

Step 1

Collect branches from a willow tree. The branches need to bend easily and not snap. Warming the wood by a fire can help make the branches more flexible. You will need two larger branches to make the frame and smaller branches for crosspieces on each shoe.

Step 2

Bend branches to form a teardrop shape. The frame for your snowshoe should be roughly 6 inches longer than your shoe. To tie the two ends together, lay one end on top of the other to form an X shape and use your 550 cord or twine to secure them. Wrap the cord so that it goes through the middle of the X several times.

Step 3

Attach smaller pieces of willow branches for your crosspieces. You'll need three smaller branches to form the crosspieces for one snowshoe. Lay one crosspiece so that it sits about one-third of the way down from the top of your snowshoe, where the ball of your foot will go. Lay the other two down from the first one, keeping them several inches apart. They will be under your foot and support your weight.

Step 4

Weave more small branches over and under the crosspieces to form a crisscross pattern. If the branches don't stay in place, use your cord to tie the branches in place for reinforcement.

Step 5

Secure the snowshoe to your foot with bindings. Step on the snowshoe so that the ball of the foot rests on the top crosspiece. This position will let you flex your foot while you walk. Tie one side of the snowshoe next to the top crosspiece with 550 cord and run the cord through your shoelaces. Secure it at the other side of the snowshoe next to the top crosspiece.

How to Make Snowshoes

<http://www.motherearthnews.com/diy/how-to-make-snowshoes-zmaz81ndzraw>

By Carl E. Heilman II

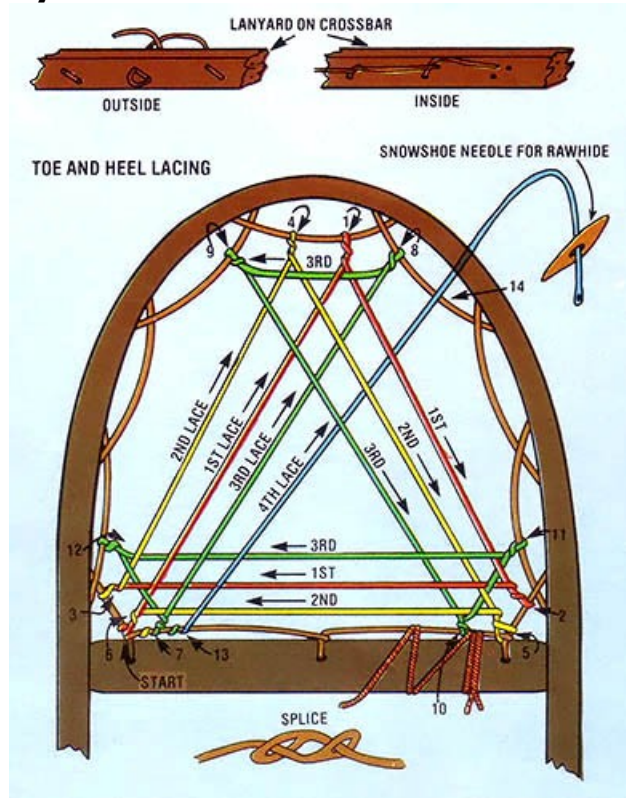


Diagram shows method of lacing the toe of a snowshoe as described in the article.

MOTHER EARTH NEWS STAFF

If you live in (or have ever visited) a region with heavy annual snowfalls, you know that trying to travel on foot through the winter woods can be downright exhausting and even dangerous. However, you don't need expensive skis or noisy, high-powered snowmobiles to traverse the white wilderness in comfort. Instead, strap on a pair of snowshoes—just as native Americans did hundreds of years ago—and start out. You'll often find yourself able to walk over deep powder that would sink cross-country skis or a powered vehicle!

Since its introduction to this continent by migrating tribes who crossed the Bering Strait with slabs of wood strapped on their feet, snowshoeing has grown from a convenient mode of transportation to an exhilarating cold-weather activity that almost anyone—regardless of his or her age and physical condition—can enjoy. What's more, you can slash the cost of this already inexpensive pastime by learning how to make snowshoes from mostly foraged materials!

Although it's admittedly not a simple job, snowshoe crafting is a worthwhile project for anyone who has basic carpentry skills and a yen to roam through silent, white-carpeted forests without disturbing the delicate environment of the winter woods. You'll need to locate a stand of ash trees (to split into the bows for

the shoe frames); some scrap wood (for building a jig form on which to shape those graceful curves); and, if you like, materials to make your own rawhide (for lacing and binding the shoes). You might spend as long as 40 hours fashioning your first pair of hand-split snow walkers—since it'll take a lot of time to build the jig forms and learn the techniques for frame bending and lacing—but once you're ready to test-run your new footgear, I think you'll find the thrill of setting out into unexplored territory to be well worth the effort!

Commercial snowshoes are available in a variety of shapes and sizes, from the lightweight oval "bearpaw" model (which, at an average size of 8" X 25", is ideal for competition and for backpacking in heavily forested areas) to the long-tailed Yukon shoes (which can measure up to 12" wide and 60" long, and are best for open country). Generally, the small, flat designs are best suited for use in dense, wet snow while the larger shapes—which commonly have their toes curved up several inches—can "float" over deep powder. A good all-condition snowshoe customarily measures 9" to 10" wide and 3 to 4 feet long, and has a short tail to provide traction.

