"WHITE DUCK"

Flat Bottomed 14-Foot Rowboat

Craft Print Project No. 77

USES: Principally a knockabout boat for the summer cottage, for fishing, hunting. Ideal for shallow waters; adapted to protected waterways; may be rowed or propelled by outboard motors 1 to 6 hp.

LENGTH: 13 ft. 6 in. Commonly called 14 ft.

BEAM: 4 ft.

DEPTH: 15 in.

WEIGHT Complete: 200 lbs.

SEATING CAPACITY: 5 persons.

CONSTRUCTION: Planking over frames.

TYPE: Flat bottom, pointed bow.

Three days' time, a few dollars for materials, ordinary carpenter's tools, and just everyday good workmanship are all that is necessary to turn out a rowboat like this one.

THIS universal flat bottom rowboat (let's call it the "White Duck") is one of the most versatile craft that can be built. Its simple, inexpensive construction and substantial design make it a safe boat for sport or recreation anywhere. It is especially well adapted to easy construction and is designed to be built from 14-foot lumber normally available almost anywhere.

Easily rowed or propelled by small outboard motors from 1 to 6 hp., it is seaworthy and stable on any waters and has the cacapity of much larger boats. The finished weight of the boat depends upon the use of lightweight materials. Marine plywood ⅜ inch thick may be used for bottom and side planking to make a lighter weight craft for carrying atop an auto, although the rowboat as shown here may be easily handled by one man and trailed anywhere on a pair of wheels.

Ordinary carpenters' tools such as hammer, saw, screw driver and a few "C" clamps are necessary, a small amount of money for materials and two or three days' time should see the boat completed.

To begin the construction make full-size paper patterns

MATERIALS LIST

Parts	Pieces	Finished Dimensions
Side Planking	2	¾"x11½"x14'
	2	¾"x 3½"x14'
Bottom Planking	6	¾"x 7½"x10'
Seats	2	¾"x 5¾"x 8'
	2	¾"x 7½"x 8'
Keel	1	¾"x 3¾"x14'
Chines	2	¾"x 1¾"x14'
Transom and Frame	1	1¼"x 7¾"x 8'
	1	¾"x 2¾"x 6'
Moulding	2	¾"x 1¼"x14'
Seat Risers	2	¾"x 1½"x12'
Side Frames	2	¾"x 3" x 8'
Rear Seat Supports	1	¾"x 3¾"x 8'

Kinds of wood, for above: Cedar, white pine, cypress, marine plywood or spruce.

Mould Frames	2	¾"x 3¾"x14'

Kind of wood, for above: Any rough lumber.

