

# HOW TO BUILD AN IGLOO

Article and Photos  
by Thomas Henley



*Above: Block size depends on how hard you want to work.*



*Ever since the first backpacker hoisted skins over a framework to make a tent, there has been little consideration given to any other form of portable shelter, despite tents being heavy, unheated, drafty, of questionable reliability in high wind, susceptible to flaming disaster, and generally a pain in the neck to put up, get into, stay in and carry home.*

An igloo, though only a poor dull white compared to the candy-colored glories of nylon, shares none of the problems or drawbacks of tents.

In the first place, igloos don't have to be backpacked. All a backpacker has to tote is a snow saw, machete or pruning saw. His igloo can't burn down, has little or no draft, doesn't get carried home and automatically self-disposes without leaving a scar on the landscape. But best of all, especially to the many half-frosted critics of camping, igloos are heated.

Heated? Oh, yes. Inside walls of

*Left. Finished igloo with smoke hole open and pack in cold air drain.*





*Each block must be sloped with a snowsaw or machete.*



*photo: Rick Nelson*

*With the igloo almost done and darkness closing in, one man inside carefully cuts slope for final blocks.*

snow are hot when the outside temperature is minus 20 degrees centigrade or more (not counting an often incredible wind-chill factor). Snow or ice at a constant zero degrees centigrade is warm compared to an outside temperature whose effective levels can be 30, 40, 90 or even 100 degrees colder. The walls of an igloo not only eliminate wind chill, but reduce radiant heat loss and actually draw "heat" from the snow to keep inside temperature close to 32 degrees Fahrenheit.

Many climbers, campers, skiers and snowshoers have died from exposure in tents, lean-tos and snow caves. Yet with a little knowledge about igloo building they might well have survived.

In exchange for not having to carry the weight and bulk of a tent, two men can spend an hour chopping out and constructing an igloo. It takes only a little training and know-how.

You must first find a location with wind-packed snow firm enough to be cut cleanly. Snow with a consistency resembling styrofoam works well; old sun-cupped snow does not. Select a center point and cut the first block down into the snow. If the block isn't firm enough, look elsewhere. If it is, measure off a four to five foot radius for the wall. Then pick a direction for the entryway: away from prevailing wind, downhill if possible, but never up-slope (heavy cold air flows at sur-

face level and should be allowed to drain away from the igloo). Next, cut a trench from your center point to well beyond your wall and use the blocks for the first circle.

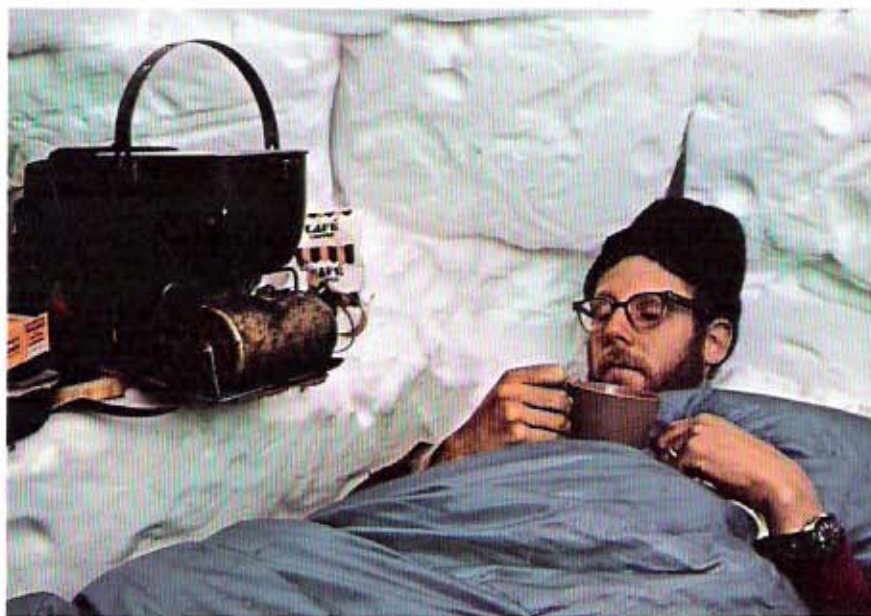
The trench will allow you to get a feel of the weight of the blocks and adjust their size to a comfortable, workable limit.

Once the first circle is laid down, taper off the first few blocks to create

a "ramp," allowing all the remaining blocks to be laid in a spiral, not in rows. Spirals are stronger and easier to lay.

