



and exhibits a good snug fit (but not too tight), drill a hole through the deck beams about 2.5 centimeters inboard of the gunwale and lash the joints together as shown in photograph B. File notches to recess the lashings. Thin, braided nylon cord, such as mason's twine or fisherman's net twine, will do well. Take about four or five tight wraps at every joint.

The round beams at the ends need to be cut short enough for the gunwales to hold the (trimmed) bow and stern blocks by friction alone. Drill a 1/8-inch hole from top to bottom through the gunwales at the locations of these deck beams for the lashings. Take several turns from one gunwale to the other as shown in photograph C.

The bow and stern blocks are fitted next. They may have to be trimmed to fit both the angle and flare of the gunwales. Using screws and glue to pin the blocks in place would be acceptable, but lashings or wooden pegs are better. The Lowie bidarka had pegs that had sheared off. I used screws as temporary clamps and removed them after lashing. To lash the blocks in place, drill holes through them at an angle so that the drill emerges through the middle of the gunwales. Again, file notches to countersink the lashings. Two lashings on top of each side and two more through the bottom of the blocks and out the sides of the gunwales should be sufficient.

Now fit the upper bow piece to the bow blocks and gunwales. Hold it in place temporarily while you fair its

outboard edges to follow the line of the gunwales as shown in photograph D. Lash the bow piece to both the gunwales and the bow block.

The stern piece is notched to receive the stern block as shown in figure 2. I used a variation of this in my two-hole reproduction because I didn't have a single piece of wood large enough for the stern piece; my assembly is shown in photograph E. The stern is lashed to the stern block and then to the after deck stringer which is added next.

The after deck stringer is notched to fit on the after cockpit deck beam as shown in figure 3. The stern end should lie on top of the stern block and fit flush with the top of the stern piece as in figure 2. Once the stringer is in place, sight down it from astern and check its fit where it crosses the other deck beams. If it is too high at any point, notch the stringer over the deck beams in question. When it's fair, groove the top of the stringer in the way of the deck beams as shown in photograph F, and lash each joint with several turns. Lash the stringer to the stern piece also, but not to the cockpit deck beam until later.

The forward deck stringer is fitted and lashed in a similar fashion. The forward end may be notched as in photograph D to fit the bow block, or gradually tapered down and lashed as shown in figure 4.

We are now ready to turn the frame upside down on the horses and fit the keelson pieces and ribs. The bow, stern, and middle keelson pieces should al-

ready have the rocker (fore and aft curve of the bottom) planed into them as shown on the line drawing. Lash the bow and stern keelsons in place as shown in figures 4 and 2. Also lash the forward end of the middle keelson piece, using a scarf joint as shown in figure 5. The stern keelson piece of the Lowie bidarka has pegs through the lashing holes to make the lashing tighter. Note from the line drawing that the scarf joints in the keelson occur underneath deck beams 2 and 7 and slant in opposite directions. Clamp the after end of the middle keelson against the stern keelson and adjust the two pieces until the distance from the bottom of the gunwales to the inboard side of the keelson at the mid-cockpit area is about 16 centimeters. Hold off cutting the scarf joint until after we've bent and fit the first rib, though.

Bending the ribs may be accomplished in either of two ways. An experienced builder can steam them, then bend and fit them by eye, one by one, so that they are symmetrical and just touch the keelson. Note that the ribs are flat across the bottom. By sighting down the length of the kayak, the ribs can be slowly decreased in size, starting with the center one and working out to the ends.

The beginner, however, should bend the ribs around plywood forms as in photograph G. A total of six forms should be made, one for each of stations 2, 6, 8, 9, 10, and 11. To make these, draw each numbered station full size from the table of offsets onto a