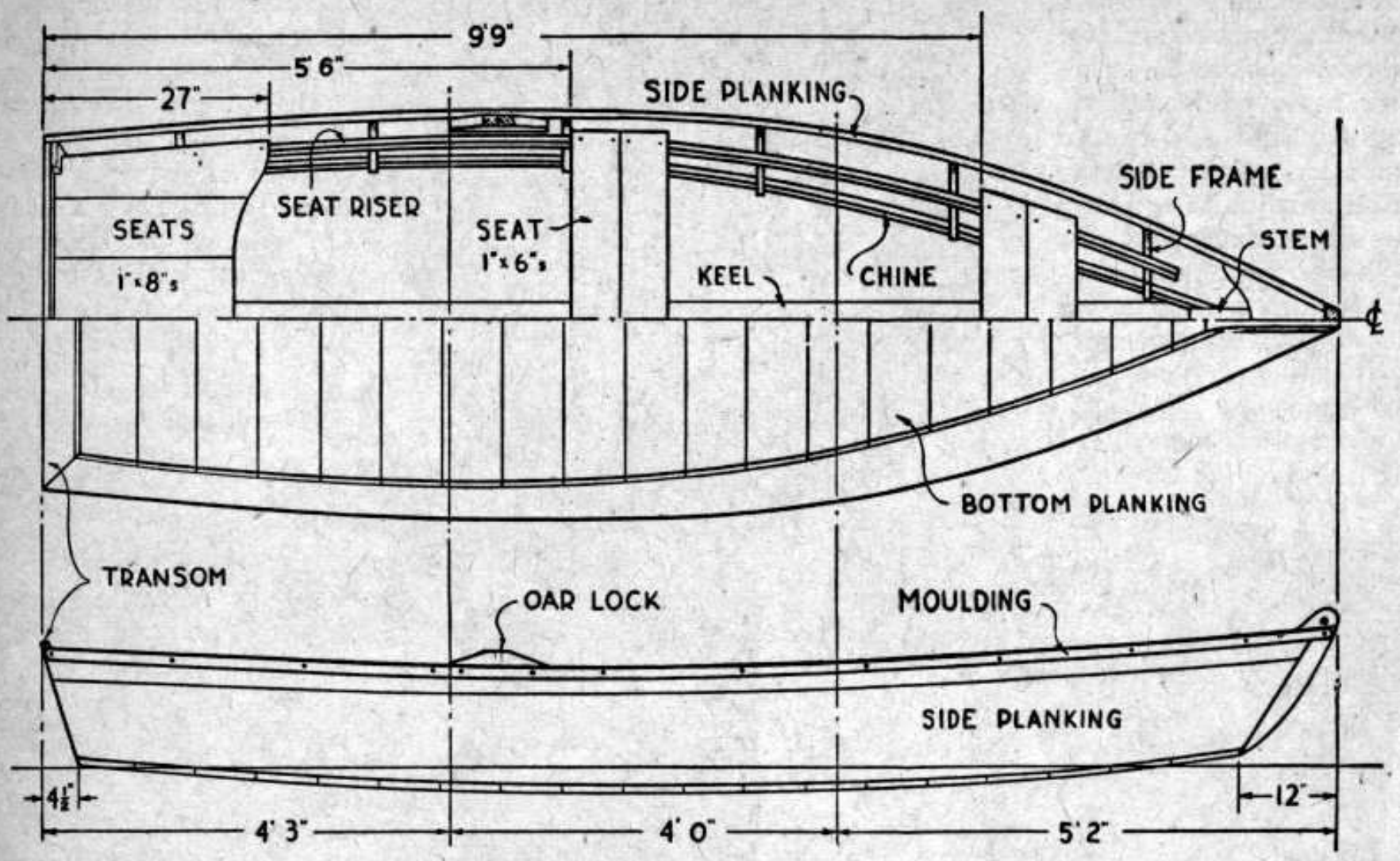
Stems (Inner)	1	2½"x 4" x24"
(Outer)	1	2½"x 2" x24'

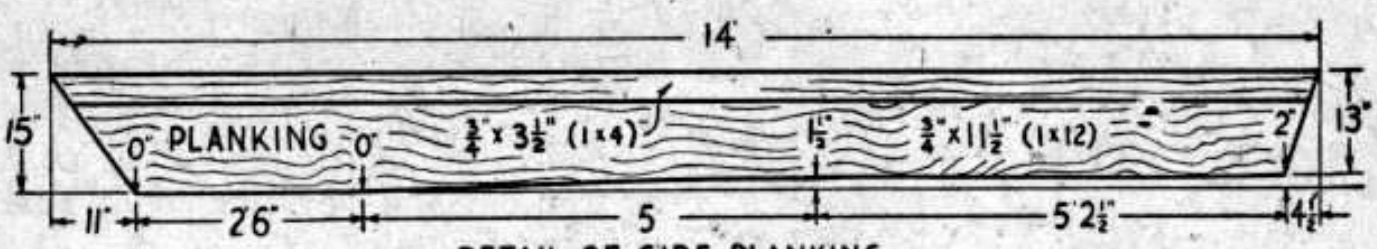
Kind of wood, for above: Oak, elm, or hard pine.