After the wall is waist high, cut an entry hole in the bottom row and put one man inside to help hold the blocks while they are being tapered to fit. With proper tapering on the ends each block will stay in place by itself, even up near the top. To

*Rick Nelson having coffee in bed in the warm igloo while outside a fierce wind blows across the mountain peak.*





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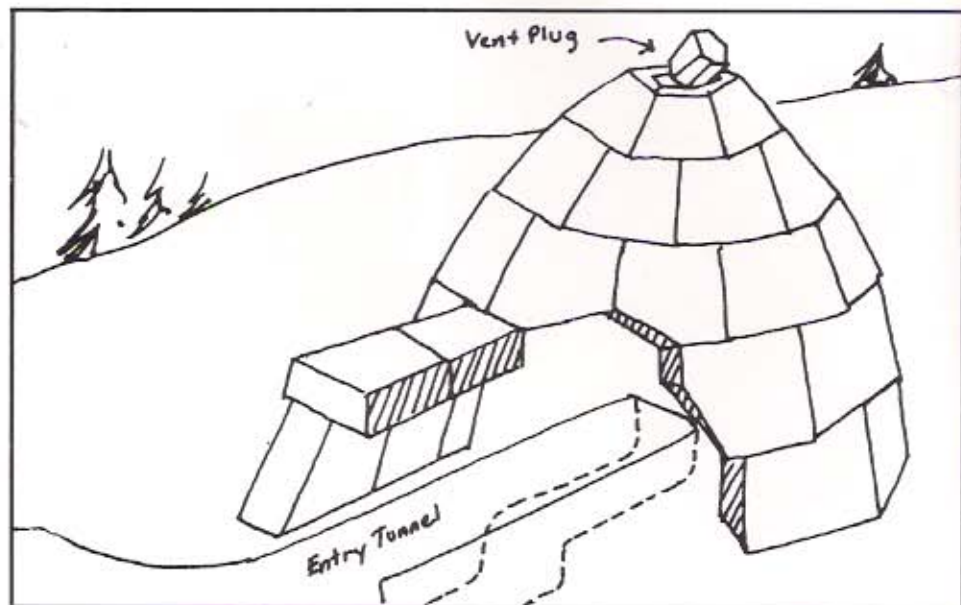
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*The wall: The height will almost always be greater than the radius, i.e., cone shape.*

achieve sloping walls, merely trim the top edge to form a line of sight between each block's top and the center point of the igloo.

Close off the top with a slightly larger block to allow cutting a cooking hole later. Then coat the whole structure with loose snow.

The key to building the igloo is getting the ends of each block tapered inward so that they will have maximum surface contact when in place. Done properly, the finished wall will turn into one solid block after a few hours.

Once the wall is up, don't quit. There are a few finishing touches that will make the difference between true comfort and possible comfort. First, build an arch at least four feet long over your entry tunnel. Look at the area where your blocks came from and decide whether cold air will run into the igloo. If so, cut a "drain" trench just like you would if it were water you wanted to flow away. Also make certain that you have to crawl *up* into the interior living area of the igloo.

If there is a lot of windblown snow running along the surface, you may want a low wind-break to prevent erosion around the base of your wall. To complete the exterior work, put in a couple of snow flags around the igloo to help you spot it under poor weather conditions.

Using an igloo is far easier than using a tent. Just crawl in, put down a plywood cook-stove base on one of the shelves, stick your odds and ends into the wall and use some of the excess snow you will generate in making up sleeping spaces to melt supper water.

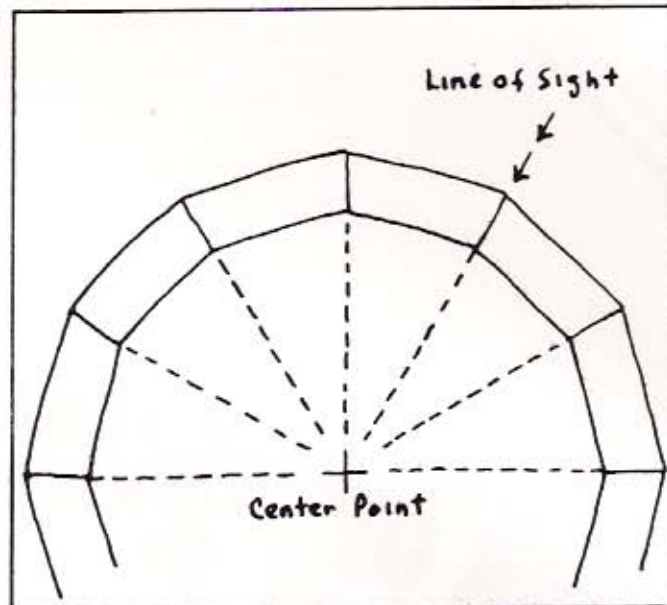
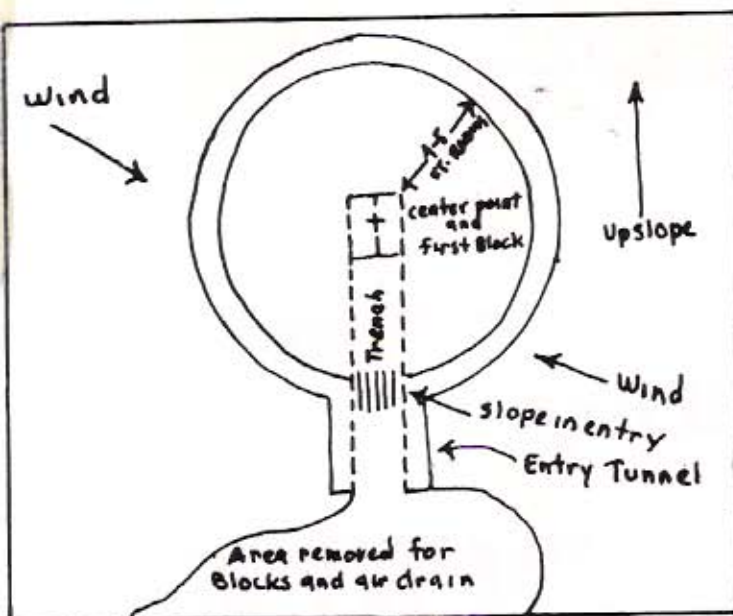
Heat is the igloo's big enemy. If the walls start to drip, it is too warm. But properly vented construction won't drip; it won't even steam. Cut a wedge-shaped plug from the center of the roof before getting the stove started. The vent won't cause a drop in temperature, but without it the temperature will quickly get high enough to start melting the whole place. For the same reason, *never* close off the entry tunnel. Body heat can raise the interior temperature too high.

