Quinzee
(aka - Snow Cave)

By Trigger

Being able to find shelter or to make your own shelter can mean the difference between life or death in a survival situation. During winter or in nasty cold environments, shelter becomes a necessity to survive as it will protect you from the elements. Many articles have been written on this subject: from the Alpha Tent to the debris huts. These make great shelters, but when it gets -30 or -40 degrees they just don't cut it anymore.

This is where snow shelters come into play. Whether you're winter camping or stuck in a survival situation, snow shelters can easily be built (if you have snow). Temperature inside a snow shelter can be 32 degrees or warmer even when the outside temperature is -40 degrees. There are many variations of snow shelters, but one that we use quite often is the "quinzee" also known as the snow hut.

Making a Quinzee

When snow is not deep enough or snow drifts cannot be found, the quinzee is ideal. It's basically a pile of snow in the shape of a dome with the interior hollowed out.

First, you have to select an area in the snow about 6 to 8 feet in diameter with no trees or big rocks in the way.

(This is our selected area for the shelter)

Then, you have two options for building the pile of snow:

- The hardest way to build the pile of snow is to shovel it and then dig out the interior of it later.
- The easiest way is by putting packs, gear and/or brush into a pile the size of the desired interior and then throw a tarp or poncho over it all. Next, pile the snow on top of your covered gear. Make sure that the interior is large enough to accommodate you. If several

people are going to be staying in the same shelter, then make it bigger. Don't forget that the bigger the shelter is, the harder it will be to warm it up and to keep it warm.

The snow should be heaped on, **don't** pack it!! If the snow is packed, you will loose the loft of the insulating snow. It's the same principle as the loft in sleeping bags, the more loft there is, the greater it will insulate. Once the snow has been piled, let the mound sit for a few hours. During this time, the snow will harden. (I believe this hardening process is called "sintering" but I could be wrong).

(Our heap of snow is now ready to be hollowed out)

Once the mound has sufficiently hardened, you can start hollowing it to create the inside of the quinzee.

- First, dig horizontally at the bottom of the mound to create the entrance. It is best to put the entrance on the side that is sheltered from prevailing winds as it will help to keep the cold air and wind out of the shelter.
- When digging the inside, make sure that the thickness of the walls taper from about 1.5 feet at the base to about 1 foot in thickness at the apex. A thin stick may be used as a probe to check wall thickness as you progress. If the walls are thicker it's better as they will insulate more.
- When removing the snow from the inside, don't throw it away. Heap it onto the exterior of the quinzee to thicken the walls or use the snow to make a windbreak in front of the entrance.
- There are two schools that differ when it comes to digging the inside of the shelter. Some people prefer to have an elevated sleeping platform to allow the cold air from inside to flow down and out of the shelter. Then there are people like me that prefer not to have an elevated sleeping platform and simply prefer to have the shelter resting directly on the ground with approximately half an inch to one inch of snow on the ground inside the shelter. I prefer this method because in extremely cold weather, the earth will actually serve as a source of heat.

(Hollowing the inside of the quinzee with our improvised digging tool!)

Once the hollowed area is large enough, smooth out the interior and make it as dome shaped as possible.
Then light a candle on the floor in the middle of the quinzee to glaze the inner surfaces. Let it burn for 15 to 20 minutes, longer if the shelter is bigger. This will cut down on dripping while you sleep.
Next, make a few ventilation holes through the top of the dome by using a long stick. Make sure the holes stay clear of snow and debris. Glazing the holes with a candle, the same way we did with the interior of the dome, can help keep the holes clear, but inspecting then regularly is still a must.
Once the glazing is done, reduce the entrance hole to a size which will allow access by crawling. Close up the entrance if it's too big. Keep the entrance as small as possible, barely big enough to let you crawl inside.

(Glazing inside the the shelter with a candle)

Once you're done working on your shelter let it sit for a while. This will allow the inside of the shelter to harden. Clearly marking the outside of the entrance with sticks or ski poles might be a good thing to do if you leave the site as snow might cover the entrance while you're away. It would be a good idea to cut lots of evergreen boughs or get any other insulating materials while you're waiting for the quinzee to harden. We will be using these for the floor of the quinzee later. When you come back, a thin layer of ice will have formed on the inside walls of the dome (hence the glazing). You can now bring those boughs in and make yourself a nice soft floor. Try to have several inches of insulating materials under you. Again, the more insulation you have, the more you'll be insulated from the cold ground.

When you go inside for the night, block the entrance with your packs, boughs or even with snow. This will help keep the inside warm. Lighting a candle will bring the temperature up real fast inside the quinzee. You might even have to blow your candle out if it gets too warm. While using the candle, be very careful as fire and boughs don't mix too well!!! ☺

(Inside the quinzee for the night...this should be a comfy one tonight)

Here are a few tips that might help:

- While shoveling and digging, you will get warm and wet. It's hard work and the effort will make you work up a sweat and could lead to hypothermia later on. So take some layers off while you're digging. Only dry clothes will keep you warm during the night ahead.
- While waiting for the snow to harden, remain active in order to stay warm, prepare a meal, collect some boughs, get a fire going. Don't just sit around!
- The thicker the walls of your shelter are, the more insulation you'll have.
- Bring your digging tool inside the shelter with you in case you have to dig your way out in the morning.
- You want to block the entrance of your shelter after you enter in order to keep the shelter warm but don't seal the doorway, leave some cracks and spaces to allow air to circulate.
- If it's freezing cold, wrap your boots in a plastic bag and take them into your sleeping bag (if you have one).
- Brush off all particles of snow stuck to your clothes before entering the shelter or they will melt and get you wet.
- If you leave the shelter at night, be sure to leave a light on to guide you back.

Don't light up a gas stove, trioxane or any other chemicals. This can give you a lethal dose of carbon monoxide even with ventilation holes. Candles are the maximum I would use.