FASTENINGS REQUIRED

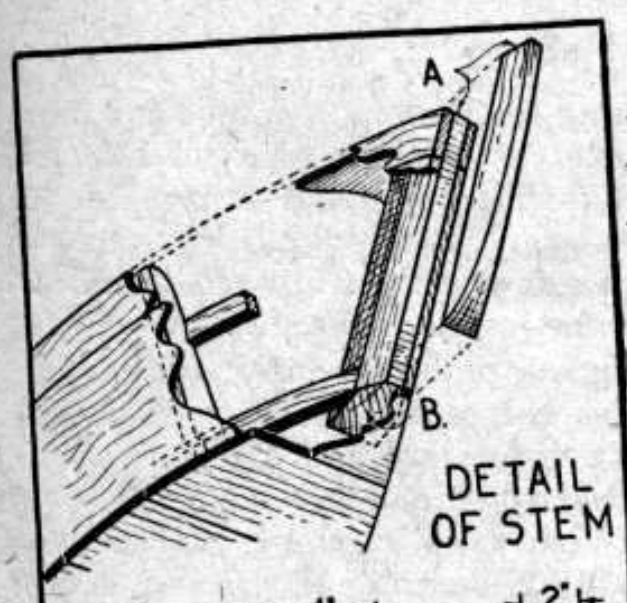
4 Gro.	1½" No. 10 f.h. screws	Brass, galvanized, or cadmium plated
2 Gro.	1¾" No. 10 f.h. screws	
1 Doz.	3" No. 10 f.h. screws	
4	¼"x3" Carriage bolts	
2 Rolls	Candle wicking (hardware or plumbing shop)	
1 Gal.	Paint (porch and floor enamel) desired color	
2 Lbs.	Seam compound	

Muslin or flannel strips and marine glue or white lead.

