

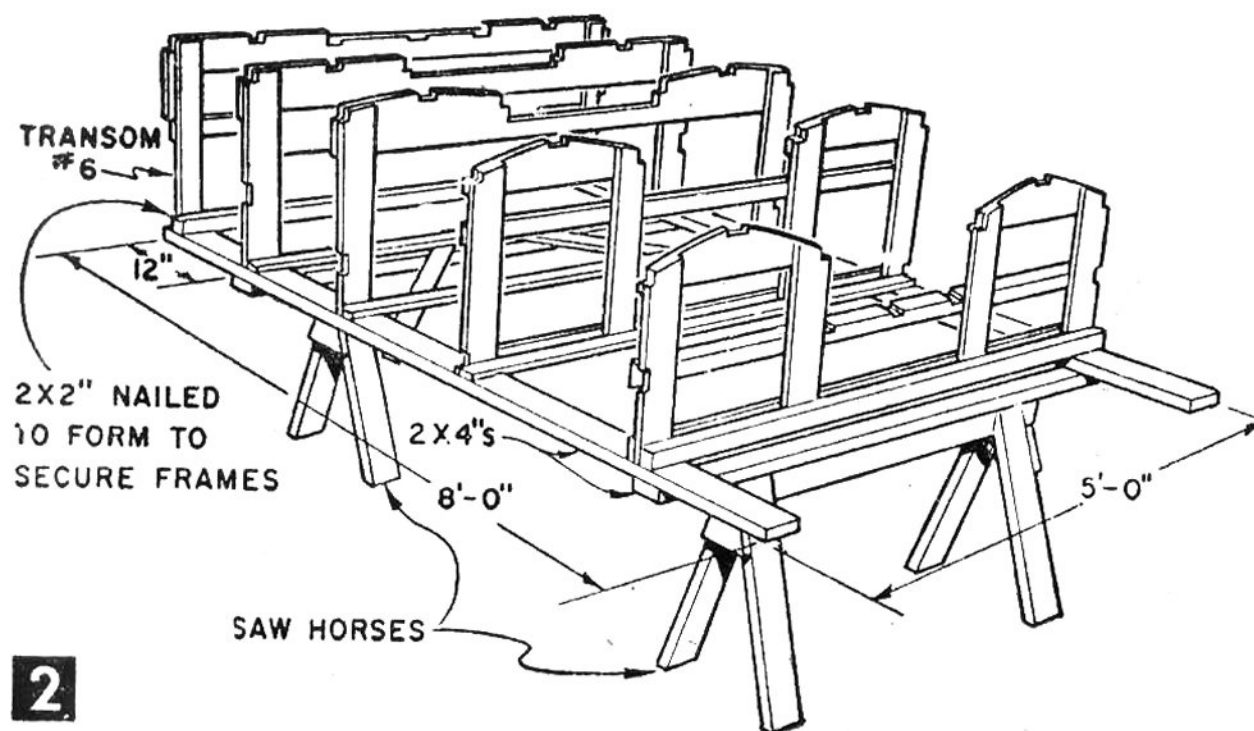
## Swift Swoose

By WILLIAM JACKSON, N.A.

**A**N ODD looking craft, the *Swoose*—but she'll do up to 45 *mph*, is stable as a church pew and she becomes practically airborne when heading into a stiff breeze full tilt. When planing, the *Swoose* rides on only 12 sq. in. of bottom, distributed between both hulls. It's the air flowing through the tunnel between catamaran hulls that lifts the *Swoose* almost clear of the water and keeps water surface friction to a minimum.

Materials for building *Swoose* are available at most lumber yards—fir for framing, oak or yellow pine for longitudinal structural members and AB grade DFPA exterior plywood.

