

Quinzhee provides shelter from winter winds, cold

Shelter warms occupant using insulating qualities of snow and geothermal heat from ground

During the last several years, there has been a dramatic increase in the number of groups and individuals engaged in a wide variety of winter travel and camping activities.

Since winter is a potentially hazardous and unpredictable season, there has been a growing concern for the safety of those involved.

While a well-prepared and well-equipped party can handle an unexpected overnight stay in the bush under extremely adverse conditions, many inexperienced groups may be venturing into areas beyond their capabilities. A broken ski, a sudden storm, a pulled muscle or a simple navigation error could lead to disaster for the unprepared.

Unfortunately, not too long ago, such

Wilderness Survival



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an event occurred in the American northwest. A family travelling along the backroads made a wrong turn and their car became stuck in a snowdrift. Leaving his family behind, the driver headed cross-country in search of help. Tragically, he perished, while his wife and child were eventually rescued.

There are many methods of spending an unanticipated night in the bush, ranging from huddling around a fire to running about in a circle all night long. A great solution is constructing some type of winter shelter such as an igloo. However, the proper snow conditions and high level of skill required seldom make this a feasible option. There is another relatively simple type of shelter one can make: the quinzhee.

A quinzhee is simply a pile of snow — with you inside — that takes into account the insulative properties of snow and the geothermal heat characteristics of the ground below. Since snow can be collected over a wide area to make an adequate pile, as opposed to the construction of a snow cave or snow trench in deeper snow, enough snow for a quinzhee can be found almost anywhere.

No special equipment is required to pile and hollow out the snow under emergency conditions, but there is the potential of getting slightly wet when hollowing out the pile. Better to be a bit wet, than frozen solid.

Since snow traps air and creates many small dead air spaces, it is an excellent insulator if left unpacked. The survival of many small mammals that spend the winter months under a protective layer of snow attests to this fact. Sheltered from freezing temperatures, tiny mice, moles and shrews survive in this sub-nivean, silent world.

As well, the heat within the earth's crust is held in by the snow cover so that while winds rage above, the ground/snow interface area is a constant -6 to -3 degrees C. In many cases, protection from the howling wind is the most important single factor in

winter survival.

To construct a quinzhee, pick a relatively flat area with enough immediately available snow to make a pile approximately three metres wide, three metres long and two metres high. Check the area under the proposed pile for lumps and stumps. It's essential that all snow from the various levels and locations be thoroughly mixed. The cold, lighter upper level snow mixed with the denser snow closer to the ground causes the pile to sinter, or harden, in about an hour during cold weather. Do not pack snow when piling, since it is imperative to maintain as much trapped air space as possible. Admittedly, waiting an hour or so for the pile to harden is an inconvenience, but under survival circumstances, consider building a fire nearby, drink plenty of warm teas and set out markers to aid searchers. If camping out, take this time to enjoy a leisurely snowshoe hike or ski and explore the area.

After the pile is somewhat firm, proceed with the hollowing process. Remove enough snow so that the wall base is 25 to 30 centimetres thick. The ceiling should be slightly thinner. A number of roughly measured small twigs randomly stuck into the pile helps accomplish this objective. My

technique is to dig down, straight in, then excavate towards the ceiling, thus minimizing the danger of a collapse. You may also block the door from the inside to check for light or thin spots, and hollow accordingly.

Remove all snow from the floor area in order to maximize the geothermal heat radiating from the ground (.0084 calories per hour per square metre). If a sleeping platform is made, keep it small, ideally less than half of the inside floor space.

Once inside the quinzhee with the door blocked, the remaining floor area clear of snow and the insulated walls protecting you from the cold and wind outside, body heat, geothermal heat and a candle will warm the quinzhee to a relatively comfortable -3 degrees C. You are now experiencing life in the sub-nivean space that is home to small mammals — soundproof, protected from the howling winds, safe from storms and comparatively warm. If seen from the outside, a quinzhee lit up with one or two candles will actually glow like a lamp.

If tired, hungry, wet and attired in spiffy cross-country ski clothing, you certainly won't be comfortable. However, think how you would feel outside in a 20 km/h wind at -30 degrees C.