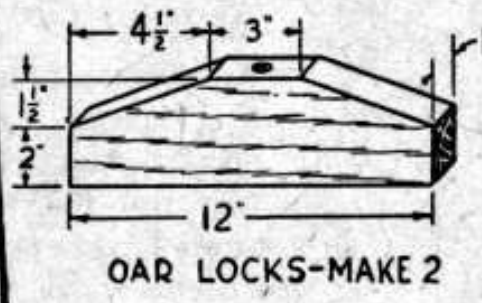




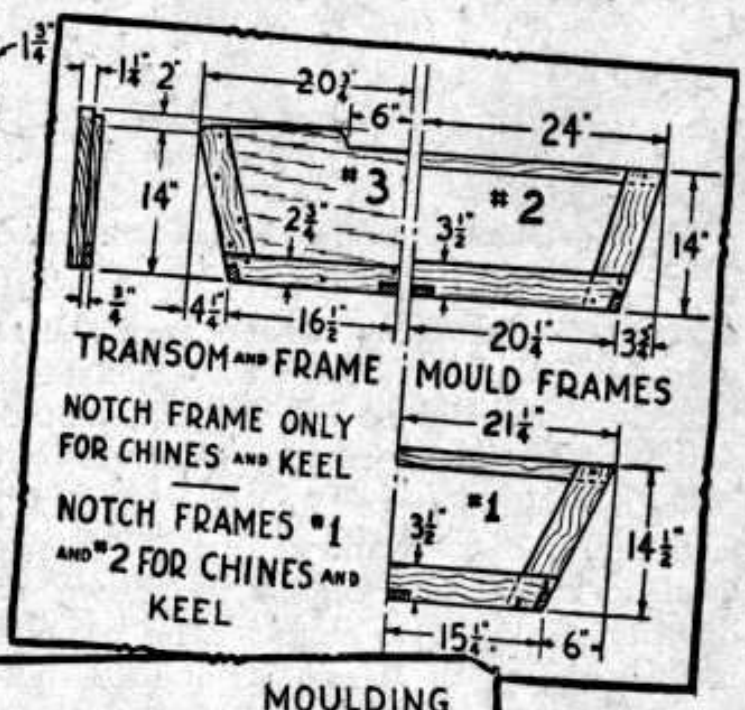
DETAIL OF SIDE PLANKING



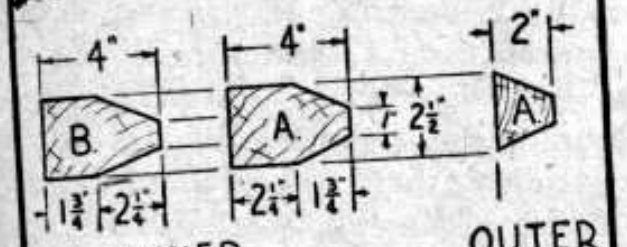
DETAIL OF STEM



OAR LOCKS-MAKE 2

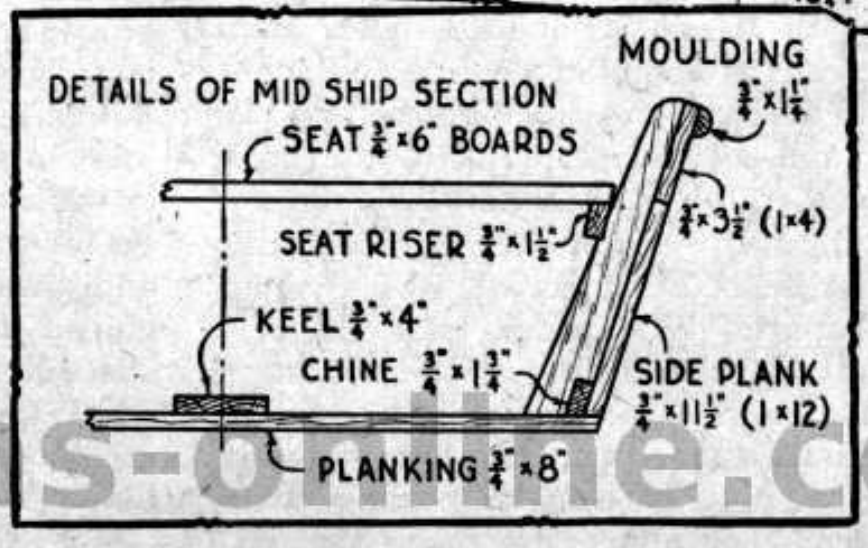


CAULKING JOINT

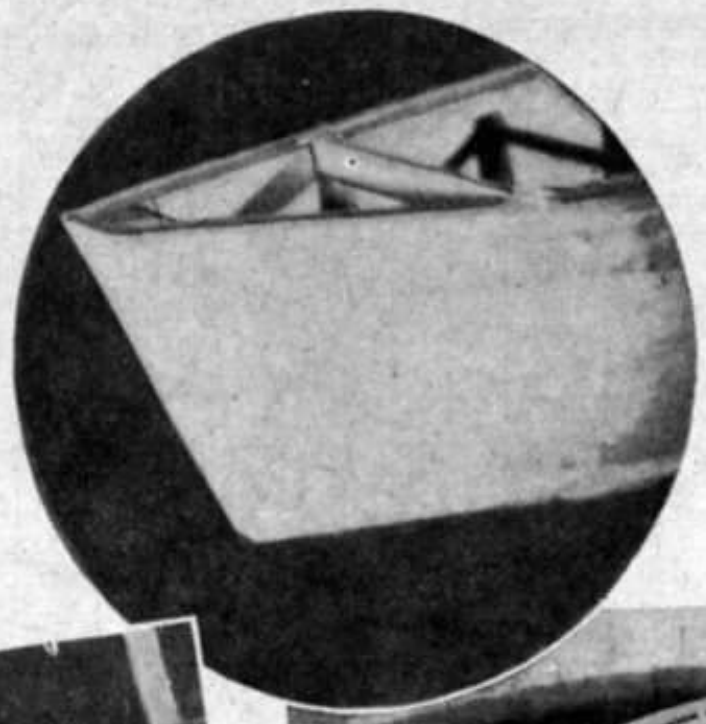


SECTIONS OF STEM

SIDE RIBS
MAKE TO FIT POSITION

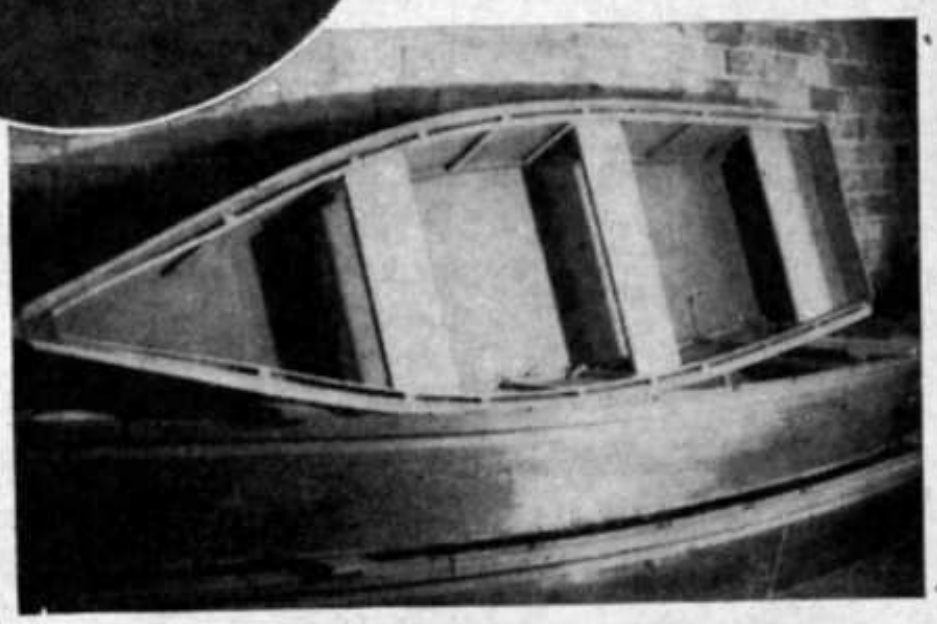


of transom and mould frames. Any common lumber may be used for mould frames as these are later removed from hull. Lay transom and mould frame material upon the patterns so as to conform to outline, mark and saw to shape. Nail moulds together with a piece across the tops to prevent mis-



Bow end before outer stem is put into place.

Side planking before chines are attached.