*Swoose* is built upside down on a form (Figs. 1 and 2) laid over sawhorses. Cross pieces to locate frames are attached to the form later along with frames. Build frame subassemblies #2 through #6 according to Fig. 11. Sides are vertical and exactly 60 in. apart. No. 6 transom and frame is faced with  $\frac{3}{8}$ -in. plywood outer skin over the frame. Coat contacting surfaces with *Weldwood* glue and nail plywood to framing with 1-in. galvanized or aluminum nails, spaced at 2 in. If you prefer, use #8 x 1-in. *fh* screws. On frames #2 through #5, secure chine joints with  $\frac{3}{16}$  x 2 $\frac{1}{4}$ -in. *rh* stove bolts with washers under heads



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### Craft Print Project No. 199

**USES:** Powered adaptation of Polynesian Out-rigger Boat. Wide beamed, fast sports catamaran for use on sheltered waters, with outboard motors from 5 to 25 hp. with speeds up to 45 mph. Safe due to wide beam.

**LENGTH:** 10 ft. Over All

**BEAM:** 5 ft.- $\frac{1}{2}$  in. Over All

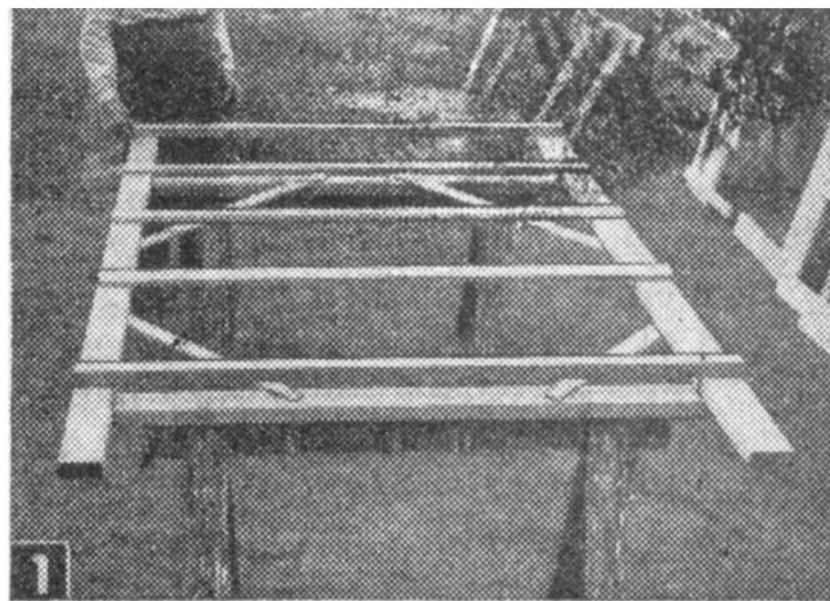
**DEPTH:** 22-in.

