



This pram is buoyant and easy to maneuver. Three is company in it, but four's a crowd.

# CAR TOP BOAT

Here's just the boat to take along when you try out that new fishing territory you've heard about

By EDWARD R. LUCAS

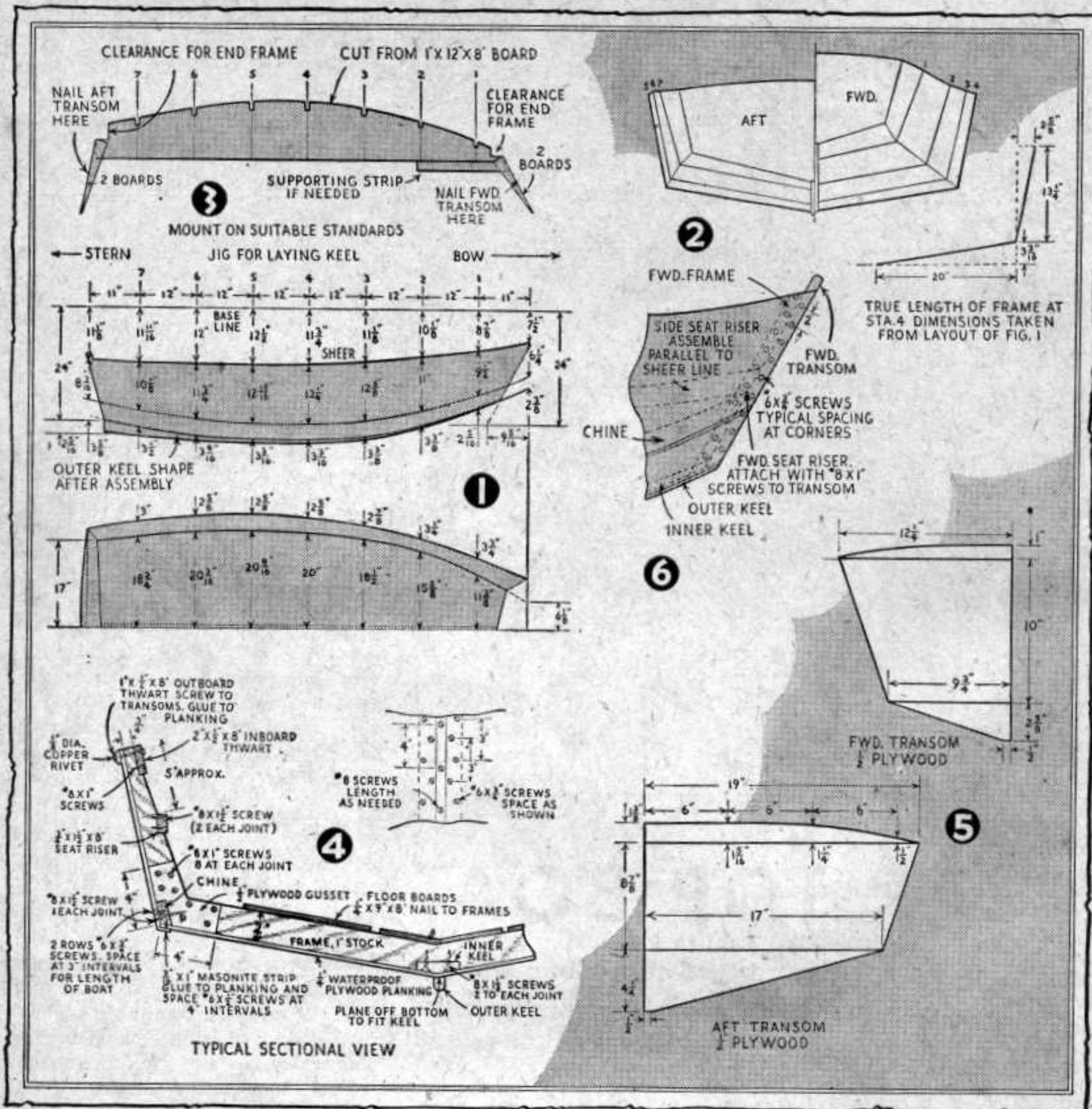
Craft Print Project No. 54

IF YOU'RE a lake fisherman who likes frequent changes of scenery, this light weight car-top boat will permit you to drop a line in any body of water to which your car is able to transport you. Or if a non-fisherman who just likes to spend an occasional day on the water, your radius of enjoyment will be expanded well beyond its present limits. Although an ideal two-person boat, the semi-V bottom and pram type construction make possible the accommodation of three individuals without swamping.