Hull is planked crosswise. Inwale is optional.

alignment and screw fasten frame to transom with 1½" No. 10 f.h. screws. Notches for keel and chines should be cut through mould frames and through frame only of transom.

Set moulds aside and laying side planking, consisting of a 1" x 4" and a 1" x 12" together, proceed to mark side planks as shown on plank diagram and saw to shape. The next operation is the shaping of stems. Leave the outer stem until all planking is completed while the inner stem is planed to shape and assembly begun. To prevent split and weakened joints in the boat, always drill and countersink for all fastenings.

Attach the forward ends of shaped side planks to stem with 1½" No. 10 f.h. screws spaced about three inches apart. With plank ends securely fastened, bend side planks in gradually, using a rope or similar method to tie the sides together and station mould frames and transom at intervals shown, fastening moulds temporarily with a few nails while side planks are screw fastened to transom with 1¾" No. 10 f.h. screws, double spaced. Before fastening planking to transom bevel edges of transom so planking lies evenly.

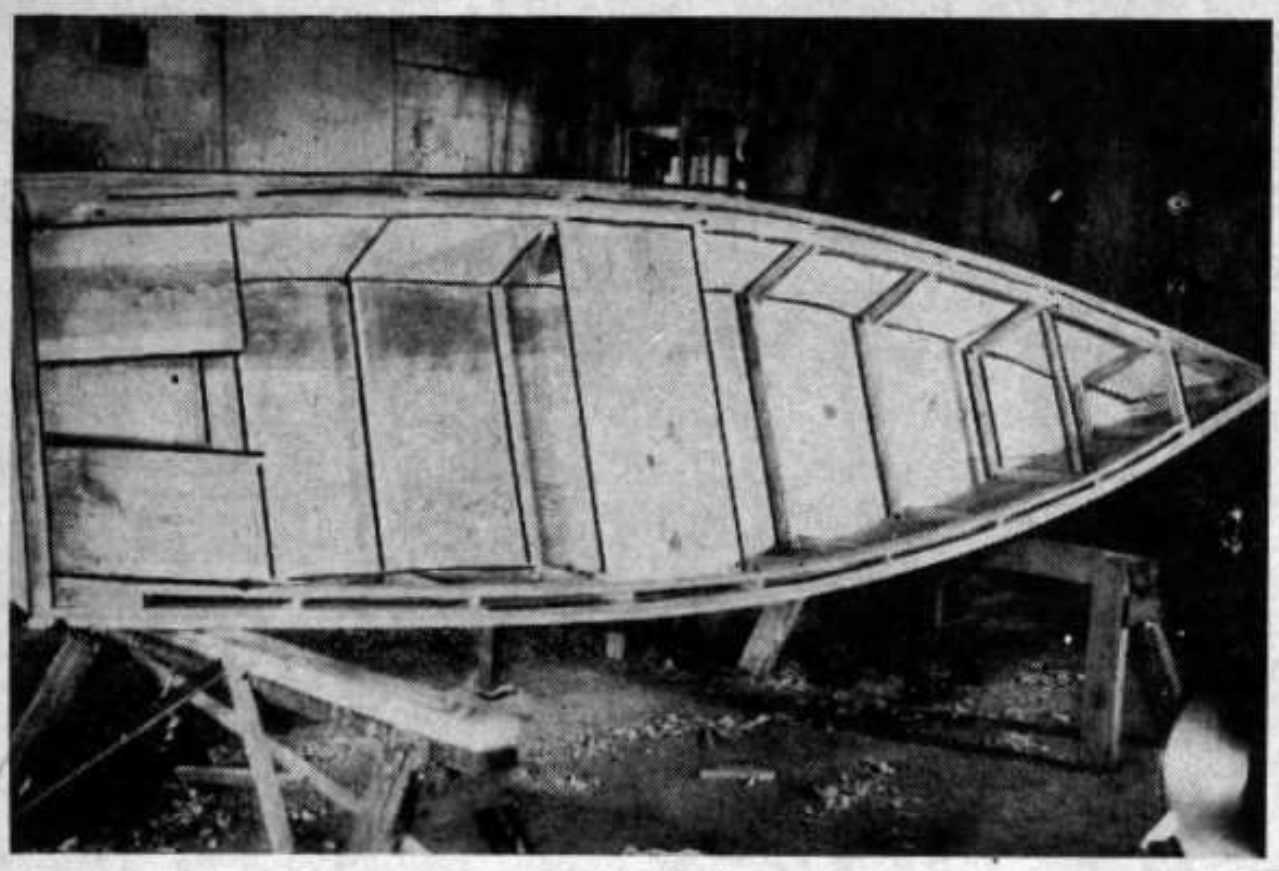
The ¾" x 4" keel is now slipped into the keel notches and screw fastened with 1¾" No. 10 f.h. screws at transom while fore end is butted against stem. Spring the ¾" x 1¾" chines in chine notches, fastening with one 3" No. 10 f.h. screw at transom and beveling to fit keel at forward end and fastening.