I've been making my own "big feet" from hand-split ash for ten years now, and have pretty much settled on a 9" X 36" model that I call the Trail Blazer. It's light (so the wearer doesn't tire easily) ... it's strong enough for bushwhacking through rough territory ... it provides enough flotation—or support—for backpacking through deep snow ... and its turned-up toes allow the wearer to kick through heavy drifts. If you're new to the art of snowshoe-making, you'd do best to start with this basic pattern, but later—as you become familiar with the process—you'll probably want to alter my design to suit your own needs and inclinations.

Cut a Newspaper Pattern

Begin making your homemade snowshoes by fashioning a pattern for the frames. I generally use newspaper for this purpose, although any large piece of paper will do. If you're using newspaper, fold a full sheet diagonally to form a triangle. The crease, when the paper is opened, will mark the centerline of the snowshoe, but you'll want to cut out the template while the sheet is folded so that the finished shoe will be perfectly symmetrical. Since the pattern is for the *inside* dimensions of the frame, it doesn't include the Trail Blazer's 5" tail.

Mark a point about three-eighths of the way down the snowshoe's length (on my 31" Trail Blazer, for example, that would be 11 1/2 to 12 inches), to indicate the location of the widest part of the frame. Then, working from that point, draw the outline of the shoe from toe to heel, as shown in the diagram. (You might want to use a flexible metal ruler, on edge, as a guide in order to maintain a smooth curve.) At the toe—or leading edge—the snowshoe should be almost round but will taper to a point at the heel, where the tail will be formed. Try to cut the pattern so your shoe will have as much surface area as possible.

Finally, mark the line at which the toe will start curving up. I've found that a ratio of 1:2 works well, so this particular shoe's three-inch turn-up will *begin at* a point

six inches from the front.

Make the Bending Jig

Before you proceed any further, you'll need to construct the two jigs you'll use to bend the frames into shape. Assemble these devices carefully, since they'll directly affect the quality of every pair of snowshoes you make on them.

For each jig, you'll need to acquire two 40"-long 2 X 4's, four more that are 18" long, and another that measures between 30" and 40". First shape one end of each board to conform with the upturned toe of the shoe. (Try to make this arc as gentle as possible, since the toe area of the frame will be most liable to stress while being bent.) Now, cut a 1/2" jog in each plank, at the end of the curve.

Next, stand the 2 X 4's on edge—side by side—with the 40" lengths on the outside, the 30-40" section in the center, and the 18" pieces in between. Glue and nail them together, using 10-penny galvanized nails ... cover the level portion of the resulting support frame with a sheet of 1/2", plywood to fit flush in the 1/2" offset... scribe a lengthwise centerline ... and sand the planks' shaped ends to assure a uniformly curved surface.

Once the basic form of the shaping jig is made, you'll need to cut wood block "stretchers" to fit inside the toe, middle, and heel of the frame. Outline your paper pattern on the jig so that the centerlines match and the 6" mark on the pattern coincides with the line where the plywood meets the curve. Starting at that line, position the series of three or four crosspieces (each should be about 3/4" thick) that will shape the turned-up toe of the shoe's frame. If you use hardwood for this purpose, drill the pieces first to avoid splitting them, then glue and nail the slats in place. Next, attach—in the same manner—a crosspiece to fit the widest part of the outline, and another at a point 6 inches or so behind that.

To make a cradle for the "V" formation at the heel end of the frame, start with an 8" or 9" rectangle and slice it into three pieces. It will look like two right triangles and one isosceles triangle, except that you'll curve the cut sides slightly. Attach the three sections to the jig as shown in the photo and drawing, leaving a 3/4" path between them to allow the tail of the bow to pass through.

Two extra blocks are needed to keep the snowshoe frame in place on the jig: The first, 1" X 10 1/2", is glued and nailed on top of the crosspiece at the widest point. It should overhang the bottom board, so the snowshoe frame can be wedged in under its ends. A smaller block, 1" X 4", is attached lengthwise (along the centerline) over the outermost slat at the toe end of the jig. Use two No. 10 X 3" wood screws to secure this piece, with one end projecting to hold down the toe of a steamed frame.

Your jig is now ready to be used to bend wooden strips into shape. If you measured and assembled the device with care, it should look like a work of art ... and last to make countless pairs of snowshoes!

Cut and Split the Wood

When the jig form is ready and waiting, it's time to cut the wood that will become the frame of your snowshoes. To find out how long a piece you need, measure the perimeter of the outline made by the blocks on the jig, and you'll have the necessary length of the "bow". For the Trail Blazer model, you'll want 82" (including a little extra added at the tail end). Then, to be sure you have enough wood, plan to cut a bit more than that. I'd suggest starting with an 8-foot section of tree. (It might be easier, of course, to buy a board and rip out the lengths you need for your bow. But—as long as you have access to it—you'll find hand-split lumber to be far superior *and* more satisfying to work with.)