After gathering all necessary materials, the first step will be to lay out the "loft pattern" shown in Fig. 1, and the true lengths for the frames at the seven stations as in Fig. 2. This may be done on any suitably flat surface (the

living room floor excepted), such as a large piece of plywood or the basement floor. The loft lines may be drawn with the aid of a loftsmen's spline and weighted "ducks," or a thin strip of plywood held with suitable weights at various points as needed. Dimensions for laying out the true lengths and angles of the frames can then be taken directly from the loft pattern. Accuracy in layout will eliminate much potential future trouble you might have at its source.

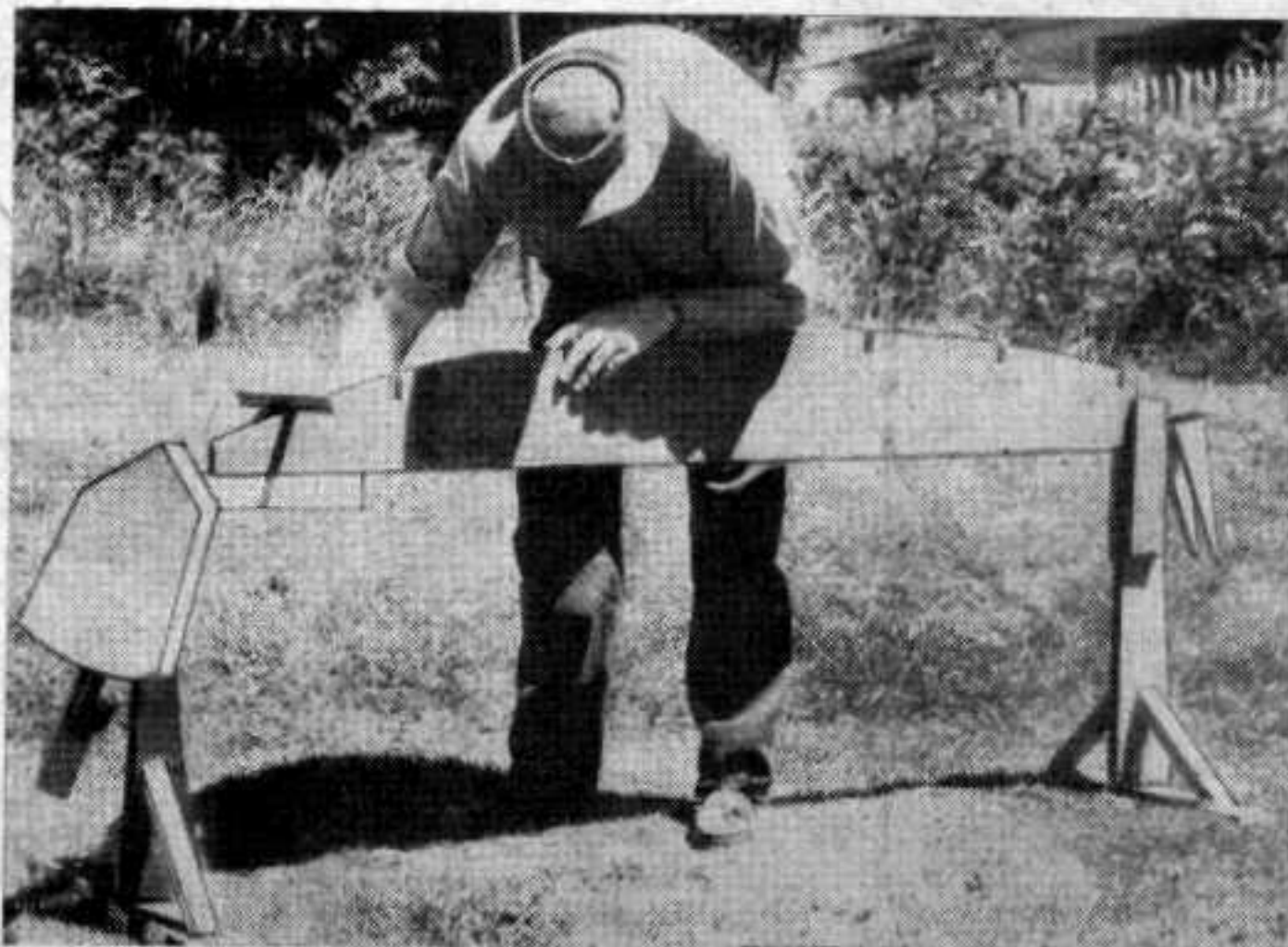
Next job will be to make the jig which will be needed for laying of the keel. This should be made of a straight, well seasoned 1 inch by 12 inches by 8 foot board, sawed and planed as in Fig. 3, to conform to the inner keel line as laid out in Fig. 1, and slotted at each station to hold the frames. Before sawing, true up the opposite edge to have a good reference line from which to work. Depth of slots should be such that the bottoms of the frames, when inserted, will extend  $\frac{3}{4}$  inch, or the thickness of the inner keel, above the curved surface of the jig. A step must also be left at each end to give clearance for the two end frames which are attached to the transoms. Then nail two boards of convenient size to each end of the jig to position