Aligning the Hull

Before planking the bottom, measure and align the hull to make certain both sides of boat are alike. A string stretched from center line of transom to center of stem with measurements made from each side will show any misalignment. To correct it, force hull into place.

With hull aligned, proceed to trim edges along chines evenly, so chines and planking edges follow an easy sweep forward and aft. Lay a batten across boat and plane chine and plank edges evenly or flatwise. Fasten chines to planking with 1½" No. 10 f.h. screws and proceed to coat edges along transom and chines with marine glue or white lead. Lay outing flannel strips on glued area, and begin planking by laying the board next to transom first. Each plank applied thereafter must have the edge planed with a vee joint to allow a ⅛-inch opening between planks, on outside. Planks must be butted tightly together on inside. This vee joint is later caulked and puttied. Fasten all planking to transom, chines, and keel with 1½" No. 10 f.h. screws space three inches apart. If desirable at this point ⅜-inch marine plywood may be substituted for the planking and fastened with 1⅛" No. 8 f.h. screws.

With the hull planking completed, trim plank edges smoothly along transom and sides. Turn



Same boat with lengthwise planking instead of cross planking, and with cross bottom frames added for rigidity.

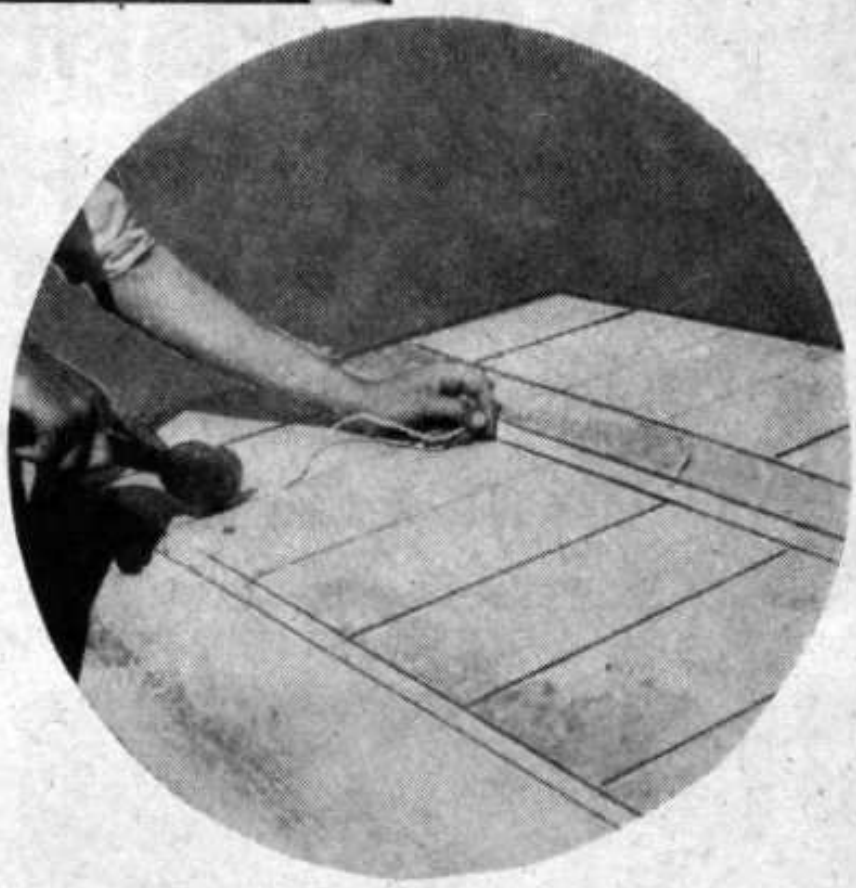
hull over and proceed to install seats. First construct twelve side ribs as shown and space six at 2-foot intervals along each side, screw fastening to side planking with 1½" No. 10 f.h. screws. Before removing mould frames, nail cross pieces to top edges to prevent change of shape. The ¾" x 1½" seat risers are now notched slightly into side ribs at height desired and screw fastened with one 1¾" No. 10 f.h. screw to each joint. Fasten securely.

The seat material is next cut to fit and rigidly screw fastened to seat risers with 1¾" No. 10 f.h. screws. To secure rear seat it will be necessary to fasten a 1" x 4" from side rib to side rib and also a 1" x 3" screw fastened to transom to which pieces the rear 1" x 8" seat boards are attached. Shape the outside stem as shown to form a nice curve, trim the edges of planking at stem evenly and fasten outer stem in place with 3" No. 10 f.h. screws. The ¾" x 1¼" sheer moulding is next attached around top edges of side planking with 1½" No. 10 f.h. screws spaced twelve inches apart. Space screws accurately.

To reinforce stem and ends of planking a breast hook piece is shaped somewhat as shown from a 2" x 12" x 12" and screw fastened in place. Oarlocks are fabricated from 2" x 4" pieces as shown, drilled and iron sockets inserted while locks are bolted to sides of boat with two ¼" x 3" carriage bolts to each lock.

Sand the hull smooth and varnish or paint. The bottom should be painted. Apply a thin coat of paint to bottom seams, and fill seams to within ⅛-inch of surface with cotton lamp wicking (purchasable at any hardware or plumbing shop) which should be rolled snugly or tamped into seams. Apply another thin coat of paint to caulked seams and fill seams flush to surface with elastic seam composition, which lasts for years. A fair substitute is equal parts white lead and whiting. Finish by painting or varnishing the hull with three coats of any desirable combination. Varnished seats and rub-rails look nice while outside and inside are painted contrasting colors. Floor boards are not necessary for this boat, while a 6½ to 7-foot pair of oars will complete our boat that is going to repay her construction handsomely in sport and pleasure for years to come.

"What'll we do for a fishing boat?" is the question many a camper-to-be asks, sometimes long before camping time arrives. At many fishing places it often is difficult or impossible to obtain a boat for one's exclusive use or even part time use.



Caulking the crosswise planked seams.

The answer is, "Build your own rowboat."

And that is just exactly the procedure we are going to recommend to our readers. Materials for the construction of a rowboat like the "White Duck" can nearly always be obtained near a fishing resort. Any lumber yard can supply the essential materials. If, however, the boat builder thinks certain materials cannot be obtained near his camp, there is a complete lumber kit especially prepared by one of the outstanding boat lumber companies, which can be taken with him to camp. The boat can be built quickly.

● Craft Print No. 77 in enlarged size for building the "White Duck" is available at 25¢ each. Address Craft Print Dept. B-48, SCIENCE AND MECHANICS, 49 East Superior St., Chicago 11, Ill.