

King Canvasback

By John M. Miller Jr.

AFTER some exciting appearances on television during the Olympics, kayaks became the object of feverish interest. But boats like those range in price from just under $300 to quite a bit over. Thus comes King Canvasback, a beautiful little kayak that weighs only 65 lbs., is easy to build and costs around $85.

If you think the name King Canvasback is familiar, that may be because you've already heard of Canvasback, a small kayak that's been in MI's Plans Catalog for several years. She's one of our most-asked-for plans, and when the interest in larger kayaks became apparent, we decided to redesign and lengthen her.

Fifteen ft. long and 31 in. in beam, King Canvasback is an ideal father-and-son project. The craft is easily handled by one man and two boats can be car-topped on a small foreign car. It takes only a few weekends of work from lay-out to launching. The project is simple enough for hand tools but a variable-speed jig saw, drill and orbital sander make the job go faster.



USE cardboard or old newspapers to cut templates of frames, then trace on plywood.

First step in construction is to lay out the ten parts to be cut from the plywood. Because the plys run in both directions, there is no need to follow the grain of the wood. After the frames, stem and stern are cut, clamp them together and use the sander to bring them to their final contour.

Then cut the keelson to length, taper the ends and attach it to the stem and stern with two No. 6 1½-in. brass screws. Use U.S. Plywood's Waterproof

ALL FRAMES, STEM & STERN ¾" PLYWOOD
L.O.A. 15'0"

SEAT BACK OMITTED

COCKPIT STRINGER—1X2 (NOM) X 36" LONG
¾" SQUARE CORNER CLEATS

PLAN

STRINGERS—¾"X¾" BALUSTER
ONLY BOTTOM STRINGERS SHOWN
NOTE "A" AND "C" ARE NOT FULL LENGTH

DECK BATTENS—1X2 (NOM)
FASTEN WITH GLUE AND
1½" NO. 6 F.H. BRASS SCREWS

PROFILE

SEAT BACK

INSTALL ¾X¾" KEEL AFTER COVERING KAYAK (OPTIONAL)
USE 1¼" X NO. 6 F.H. BRASS SCREWS SPACED 12" APART

SHEER CLAMPS—1X2 (NOM) FASTEN TO FRAMES
WITH GLUE AND 1½" NO. 6 F.H. BRASS SCREWS.
WORK FROM CENTER TO ENDS

STEP 3

36"

6½"

6½"

SIGHT LENGTHWISE
TO ALIGN

ADD 3T
LAST

STEP 2

TRUE-UP
WITH SQUARE

FASTEN FRAMES
WITH GLUE AND
1½" NO. 6 F.H.
BRASS SCREWS

NAIL SPREADERS
TO TOPS OF
FRAME 3

BRICKS

STEP 1

NAIL 1X2
BLOCK UNDER
STEM & STERN

KEELSON—1X2 (NOM) X 10'8¾" LONG
FASTEN TO STEM AND STERN WITH
GLUE AND 1½" F.H. BRASS SCREWS

WEIGHT CENTER TO
HOLD KEELSON CURVE

22¾"

22¾"

11½"

11½"

16"

L.O.A. 15'0"

22"

CUT ANGLE
TO FIT

1X2

17"

14"

12"

½"