Just about any straight-grained hardwood can be used in this project, but most snowshoe manufacturers agree that second-growth white ash—or, in the opinion of a few others, white birch—is the best choice. Look for a straight, tall tree that's free of imperfections and has no branches lower than 10 to 12 feet above the ground. The trunk must be 6" to 8" in diameter, its bark should have a small diamond pattern, and—ideally—it should show 10 to 12 rings of annual growth per inch (this will indicate that the wood is dense and sturdy). Cut down your chosen specimen and saw off the 8-foot section you need. Tap a wedge into the center of what was the top end of the trunk, then work others all along the length of the split. When the log falls into halves, split each of those sections. You'll need two quarters for every pair of shoes you plan to make.

Shape the Bow

You can rip a rough bow from the quartered log, using a circular power saw and a rip guide (or split off the section by gradually and lightly tapping a froe down the log's length until it separates along the line you want). If necessary, remove any excess wood with a wide chisel and wedges, so that the cross section extends 1" in from the inner edge of the bark and measures about 1 1/8" in the other direction. Check the bow for slight blemishes, then cut it down to 82" in length. Save the leftover piece to produce crossbars for use on the snowshoe frame.

Next, shave the wood to the right dimensions: The thickness of the completed bow (measuring inward from the bark) should taper from 1/2" at the ends ... to 3/4" in the areas that will form the sides of the finished shoe ... and back to 1/2" at the middle of the bow (which will become the snowshoe's toe). Be sure that the sides adjacent to the bark-covered edge (which, once shaped, should be 3/4" wide) are at right angles to it. Leave the bark on through the steaming process to come. (When the finished bow is placed on the jig, the bark side will run around the outer border of the shoe.) Mark the center of the bow with a pencil, and you'll be ready to form the hand-split beauty into a recognizable snowshoe shape.

Steam and Bend the Frame

First, put together a simple steaming box from two 8-foot 1 X 6's. Rip a 2" strip

from each one, and glue and nail the four pieces together, using butt joints, to form a long, rectangular box measuring about 2" X 2" inside. Then cut two blocks to cover the ends ... drill an opening for the spout of a teakettle in one and a couple of small steam-escape holes in the other ... and attach them to the box (hinge one so that the bow can be easily inserted and removed). Seal the seams carefully, since the sides of this container should be as steam-tight as possible. The bow must be exposed to the hot vapors in the box for a minimum of two hours. Otherwise it could snap when you try to bend it onto the jig.

When the wood has been thoroughly steamed, you'll want to work it quickly and smoothly onto the drying frame. Hook the center (which you marked earlier) under the protruding block at the curved end of the jig. Then carefully bend the bow around the stretchers on the toe section, below the ends of the upper block at the middle, and down into the V-shaped heel. There, secure the frame with small wooden wedges and hold the tail pieces together with a C-clamp. Tap the tail gently to one side or the other to straighten it, and lightly hammer any sections that seem to be out of line.

Leave the bow to dry in the jig for at least two weeks ... after which it should be completely "cured."

Add the Extras

Once a frame is totally dry, it's ready to be made into a sturdy snowshoe. The Trail Blazer, as I mentioned earlier, has a 5" tail for added traction and weight distribution in deep snow. Before you fasten the frame's protruding ends together permanently to form the tail, be sure to remove any bark that didn't peel off in the steam, and then varnish the inside surfaces of the to-be-joined section ... since you won't be able to do it later.

The traditional method of connecting the halves of a snowshoe's tail is to drill two pairs of holes in each side and lash the tips together with rawhide. A more modern technique uses copper nails and washers as rivets: Simply drive in nails that are just a bit longer than the width of the tail, then bend the end of each one back over its washer with several light blows of a ball-peen hammer.

I sometimes use a *third system* that employs four 1/4" dowels ... glued and driven into diagonally drilled holes that form a pair of X's across the tail.

The final important element of a snowshoe's frame consists of a pair of crossbars, which will provide strength *and* help the bow hold its shape. To make these pieces, split the wood that's left over from the bow, and trim the two halves to the proper dimensions: One, to be mounted near the toe end, should be 1/2" X 1 1/8" X 8" ... the other—which is placed about 16 1/2 inches farther down toward the heel—will measure 1/2" X 1 " X 6 1/2 ". (The crossbars will be perfectly positioned by finding the place where—if the frame is balanced on a thin board crossing at the midpoint between them—the tail of the shoe is a few ounces heavier than the toe to balance the forward weight of your foot and keep the "prow" of the footwear slightly higher in snowdrifts.)

Measure 3/16 inch in from each end of each crosspiece, and shape the tips into projecting tenons. Next, mark the correct positions of the bars on the inside of the frame, and chisel out matching mortises at those spots. Finally, spread the bow and fit the crossbars in place.

Final Frame Touches

All that's left to do on the frame, at this point, is to bore holes for the lacing and thoroughly varnish the whole assembly to protect it from the elements. Using a 5/32" bit, drill three holes along the front crossbar and two in the rear one. The holes around the toe and heel sections should be made *in pairs* (with 5/8 inch between the members of each pair and 2 to 2 1/2 inches between the pairs) and—at least around the toe of the shoe—countersunk to protect the lacing thongs from abrasion.

