

keelson about 250 centimeters long (it will later be scarphed to forward and aft pieces) and shape it to section AA shown in figure 7.

For simplicity, the bow and stern blocks shown in figures 1, 4, and 5 can be made rectangular and one-piece. The large stern piece shown in figures 5 and 6 is straightforward in construction. The aft keelson is made as shown in figure 7, with an overall length of about 150 centimeters to allow for later trimming and scarphing. The photograph shows the simplified stern construction I used in my two-hole kayak. Again, this treatment could be used instead of the more complicated Aleut cross sections which, although aesthetically more pleasing and lighter weight, take more time and skill to make.

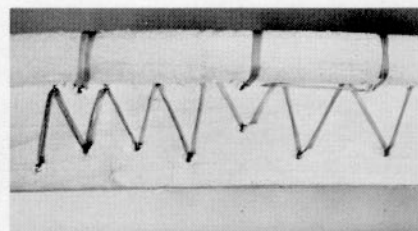
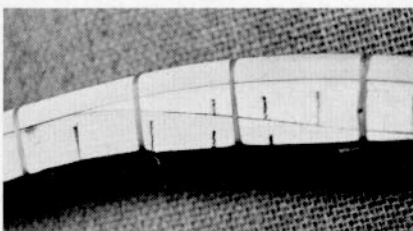
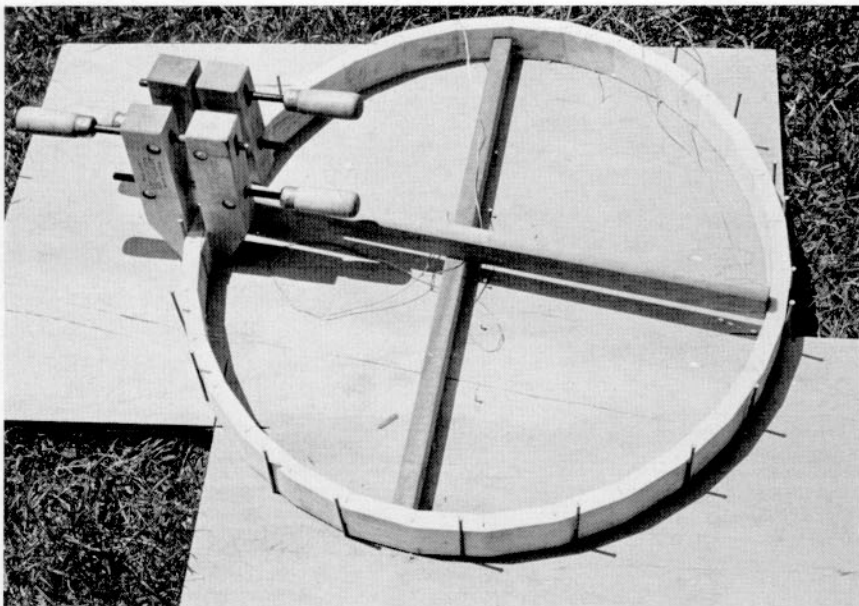
The gunwales, (cross sections shown in figure 9) are cut 3.5 centimeters high by 2.2 centimeters wide and 445 centimeters long. Mark out the locations of the deck beams and cut out mortises about 0.5 centimeter from the bottom of the gunwale. Also mark rib locations and drill the bottoms of the gunwales with round mortises 1.0 centimeter in diameter and about 1.5 centimeters deep to accept the ribs.

The deck beams are made to the dimensions found in figure 8. The length and midpoint depth are given in the table there. With straight-grained, knot-free stock, the deck beams can be cut out of a 2 by 8.

Rip the hull stringers out of a 16-foot, knot-free 1 by 6, and plane them down to an oval cross section 1.0 by 1.2 centimeters. Leave them full length for now.

The forward and aft deck stringers are initially 240 and 170 centimeters long, respectively, with the cross section shown in figure 9. Leave the ends untrimmed until final assembly.

The ribs are a very slight diameter of 1.0 centimeter. To avoid breakage, it is best to make all 43 of them from willow shoots of appropriate diameter. If this is not available, use the clearest, most straight-grained spruce you can find. Cut them about 70 centimeters long. This length will accommodate the longest ribs in the middle of the kayak, but save the shorter leftovers to be used near the ends. Although the finished kayak has a shallow vee bottom, the ribs will be bent with a flat section at the bottom as shown in figure 8. The addition of the keelson on edge creates the vee bottom. Set the ribs aside in a trough of water (a section of eaves trough capped on both ends will do nicely) until assembly time.



The cockpit coaming on the original kayak is made in two parts with straight scarph joints on both sides. The small lip shown in the cross section in figure 9 was carved into the coaming.

I suggest making the coaming from one long piece with only one scarph joint. Here's how: Take an 8-foot length of spruce 1 by 2 and plane it down 3.9 centimeters high by 1.3 centimeters wide. To facilitate bending, make saw cuts ( $\frac{1}{8}$  inch is the kerf thickness of a normal circular saw) to within 0.16 centimeters (about  $\frac{1}{16}$  inch) of the far side. Space the kerfs every 5 centimeters. Plane one end of the coaming's flat side for 12 centimeters, as shown in the photograph. This is one side of the scarph joint.

On a piece of scrap  $\frac{3}{4}$ -inch plywood of sufficient size, mark the outer edge of the cockpit coaming to be 65.2 centimeters long by 48.0 centimeters wide, and slightly egg shaped. Drive  $3\frac{1}{2}$ -inch finishing nails into the plywood around this line to make a form for the coaming, as in the photograph. Put the coaming into an 8-foot length of eaves trough that is capped at both ends and set up on bricks to make room for a two-burner camp stove underneath. Boil water in a kettle and pour it over the coaming, then light the camp stove to keep the water hot. After 20 to 30 minutes, remove the coaming from the hot water and bend it into the circle of

*Constructing the cockpit coaming of one piece. Top: the coaming is slightly egg-shaped, as is the coaming of a modern kayak. Lay out the pattern on scrap plywood with finish nails. After the coaming is sawn part-way through at intervals, it is boiled, set in the form, clamped, and allowed to dry. Left: once the scarph joint in the coaming is trimmed, it's drilled through and lashed together. Right: rather than carve the lip, the author lashed on a half-round.*

nails. Mark the overlap, trim the long end to match your original scarph joint and replace the coaming in the form. Hold the scarph together with wooden clamps. (You may have to reheat the coaming before putting it back in the form.)

Once dry, drill  $\frac{1}{16}$ -inch holes through the scarph joint like the lower holes shown in the photograph. With a needle and a heavy waxed cord, sew the scarph joint together. You will be using a wood joining technique that is thousands of years old and quite good.

The lip around the coaming takes a spray skirt, and is simply made. Give an 8-foot length of  $\frac{1}{2}$ -inch half-round molding the hot water treatment in the eaves trough. When it's pliable, wrap it around the top of the coaming and trim to fit with a simple butt joint. While the half-round is held in place by clamps, drill  $\frac{1}{8}$ -inch holes, spaced