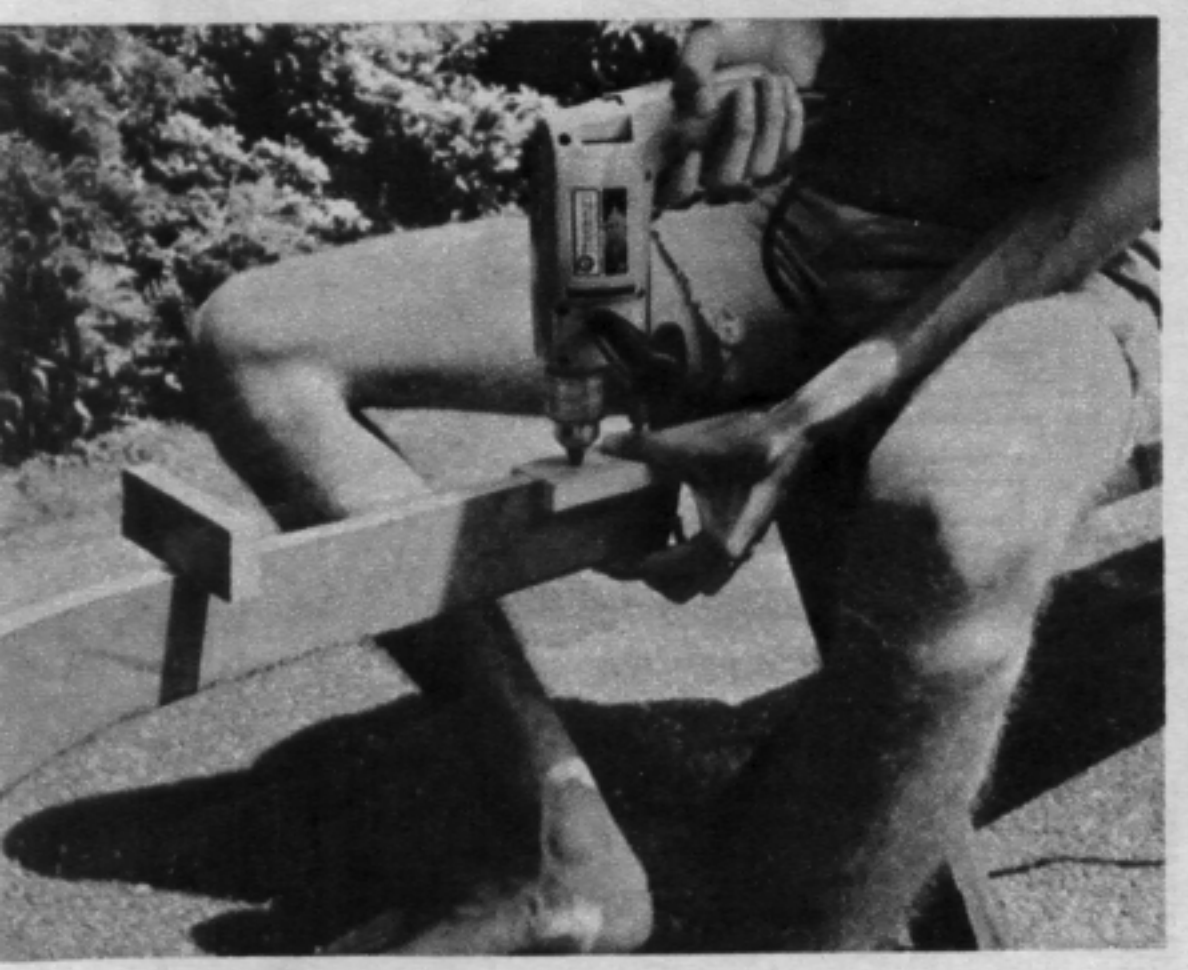
¾"

1X¾" TH'K

1X2

18½"

SEAT BACK DETAIL



FASTEN keelson (nominally a 1x2) to stem and stern pieces with glue and brass screws.



HOLD sheer clamps and keelson to frame members with C clamps for screwing, gluing.



WORK from middle of craft toward ends when installing strips to prevent warpage.