Finish the frame by sanding off all rough spots or saw cuts and rounding the edges. Then cover it with a good exterior varnish, taking care to seal the mortises *and* the holes. If you plan to lace your snowshoes with rawhide, one coat will be sufficient at this stage ... but the frame should be varnished again (twice) after the rawhide is strung and has a chance to dry. (If the snowshoe will be laced with neoprene, on the other hand, two coats of varnish, applied before it's laced, should do the job.)

Lace It All Up

What a beautiful finished frame! It's ready at last to be "stitched" up. Traditionally, snowshoes were laced with rawhide, but the newer models often boast neoprene (or even nylon) webbing.

Actually, a case can be made for either material: Rawhide generally outlasts any other kind of lacing as long as it's properly cared for. It's also the least expensive material, *provided* you can make it yourself. (The process isn't very difficult. If you have access to a cowhide and a public library, check out a book on the subject and give it a try!) However, the crude leather stretches when it gets soaked, and a hide-laced snowshoe can sag badly under wet conditions.

Neoprene, on the other hand, is a synthetic rubber with high resistance to snow and ice. Therefore, it'll stay taut and require no waterproofing maintenance.

Still, rawhide is the traditional webbing used by native American snowshoers. If you choose to work with it, cut long strips ... soak them well ... lace the frame while the hide is still wet, so it can tighten as it dries ... and splice them as close to the frame as possible.

With rawhide thongs, it might be helpful to use a snowneedle, which is simply a narrow, 2"-long piece of wood with a hole in the center. Although it may be hard to handle, pull the rawhide as tight as you can while you weave it (you'll want to snug neoprene in place, too, but it will tend to pull up automatically as the weaving progresses).

Starting with the shoe's toe section (from the upper crossbar to the tip), you'll first need 1 3/4 yards of 1/8"-wide lacing to make the lanyard that anchors the rest of the pattern. From the starting position, pass the cord through all the holes in the framed, then tie it off along the toe bar.

The actual webbing will consist of 4 3/4 yards of the same 1/8" cord. Beginning at the left end of the crossbar where it meets the frame, create a triangle formation by running up to the tip, down to the right side of the frame, and back over to a point just above your starting point. Wrap the line around the first lace, then back down to the lanyard just to the right of the starting point. From there, start *another triangle...* and continue this pattern until all the lacing is used up and the entire toe section is filled in by the closely woven mesh. The cord usually runs out near the center of the crossbar, so I wrap it around the lanyard over to the right and tie it off near the next hole.

You'll use the same procedure in the heel section of the shoe, except that there you'll need only 1 1/2 yards of cord for the lanyard and 3 1/2 yards for the lacing itself.

The middle section—that portion of the frame that's *between* the two wooden crossbars—requires 13 yards of 3/8"-wide material. You'll start by making a horizontal toe cord to anchor all the rest of the woven threads. (When you wear the snowshoes, the tip of your boot will rest between the upper crossbar and the toe cord, so be sure to leave room for bulky winter footwear ... ideally, the open space should be 5" wide and about 4 1/2" long.)

To begin, make a slit in one end of the line, then wrap it around the left side of the shoe frame. Pass the other end through the slit and pull it tight ... then run the lace back and forth across the frame a couple of times to form a toe cord of at least four strands. Tie the grouping on the left side, then take it over to the right and do the same. Now, pull it straight up, loop it around the crossbar, wrap it back down around itself, and pull it diagonally to the center of the rear crosspiece. Angle the lace to the left corner of the toe cord, up to and over the forward crossbar ... then wrap it back down to the left side of the frame. Tie it down, run it straight across to the right side of the frame, up to the crossbar, back down to the toe cord, then angle all the way down to the rear crossbar (at a point to the left of center), back up to loop around the first lace at the toe cord, and thread it around itself down to the left side of the frame (below the first knot).

To continue the sequence, pull the lace over to the right side (again, below the knot you made earlier), thread it around the frame and up to the crossbar ... wrap it around itself ... and weave it down to the rear crossbar (this time right of center). Once again, it angles over and up to the forward crossbar, where it's wrapped and tied, then woven down to the left side of the frame (below your first two knots) and straight across to the right side of the frame. Circle the cord around the frame and angle it up to the toe cord, down to the rear crossbar (far left of center), and up again to wrap around the second lace. It then twines around itself straight down to the left side of the frame (below the previous three

knots), weaves straight across to the right side (again, below the previous three knots), and up to wrap around the third lace (just as it did on the opposite side).

Repeat this pattern until it concludes at the toe cord and the area is filled by tightly meshed webbing. Tie off the end of the strip and wrap the excess length around the toe cord to help protect that support against wear.

Test the Product!

If you've made it this far in the process, you deserve a little exercise and fresh air! And when you've completed a pair of shoes, you'll be ready to investigate a new snowfall in your custom-made footgear ... just as soon as you find a set of bindings to attach your boots to the snowshoes.

For short trips you can probably devise an adequate system with a 5-foot length (for each shoe) of neoprene, leather, or even lampwick. Basically, the strap goes over the toe of the boot, wraps securely around the toe cord, crosses over the instep, and ties around the wearer's heel.