Snow walls suck vapor out of the air so fast that hot coffee, human breath or even boiling water will not form a visible vapor. The moisture is actually working for you. After a few hours of soaking up vapor, the walls bond themselves together and become much harder and stronger.

A single candle will provide all the light you need. A spoon stuck in the wall makes a handy candle holder. Without wind to bother the flame, there won't be hot wax in anybody's beard, hair or down bags.

Once the cooking hole is re-





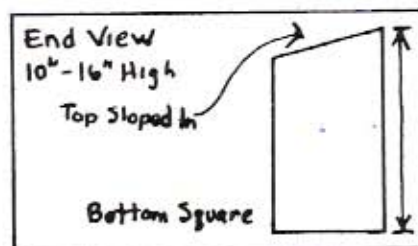
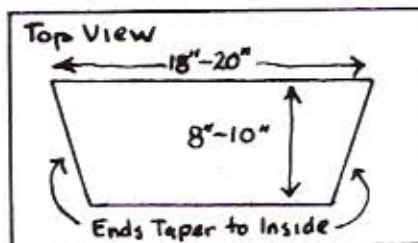
Site layout: The radius of the igloo should be 4 or 5 feet.

plugged, the real blessing of an igloo is revealed: a warm, soft place to sleep without fear of cold, wind, storm or noisy rattling nylon. An ensolite pad between you and the snow ensures a fine rest.

When we went up Algonquin, a healthy 5,100 foot alpine-type peak in the Adirondack Mountains of New York, we tested our igloo-building itch. We'd been well indoctrinated with the "tentitis" of backpacking commercialism. We arrived at a likely-looking spot some 4,900 to 5,000 feet up at 5 P.M. and, despite our skepticism, we were safe, warm and cozily cooking supper in our igloo by 7 P.M. It was the first time either of us had camped happily high on a winter mountain.

At something like minus 30 degrees centigrade with wind-chill outside, we managed to sit around with our parkas and gloves off, inner clothes open and with (imagine!) warm ears and olfactory nerves warm enough to savor the smells of stew and coffee. By morning there was a small problem. Our heavy down sleeping gear proved to be almost too warm for comfort.

Gaston Rebuffat also "suffered" it out in an igloo. Though he didn't bother building an entry tunnel, he had a very nice curve to the wall and reported close to zero degrees centigrade comfort even on the Matter-



The blocks: The above illustrations show the approximate size and shape.

horn's summit.

My companion, Rick Nelson, managed some version of comfort experimenting with igloos and snow caves in high winter at Yellowstone. He found that snow caves, despite their thicker walls, do not function nearly as well as igloos. For one thing the floor inside must be higher than the entryway, and the structure must be vented. His igloos, even though one was built to a square pattern, did work.

The average backpacker should build an igloo near home before attempting it in the wilds, just to get faith in his ability to put one up and to develop an eye for tapering blocks and sloping walls. Some winter schools are now seriously going into

The top edge of each block should be aimed at the center point.

the how-to and why of snow caves and igloos. Either individually or through a school, one experience in an igloo is usually enough to convince a winter camper of the comfort and feasibility of using igloos as a winter shelter.

Additionally, igloos are a natural addition to the landscape. Once the users are gone the igloo will remain to be reused on another visit or by someone else who might need shelter badly. The igloo will eventually vanish without leaving a mark.

The final argument for using igloos is safety. And that's not only the absence of fire hazard. Not many years ago a wet sleeping bag meant serious trouble or one heck of a big fire. A thorough soaking was usually disaster. But with an igloo and cook stove, it is possible to survive a wet sleeping bag and turn dangerous battle against frostbite into a good chance for a healthy recovery. Two very cold humans in a sealed-up igloo can quickly raise the temperature to thawing point, and with a stove and vent, can dry out well enough to turn a grim struggle into minor discomfort.

Still, an igloo's finest aspect is its ability to allow the backpacker to enjoy winter camping while staying warm, dry and comfortable, without backpacking two tons of whatever in order to do it. ■