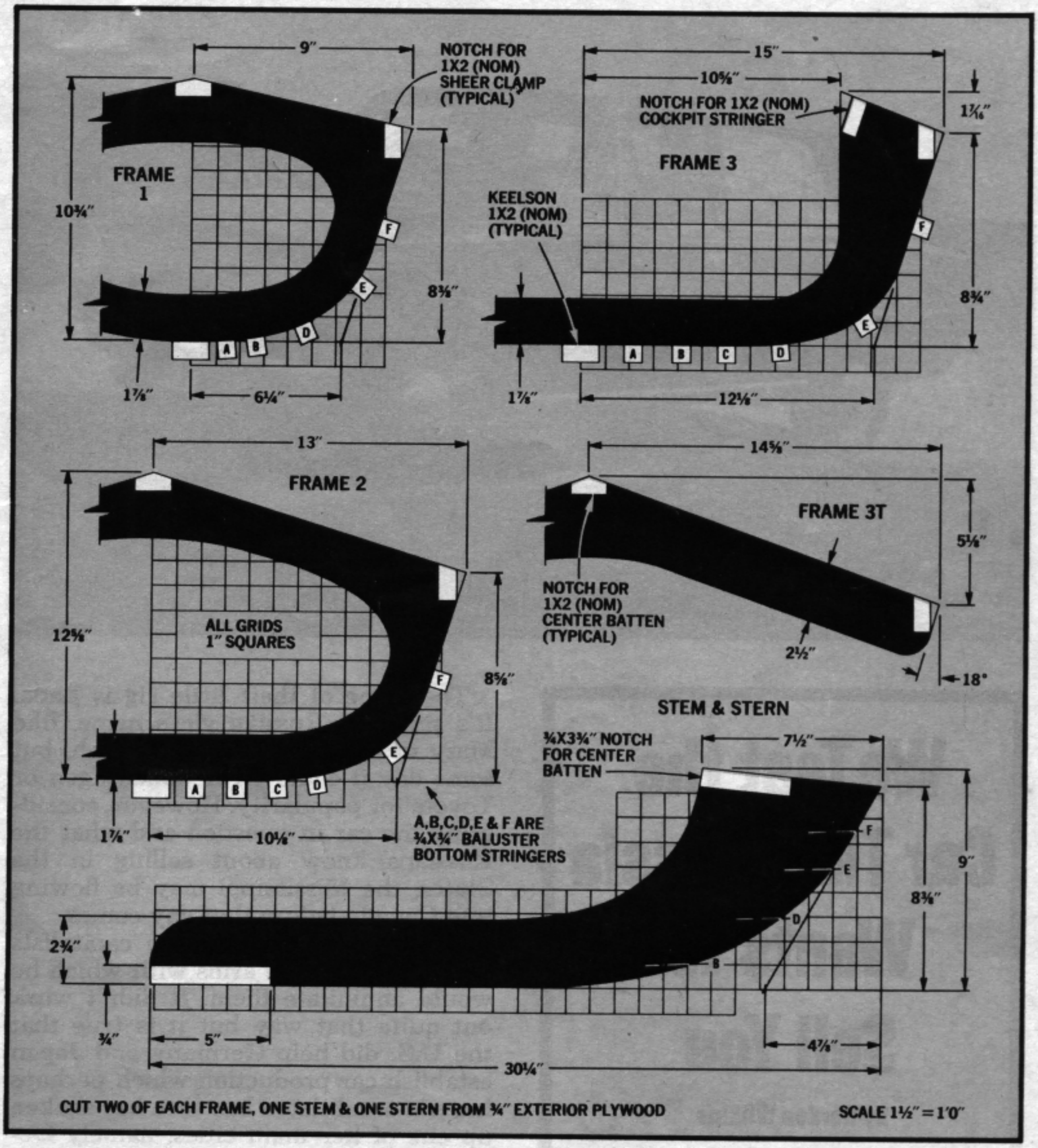


CANVAS hull sheathing is first attached along keel, then tacked to sheer clamps.

Resin Glue at all joints. Mark frame locations on the keelson, and nail blocks from scraps of 1x2 under the stem and stern to give a pitch up at both ends. These remain in place only until the frames and sheer strips (side stringers and sheer clamps) are attached.

You are now ready to attach the frames. First, nail temporary spreaders of 1x2s across the No. 3 frames to secure them against the pressure of bending the sheer strips into place. The spreaders are removed before applying the canvas. Attach each frame with a single screw and make sure it is vertical to the base line of the boat and square with the keelson.

With the boat right-side-up on a flat surface, place several bricks on the center of the keelson to weight it down



and hold the curve of the keel. Then fit the sheer strips and clamp them to the No. 3 frames. Working alternately on each side of the boat so as not to warp the keelson, clamp the sheer strips to each frame and mark the points of attachment. The sheer clamps go on first, then the side stringers.