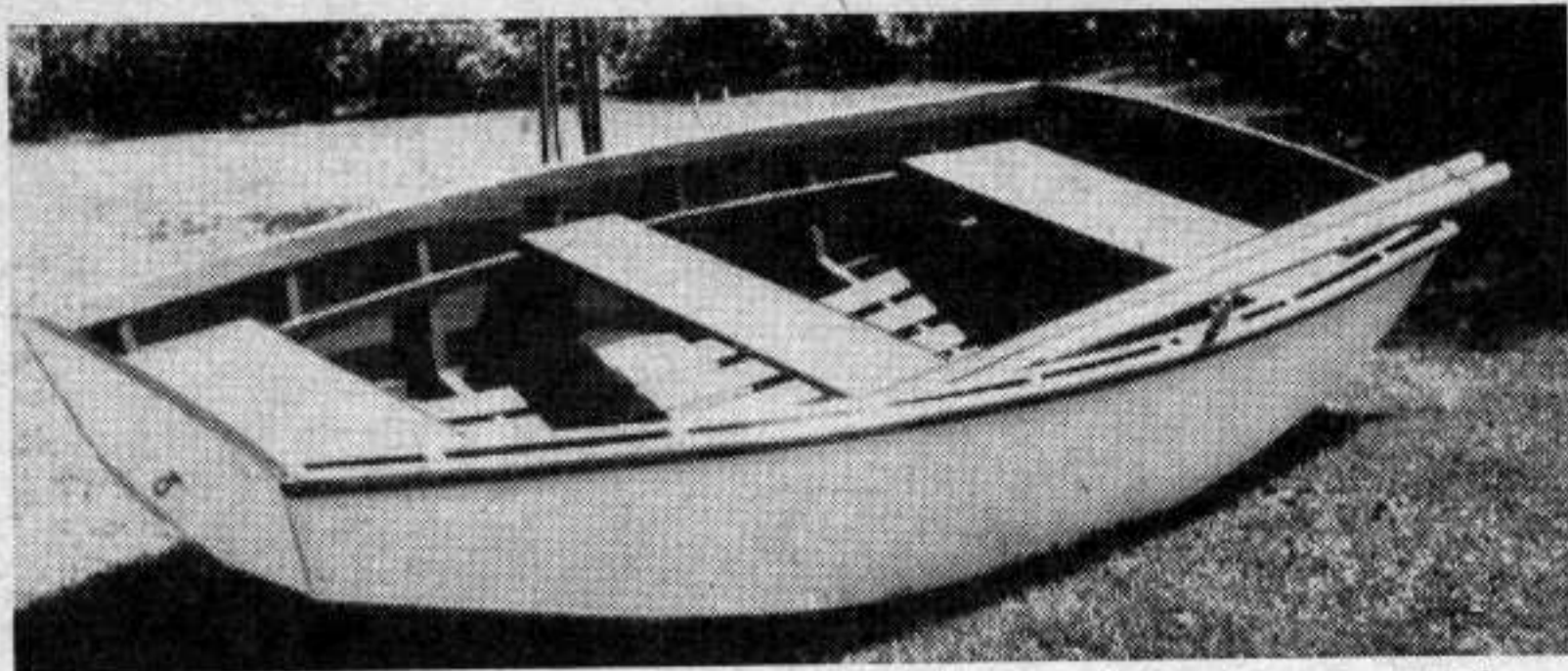


the transoms at the location and angle shown on the loft pattern, and then mount them on standards of suitable height.