You'll probably decide to try a sturdier commercial binding, however, for serious mountaineering and snowshoeing through rough territory. Bruce Beck sells neoprene in various widths and lengths, as well as his own unconditionally guaranteed bindings.

You can also buy neoprene, rawhide, and bindings from [Tubbs Snowshoes](#). This company—the oldest in the business—offers completed shoes and do-it-yourself kits, too. All are described in the firm's free catalog.

As for other necessities, you'll find that snowshoeing is one of the simplest winter sports to equip yourself for. Most important is a comfortable pair of boots. In cold areas, leather high-tops are ideal. In warmer, wetter weather try rubber boots or canvas hiking shoes, worn with a couple of pairs of wool socks. For any expedition, dress warmly in layers (preferably with absorbent cotton undergarments and wool outerwear) ... because snowshoeing is a vigorous activity, and you'll often find that you need to *shed* some clothing before you've traveled very far.

For More Information...

In general, there's not much to be said about technique: If you can walk, you can snowshoe! The only trick is to avoid stepping on the side of one shoe with the other (and then pitching face-first into a snowbank). To prevent such mishaps, you'll have to walk with your legs slightly farther apart than usual; don't expect to move as rapidly as you do when wearing lightweight boots on a summer hike.

More how-to details—as well as information about the history of snowshoeing and traditional methods of shoemaking—can be found in winter sports guidebooks available at most camping equipment stores or your local library. Two especially good references are *Snowshoeing* by Gene Prater (Mountaineers, 1974) and *The*

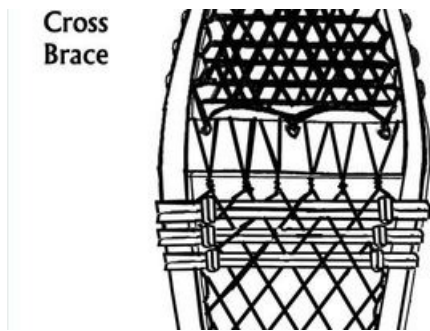
Snowshoe Book by William Osgood and Leslie Hurley (Stephen Greene Press, 1971). You might also like to contact the [U.S. Snowshoe Association](#)

You can take pride in the fact that you've created a fine pair of snowshoes. Be sure to care for your handcrafted footgear lovingly and it'll last through years of hard winter trekking. Whenever the finish on the frames begins to look worn, give them another coat of waterproof varnish. Don't forget to "paint" the lacing as well, if it's made of rawhide. Store the shoes in a cool, dry place and—particularly if you live deep in the woods—hang them out of the reach of gnawing rodents.

Once you've taken your first hike on snowshoes, I'm willing to bet that you'll be hooked on this age-old mode of winter travel. Whether you use them for recreational hiking or for vital transportation in and out of a remote, snowbound homestead, you'll undoubtedly find your handmade shoes to be well worth the effort. May the snowfalls be deep ... and your snowshoes float high!

How to Make Traditional Snowshoes

by Tom King



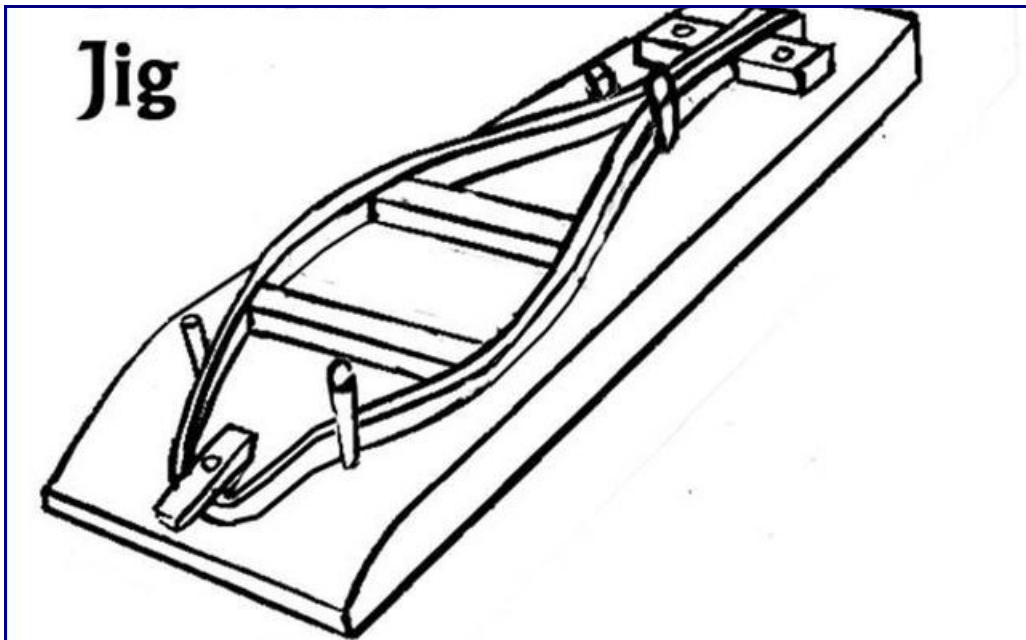
Traditional Snowshoe construction showing rawhide bracing for the shoe harness.