Recheck to be sure that the frames are vertical to the base line and square to the keelson. Removing one clamp at a time, attach the strips permanently to each frame and stem and stern. Cut the sheer clamps at an angle for a good fit at stem and stern and use two screws at an angle.

Pilot drilling of screw holes is important for a tight joint and the best way to arrive at the proper drill size is to experiment. With No. 6 screws, try a 3/32-in. drill on scrap wood. The flathead screws require countersinking, and drilling depth for the pilot hole should allow for total depth of the screw.

It is important in working with plywood that the screw go in straight in order to avoid splitting. If in doubt,

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clamp the frame at the point where the attachment is made. Screws can be dipped in glue, which acts as a lubricant, then helps to hold them.

When attaching the sheer clamps and later the stringers, start at the No. 3 frames and work both sides of the boat alternately toward the ends to prevent twisting the hull.

With the frames attached to the sheer clamps, you are ready to attach the 3T frames and bow and stern battens. Place the frames 7 in. from the No. 3 frames and attach with a single screw through the sheer strip. Next attach the battens and the cockpit sides. This makes the cockpit 22 in. wide and 36 in. long.

Working with the paper patterns from which the frames were cut, mark the positions of all the stringers on the frames. Attach the B stringers first, working as you did with the sheer clamps on alternate sides both forward and aft. The finished hull will be very strong, but during construction it is subject to twisting, and care must be taken to avoid this. Attach stringers D, E and F in pairs and in that order just as you did with stringer B. Stringers A and C go on last and in that order.

The frame is now complete and ready for planing. If you're handy with a plane it would be the first choice because it is fastest. Otherwise, use the Surform Drum chucked in your electric drill. Slow to medium speed (not over 4000 rpm) is best. If you don't have a variable speed drill, use a Surform tool. After sanding, you are ready to varnish. Give the hull three coats of spar varnish.

We used 15-oz. canvas (78 in. wide) for the skin, but anything as long as it is fine-count and not lighter than 10-oz. will be fine. This part is a two-man job, with one tacking and the other pulling. Mark a centerline on the canvas lengthwise and lay it along the keelson. Start tacking at the center of the keelson and stretch the canvas as you go, tacking every 6 in. with ⅝-in. copper tacks.

Work as far as the start of the stem and stern curve. Then go back to the center of the boat and stretch and tack for about a foot along one sheer clamp, spacing the tacks about 3 in. apart. Then go to the other side and do the same. Next add tacks between to reduce the spacing to 1 in. Continue along both sheers alternately, working toward bow and stern and working out the wrinkles toward the ends.

With tacking complete along the keelson and sheers, cut the untacked canvas along the centerline. Pull it around the stem or stern and tack in place. Trim off excess. Apply canvas cement liberally and pull the other side tightly across and tack. Trim off excess. Apply more cement, and cement and tack an extra 4-in.-wide strip of canvas over the seam.

Trim excess canvas about ¾ in. from the sheer clamps and use it to cover the decks. Start at the end and work toward the cockpit, pulling the canvas tight to keep it smooth. Tack at 1-in. intervals. Finish by tacking over frame 3T, trimming the canvas where it overlaps at the sheer clamps and cementing in place.

Shrink the canvas tight by wetting it with a sponge and plenty of water. When dry, apply a first coat of nitrate fungicidal dope cut 50 percent with thinner. Do this outside because of fumes, which are flammable. When the first coat is dry, apply a second coat with only 10 percent thinner added. Final coats are butyrate dope, and each coat causes further shrinkage and tightening of the canvas.

Finally, make a keel if desired and after shaping and varnishing, attach with canvas cement and wood screws. A kayak without a keel can be turned in almost its own length but is subject to drifting more easily in a crosswind. A cockpit coaming can be added and the set back is made of scraps to fit the boat. In case of a leak in the canvas, just apply a patch with cement. Built with care and kept dry in storage, King Canvasback should be around for your grandchildren to enjoy. ●

PLANS AVAILABLE

Large-scale plans costing $5 are available for building King Canvasback. Order from Mechanix Illustrated Plans Service, Fawcett Bldg., Greenwich, Conn. 06830. Ask for Plan B-8-73 and include payment.