**WEIGHT:** complete 150 lb.

**SEATING CAPACITY:** 4 persons

**CONSTRUCTION:** Plywood covering framework.

**TYPE:** Streamlined twin hull shape, with specially designed tunnel to produce lift.

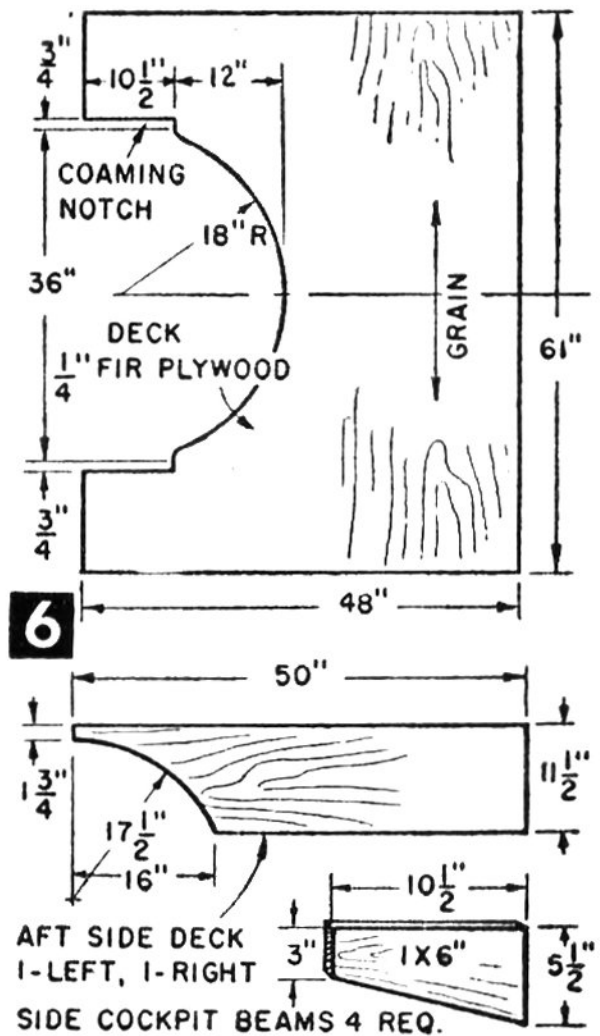
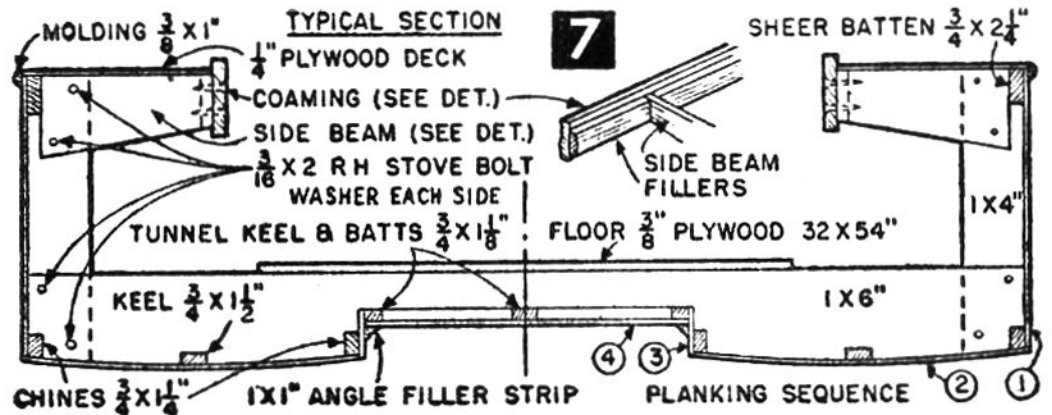
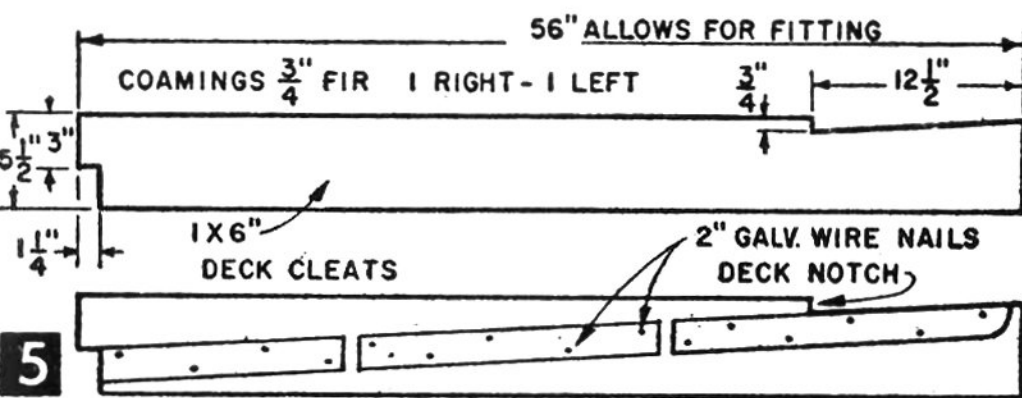
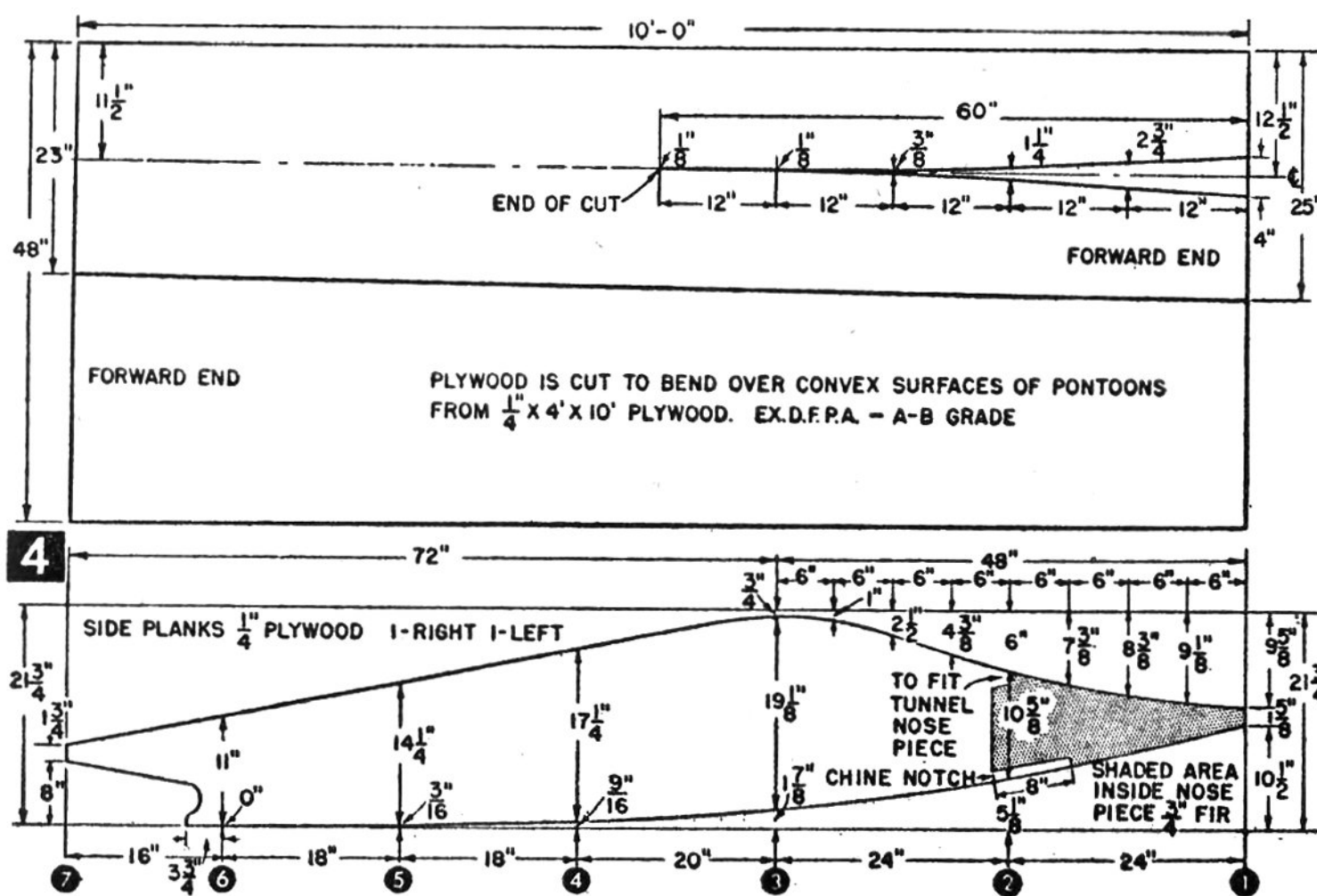