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Making snowshoes is something of a lost art, but in deep snow a pair of reliable snowshoes can make the difference between hiking out of a blizzard and winding up a people-sickle buried to your waist in a snow drift. Making your own snowshoes can be a very satisfying project.

Preparing the Jig



Cut a solid wood plank (not plywood) that's a bit wider and longer than the shape you choose for your snowshoe to create a jig upon which to build your snowshoes. The frame of the snowshoe should be large enough to bear the weight of the person. A small child's snowshoe can run 10 by 40 inches while a man's might be as much as 14 by 44. Women's sizes would be somewhere in between. Traditional snowshoe making is rather more of an art than a science. A plank that's 15 or 16 x 48 inches should work well as a jig for most snowshoe projects.

Bend the end of your jig plank $1\frac{1}{2}$ inches to make the toe of the snowshoe tip up. It's important to bend the tip of your shoe upward like skis so you don't catch the toe in the snow and fall on your face.

Bend the end of the jig by wrapping one end in an old wool blanket and pouring boiling water over it. After a bit of this treatment, the wood fibers will soften and you can gradually bend the end of the board. Brace the bend by clamping it securely to something solid. As you continue pouring boiling water over the end, steadily pull down on the opposite end of the jig frame till it stays bent at the correct angle.

Draw the shape of the snowshoe on the working side of the jig (the tip of the jig slopes downward). Once you've marked the shape of the frame, then drill $\frac{5}{8}$ inch holes in the top where you will need the frame braced to form the characteristic paddle shape of the snowshoes.

Cut 6-inch long $\frac{5}{8}$ -inch dowels to push into the brace point holes. Look for spots where you would hold the ash strips in order to bend them to form the shoe's desired shape. Insert the dowels in the holes so that as you bend the wooden frame into shape, you can slip it behind the dowels and the dowels will prevent the frame from springing back out of shape again. For this project, the shoe will

be made in the classic pear shape with the outer frame in one single piece fastened at the trailing heel.

At both ends of the jig, screw thick wooden strips loosely so you can tighten them down over both ends of the snowshoe frame to hold the frame long enough for the curve to set.

Making the Frame

Trim the Frame: The ash strip used for the snowshoe frame should be about 7 or 8 feet long to start with. Since you'll be making the frame from a single piece of bent wood, you'll have to do some careful sanding, planing or carving. The wood strip itself will need to be at least 7/8 inch wide by 5/8 inch thick across the center of the frame where it is widest. Two cross braces are inserted about a third of the way down from the toe and the other about a third of the way up from the heel. The frame strip will need to be planed down to about 3/8 inch thick at the toe and about 1/2 inch thick at the heel. Use your tape measure to figure out where to trim down the frame before you bend it.

Bend the frame using a wool blanket to wrap the frame. Pour boiling water over the frame until the wood fibers soften and the frame becomes flexible. Screw the wood strip across the center of the frame strip at the toe at the curved end of the plank. You may have to hang the curved end off the edge of your work table to make it steadier.

Continue the blanket and boiling water till the frame bends for you, once the frame strip is fastened securely at the toe. Don't overdo it. There should still be some resistance as you pull the frame down and bend the ends around the dowel pins in the jig. Alternate bending the right and left sides of the frame strip to keep the pressure evenly balanced in the jig. Don't rush.

Clamp the two ends of the frame at the toe and let the frame set and dry, once you've got your frame shaped.

Drill a set of four holes in the toe of the frame and lace the ends tightly together with rawhide thong. You can also bolt it if you prefer a stronger, less traditional fastener at this critical point.

Balance the frame. To achieve proper balance, place the cross braces on top of the frame and balance the frame on your fingertips at the exact midpoint of the frame. The tail of the frame should drop slightly if the frame is properly balanced. You can adjust the position of the cross braces till you achieve the proper balance. Mark the spot where the cross braces will go. The braces should divide the frame into about thirds: the toe, center and heel.

Trim the sticks you use for the cross braces down to 1 1/8 inches wide and 3/8 inch thick. You'll need to cut a shallow mortise into the center of the frame strips at the place you want to put your cross bracing. Measure the distance allowing for the depth of the mortise, cut the cross braces to the proper length and then spring the strips into place. Once they are laced up, the pressure of the lacing

should hold the cross braces in place, but if you're a nervous Nelly like me, you'll probably put a little glue in the mortises. Gorilla Glue works great!

