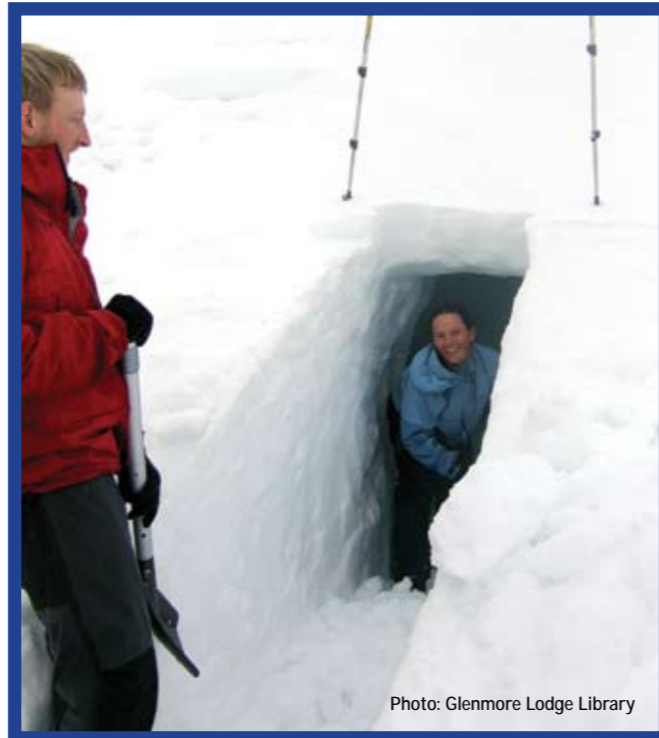


Photo: Glenmore Lodge Library

also a good idea – and finally, a bivvi bag over your sleeping bag and nightlight candles provide the finishing touches.

Seek out a snow bank about 20 metres high, a minimum of three metres deep and presenting minimal avalanche risk. The steeper the bank, the less work required. Small cols and stream beds often create the ideal terrain and aspect. On a map look for those places where just a couple of contours are close together and the slope is east to north facing as these are the lee slopes from the UK's prevailing wind and tend to accumulate a good depth of drifted snow; wind will also be less likely to be blowing straight into the hole. Consider though that wind or additional snowfall is most likely to drift over the entrance or to develop an avalanche hazard. In Scotland you need to be above about 900 metres to be more certain of sub-zero temperatures.

To create a home for two to four people, high up the bank so that the debris rolls down out of the way, mark out two doors about two metres apart. Each doorway should be around 1.5 metres high and 75 centimetres wide (try not to let them get too big as they will be more difficult to close in). Dig straight in from both doors for around two metres – maybe more if the slope is gentle – then turn in and dig towards each other. Once you have got a decent living space,



Photo: Glenmore Lodge Library

block up one of the doors completely. Lastly create a short tunnel around the entrance using blocks of snow; this helps reduce the likelihood of snow being blown into the hole. A rucksack on the inside of the entrance helps as well. Don't block off your entrance completely: you need air!

As warm air rises and cold air sinks, the secret in very cold conditions is to dig up into the bank so the floor or the sleeping benches are higher than the roof of the entrance, and to ensure the cold air can flow down and out of the hole. In warmer weather snow holing is less technical – just dig a cave but make a small hole in the roof to let the heat out and have a ski or trekking pole handy to keep it open from the inside. The internal design is a matter of personal preference and dependent on how hard the digging is. Smooth the roof to prevent dripping, dig an area to stand in, create little storage holes and leave a pile of snow blocks for water easily within reach of your bed.

Nigel Williams
Glenmore Lodge



Making a snowhole comfortable
Photo: Nigel Williams

Top tips for snow holers

- Always keep a waterproof layer on while digging but remove fleece layers etc as you get hot. Keep rucksacks well sealed and away from where the snow hole debris will end up.
- Use a powerful cooker to melt snow for water. If you're using gas, make an insulated cover for the cylinder from an old sleeping mat or bubble wrap and duct tape. If the cooker part of your stove emits heat downwards, place it on a heat resistant base such as a shovel to prevent it sinking into the snow.
- Keep the shovel inside the hole with you – you may need to dig your way out.
- It is advised that you should mark the roof of the hole with ski poles so other walkers won't fall through it. However a ski pole is quite likely to attract someone rather than encourage them to stay away!
- If there are several holes for a group of you, link them with a rope which can be followed into the hole should it become drifted over, and have a transceiver in each one.
- Take a few plastic bags for boots so you can keep them inside your bag or they will have ice in them by morning.
- Axes and saws stuck in the walls make good coat hooks for waterproofs.
- And lastly, when you leave your hole, put its coordinates into a GPS, block up the entrance and don't be tempted to use it as a toilet – you might need to return.

Human waste

Human waste should be carried out in winter as you cannot bury it in the soil. Otherwise, when the spring thaw sets in, there is the potential for a mass of waste accumulated during the winter to simultaneously be released into the drainage systems. This is of particular concern in the Northern Cairngorms where many popular sites drain into the Loch Avon basin.

For the past 10 years Glenmore Lodge has had a policy of carrying out waste on its winter expeditions and the Cairngorm Ranger service has a system in place for others to use as well. Both organisations would be happy to offer advice on this.

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Cairngorm Ranger Service: 01479 861703;
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Start with two entrances
Photo: Nigel Williams