The frames are made in four sections, as shown in Fig. 4, the outside dimensions being taken from the layout in Fig. 2. Two inch by 3/4 inch stock with the side pieces tapered to 3/4 inch at the top will give a good, rigid framework. Glue all four sections of all frames together and attach the plywood strengthening gussets at each corner as shown. A procedure which will

With forward transom installed, the jig is given a final check before assembly is begun in earnest.





No mooring problem here. This lightweight, easy-to-handle boat can be stored in the yard in summer, in the basement during winter months.

#### LIST OF MATERIALS

- PLANKING**—2 panels 1/4" waterproof plywood, 4' x 8'.  
**INNER KEEL**—3/4" x 3" x 8' pine or spruce.  
**OUTER KEEL**—3/4" x 3" x 8' oak.  
**CHINE**—3/4" x 1 1/2" x 8 1/2' pine. (2 pcs.)  
**SEAT RISERS**—3/4" x 1 1/2" pine (24 linear feet)  
**TRANSOMS & GUSSETS**—1/2" plywood (waterproof). Approx. 12 sq. ft.  
**FRAMES**—3/4" x 2" pine (Approximately 72 linear feet.)  
**INBOARD THWART**—1/2" x 2" x 8' pine—2 pcs.  
**OUTBOARD THWART**—1/2" x 1" x 8' pine—2 pcs.  
**FLOORING**—1/4" x 9" x 8'—3 pcs.  
**MOTOR MOUNT**—3/4" x 7" x 13" waterproof plywood.  
 2" x 7" x 1/8" aluminum or steel.  
**SEATS**—1" lumber as needed.  
**PROTECTING STRIPS**—1" wide masonite strips, 8 1/2' long—2 strips.  
**JIG**—1" x 12" x 8' board.  
**FASTENINGS**—Oar locks and oars.  
 #6 x 3/4" flat head screws—4 gross.  
 #8 x 1" flat head screws—14 dozen.  
 #8 x 1 1/2" flat head screws—1 gross.  
 #6 x 1/2" flat head screws—5 dozen.  
 1/8 dia. copper wire as needed for rivets.  
 1 lb. more or less of waterproof glue.

be helpful later on will be to cut the side sections several inches longer than necessary, and after the glue has set, nail a straight brace to connect the protruding ends of the side sections. This will strengthen the frames considerably during the crucial assembly on the jig, and the sections can be sawed to correct length, after assembly. Transoms are cut as shown in Fig. 5, the dimensions noted allowing ample stock for shaping on the jig. The patterns for the two end frames, which are glued and screwed to the transoms at this point, are copied from the transoms. They should, however, be allowed to extend about



You'll probably grunt a bit if you try this by yourself, but it can be done without dislocating a vertebra. Weight of boat is 93 pounds.

1/4 inch beyond the edge of the transoms for shaping to the contour of the shell.

In assembling the framework, be sure to select a reasonably level floor on which to stand the jig, as alignment of the frames can be most easily accomplished with the floor as the reference base line. Screw the transoms to the end pieces on the jig, positioning them carefully, then place the frames in

their corresponding slots, and notch to receive the inner keel. If you prefer to cut these notches before assembly, be sure to leave enough stock so the bottoms can be shaped to the contour of the jig at this point. The two prerequisites before installing the keel will be to make sure the frames are square with the jig, and are also level with the floor. You can now lay the keel, attaching with waterproof glue and two No. 8 screws as shown in Fig. 4, to each of the nine frames. Before the glue has set, re-check alignment of the frames and make any adjustment which may be needed.