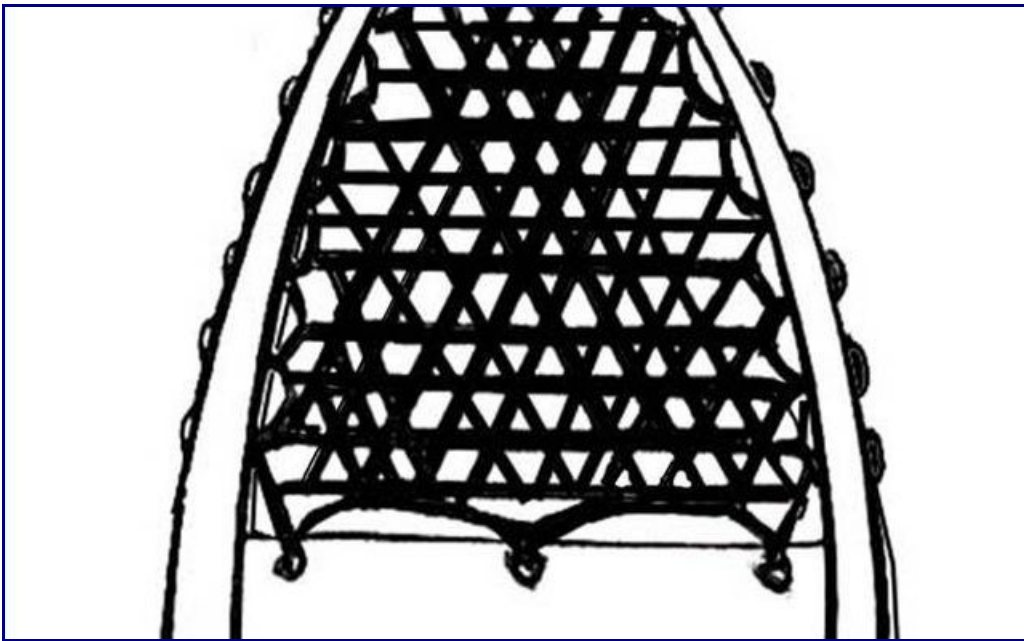
Drill three holes on edges of the cross brace facing the inside of the tip and tail sections, two close to the edges and one at the center for adding lanyard loops to hold the criss-crossed rawhide net that forms the surface pad of the snowshoe.

Webbing the Frame

Drill two rows of holes on the sides of the frame at about a third of the depth of the frame from the edges. Stagger the holes about a 1/2 to 3/4 inch apart. The top row of holes will be 1 to 1 1/2 inches apart and so will the bottom holes. The two rows will be offset so that one hole is high and the next is low.

With the rawhide thong, lace through the holes in the frame so that you create a series of tight even loops along the edge of the frames. It is through these loops that you will lace the criss-crossed rawhide cords that will form the surface pad of your snowshoe. You can use a stiff cord or even tennis racket gut nylon if you decide not to go authentic.

Lace the lanyard loops from low hole to high hole going all the way around the frame for each section, front, center and tail including the three holes in the cross braces where there will be only two longer lanyard loops. It's best to use wet or green rawhide if possible as it will tighten as it dries. Install lanyard loops around the inside of the tip sections.



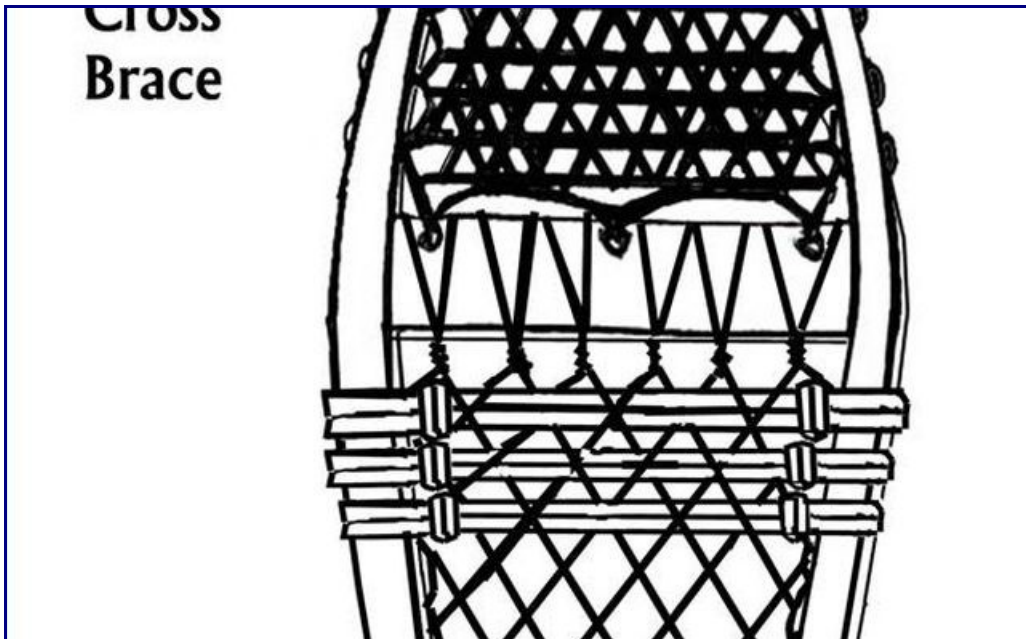
Plan your weave. Snowshoe webs are not square nets like tennis rackets, but a triangular web laced from three directions--horizontal and diagonal right and left. When starting the weave, first string the horizontal thongs going from opposite loops back and forth horizontally till you have completed all the cross thongs. Use a special needle made for rawhide thongs or create one. Use wet or green

rawhide to weave your webbing or use heavy gut cord.

Start at the center and string diagonally to the right and left and then keep lacing back and forth, weaving through the horizontal web till you have two overlaid diagonal rows. You may have to experiment a bit to get it right, but it's not difficult. The picture shows the weave pattern. Again, the rawhide thongs should be strung tight, but not extremely tight as they will shrink up as they dry.