Simple rectangular form locates frames. Sides are exactly 60 in. apart at all stations.



Shear batten sawn to shape of side.





and nuts. Secure cross pieces to #2 and #3 frames with #8 x 1 1/2-in. *fh* screws. Temporarily screw 1 x 2 extensions to #6 frame to reach form. Other frames' side members extend to frame. Trim flush with top after planking.

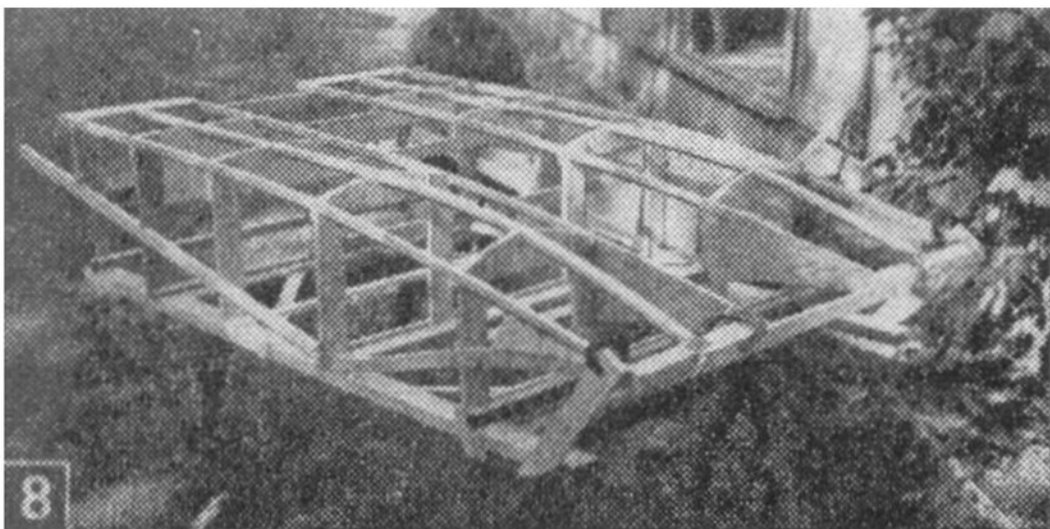
Lay out sides from dimensions in Fig. 4 directly on 1/4-in. plywood. Saw out one side and use it for a pattern to saw the opposite side.

To start assembly, mark form to locate frames #2 through #6. Temporarily screwfasten frames to 1 x 2 cross pieces; then nail these cross pieces to form to locate frames, which must be square with form. Nail 1 x 2 temporary battens to hold frames in place until final battens and chines are notched in.

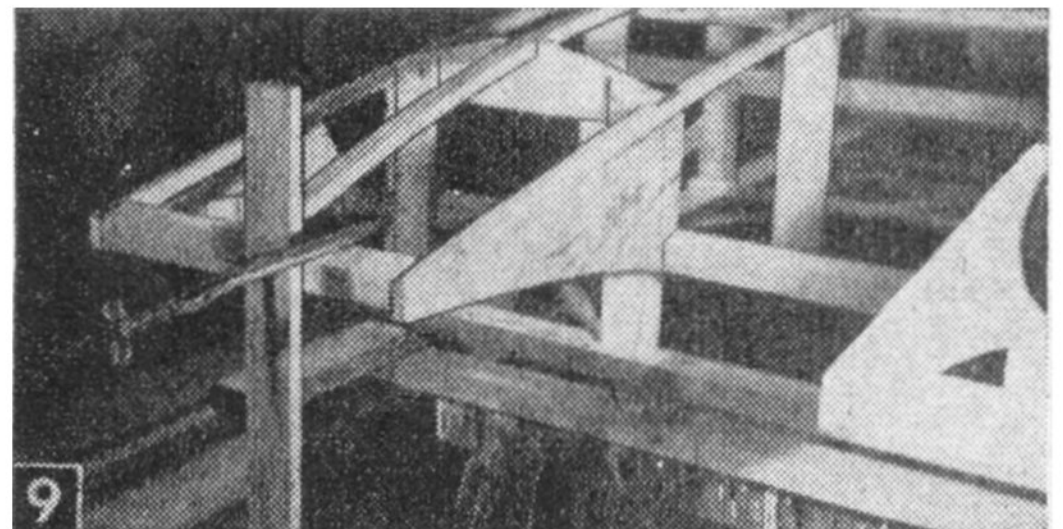
Clamp side planking in place and check to see that all framing lines up properly; then take the framing apart, unscrewing frames from form cross pieces. Notch frames for chines and keels (Fig. 11) and notch the #2 frame for the aft edge of the tunnel planking forward of #2 frame.