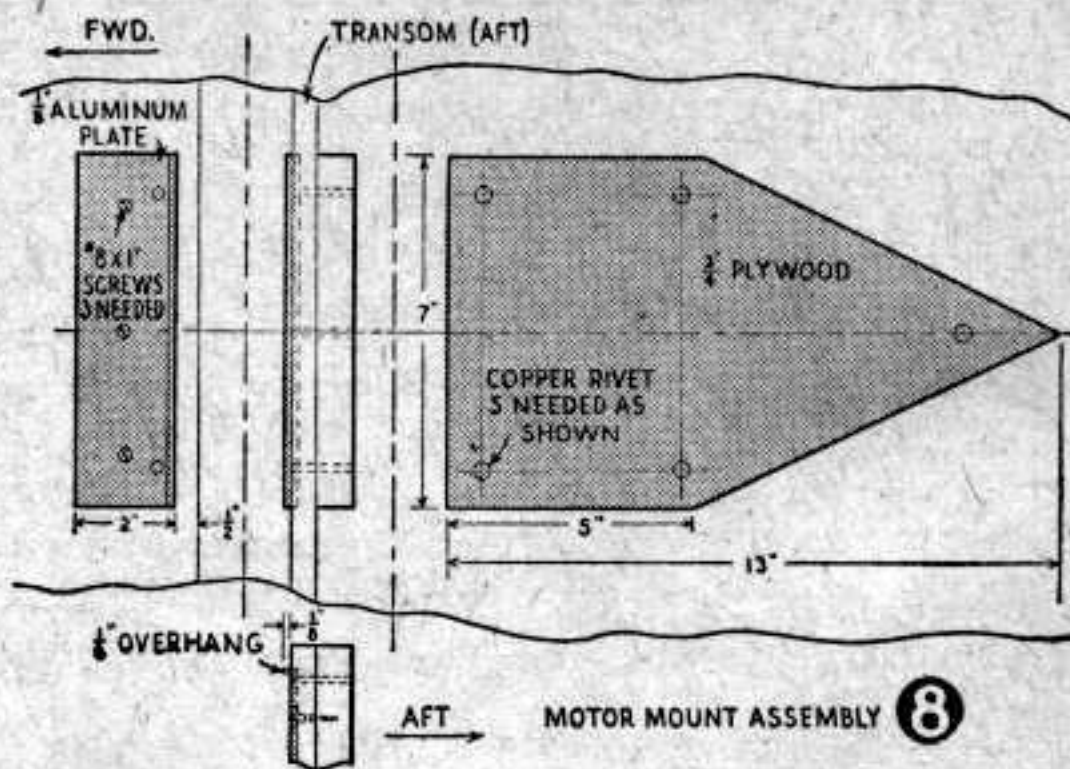
Unlike the keel, the two chines must be steamed for sufficient flexibility. Since it will hardly be

worthwhile to build a steam cabinet, however, the same result can be obtained by wrapping the chines in rags, propping them at an angle, and running a small stream of warm water over them for about four hours. The shape of the notch in the corners of the frames can then be approximated by holding the chine against the frames. This is not an exact method, but will be completely satisfactory since the notches can be cut a little shallow, and the chines planed to suit the shape of the shell after the glue has hardened. Attach as in Fig. 4, by gluing and with one No. 8 1½ inch screw at each joint. After the glue has set, plane both chines and inner keel, as well as the frames and transoms, to receive the planking.

Preliminary work on the planking consists of sawing each of the two 4 by 8 foot panels of waterproof plywood into 2 by 8 foot sections. Then fit to conform to the shape of the framework. In addition to being glued to all touching surfaces of the framework, the panels should be securely screwed as detailed in Figs. 4 and 6. Then plane off the bottom just enough to fit the outer keel, and attach as noted in Fig. 4. Since the outer keel will taper from ¼ inch at the bow to approximately 2½ inches at the stern, screws of varying lengths will have to be used. For added security, a ¼ inch diameter bolt through inner and outer keel can replace the last screw at the stern. Two 3/16 by 1 inch strips of masonite can also be added to reduce

wear on the bottom edges (Fig. 4). When the glue has set, withdraw the screws which hold the transoms, and remove the nearly completed boat from the jig for the less critical finishing touches which are to come.

Outboard and inboard thwarts can be attached (Fig. 4), with a piece of ⅛ inch diameter copper wire riveted over a small brass or copper washer at each end, for each joint. The side seat risers are attached as shown approximately 5 inches below the sheer line, and the end risers as in Fig. 6. Nail the floor boards in place, and attach the three seats to the risers with No. 8 1½ inch screws. Locate the center seat and two blocks for the oar locks as in Fig. 7. Flush oar locks are advisable to prevent marring the car roof.



An excellent outboard motor mount can be assembled as in Fig. 8, with the plywood block on the outside of the transom and aluminum plate bent over as shown, attached to the inside. The overhang will prevent the motor from suddenly pushing itself off the mount and into the water, a mishap which all too often happens when improperly clamped.

Paint as desired, and the job's complete. Then your car and boat, you'll find, will soon be virtually inseparable, at least in summer.

● Craft Print No. 54 in enlarged size for building this car top boat is available at 25¢ each. Address Craft Print Dept. B-48, SCIENCE AND MECHANICS, 49 East Superior St., Chicago 11, Ill.