The Rawhide Cross Brace

Complete the weave in the tip and tail sections first--above and below the wooden braces. Now you will create a rawhide cross brace from which the boot harness will be attached.



Loop three turns of doubled rawhide across the frame about an inch or so below the front cross brace.

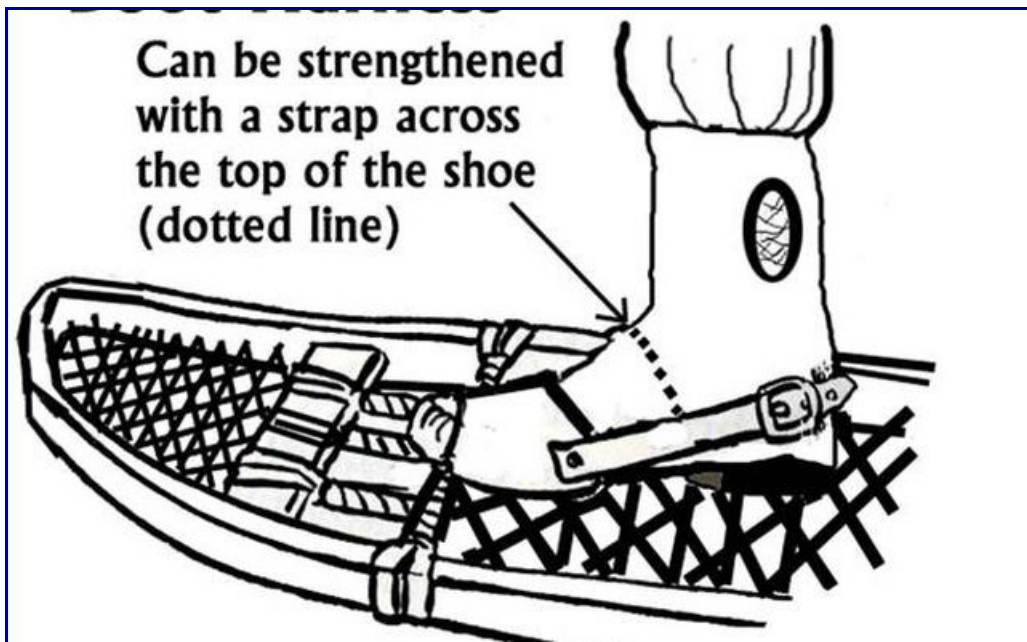
Loop the ends of the rawhide thongs around the cross braces above and below the center section so that each cord is attached by a couple of loops round the braces. Weave the weave pattern shown above through the center section, incorporating the rawhide cross brace within the pattern.

Add horizontal passes with the rawhide thongs to give the section greater strength if the center web is not strong enough. Remember, though, that extra webbing is extra weight you'll have to schlep through the snow!

Make sure you make the rawhide cross brace strong as it will provide the attachment point for the boot harness. If necessary, use heavier rawhide thongs or extra loops around the frame so that the harness has a secure mounting point.

Attaching the Boot Harness

Cut a 3- to 4-inch wide band of tanned leather, long enough to wrap over the toe of your shoe or boot.



Bore four holes in each end of the leather toe strap large enough for rawhide thongs to pass through.

Lace the toe strap to the rawhide cross brace in a toe sized arch at the center of the rawhide brace just behind the front wooden cross brace.

Cut holes for rawhide thongs at the base of the toe strap along the rear edge. Cut a leather boot heel strap with holes in either end and cut long enough to slip over the heel of the boot. If you want the heel strap to be adjustable, cut it in two longer pieces and install a small belt buckle. For "working" snowshoes that the user will be in and out of repeatedly during the day, an elastic or rubber boot heel strap may be more effective.

Attach a smaller permanent strap attached at the sides of the heel strap that goes across in front of the ankle to improve the security of the strap. Do not tie the heel strap to the webbing as the heel must lift when walking or the toe will dig into the snow and trip you.

Items you will need

- Snowshoe form made of a plank and wooden pegs Strips of hardwood 1 by 2s (ash is best) A roll of at least 1/16-inch rawhide long (at least 50 to 75 feet or so) Tape measure Drill and bits 5/8" short wooden dowels Sander or planer for shaping the wood Sandpaper (course, medium and fine) Rawhide lacing needle

Tip

- Remember to work slowly. You'll save time. You can lengthen the working life of your snowshoe by cutting grooves in the outside of the frame where lacing passes. This recesses the lacing and protects it from abrasion, making it last longer. Avoid knotting loose ends together to save cordage. Knots in the webbing not only look bad, they are a weak point in the webbing and prone to breakage and slipping. Don't varnish the frame as this will make the snowshoe slippery and in snow and ice you need all the traction you can get.

References

- [Chippewa Snow Shoes](#)
- [Simple Snowshoes](#)
- [Improvised Survival Snowshoes](#)

Other Snowshoe Plans:

[How to Make Chippewa Snowshoes](#)

[Alaskan Eskimo Snowshoes](#)

[Primitive Snowshoes Made from Ash or Hickory Sticks](#)

[How to Snowshoe](#)

[Additional Bindings](#)

[Snowshoe Moccasins](#)

<http://www.inquiry.net/outdoor/index.htm>