Shape fore end of tunnel planking using side as pattern. Return frames to form again temporarily and use side to mark shape of a sheer batten 3/4 x 2 1/4 in. Saw batten to shape with a joint between curved forward part and straight section just aft of #3 frame (Figs. 3 and 10). Position side planking along upright frames and mark each frame along top sheer edge. Remove side planking again and notch sheer battens flush into frames. Glue and screwfasten sheer batten to frames with two #8 x 1 1/2-in. *fh* screws at each joint. Screwfasten fore end tunnel pieces to #2 frame with four #8 x 1 1/2-in. *fh* screws to each piece. Bevel the two stem ends (Fig. 11) and screwfasten between sheer batten and fore end tunnel pieces with one #10 x 2-in. *fh* screw at each joint.

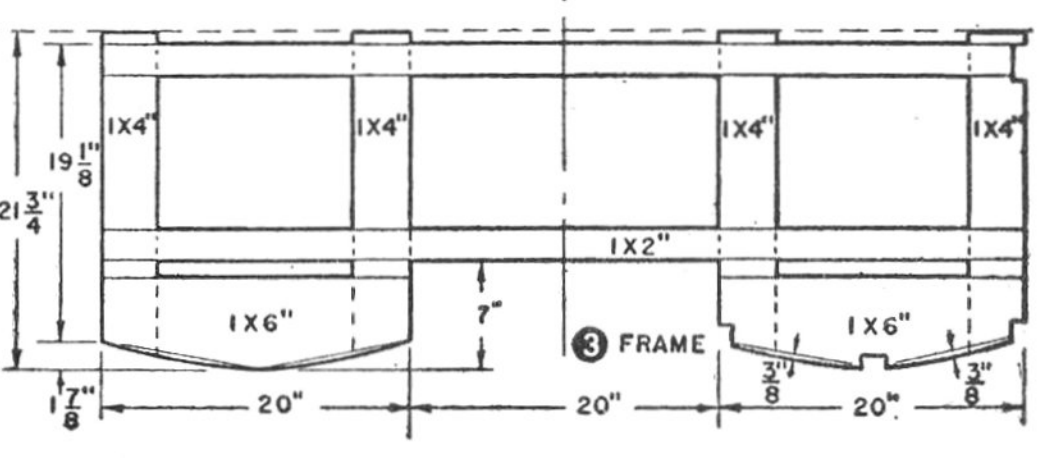
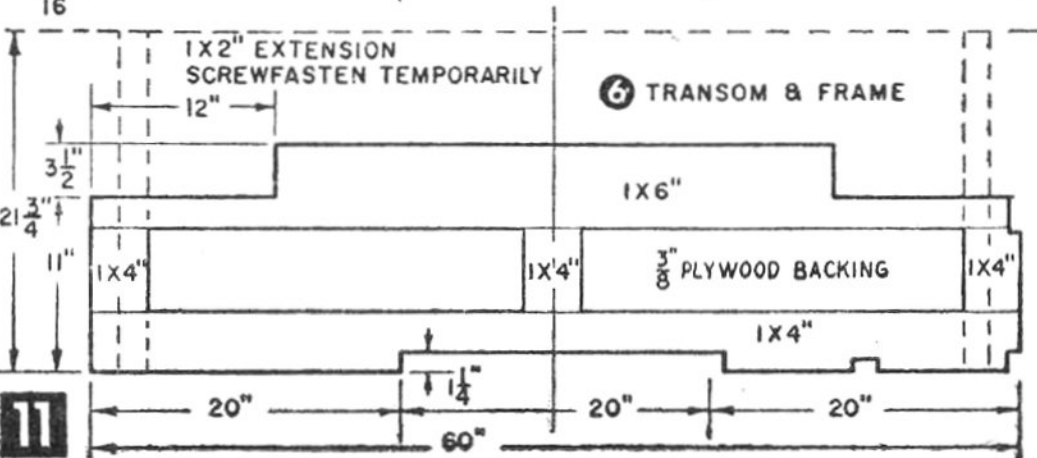
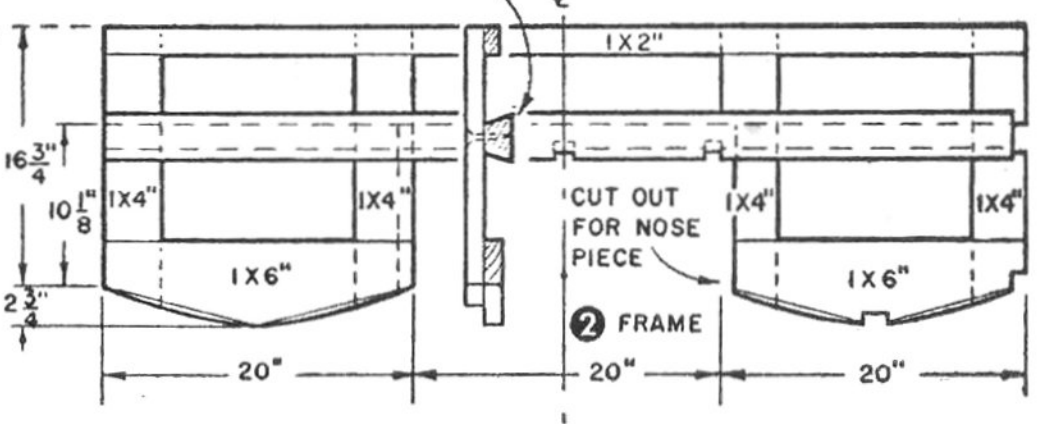
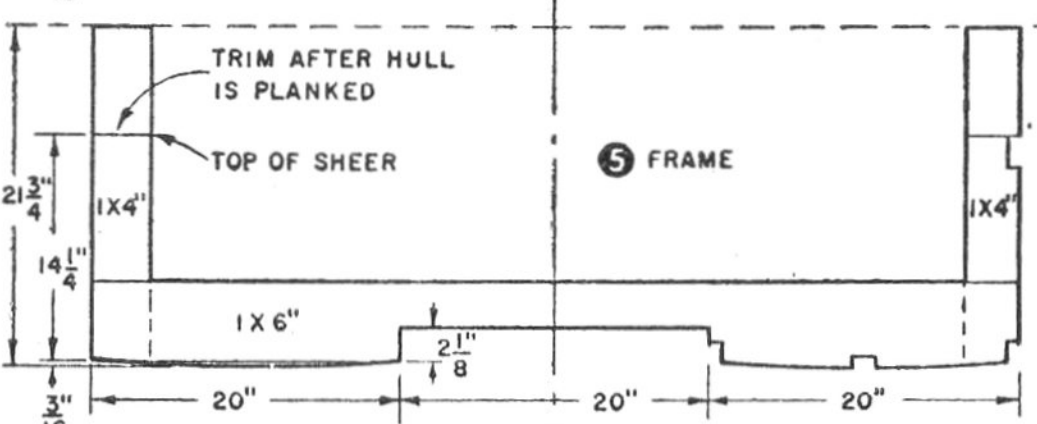
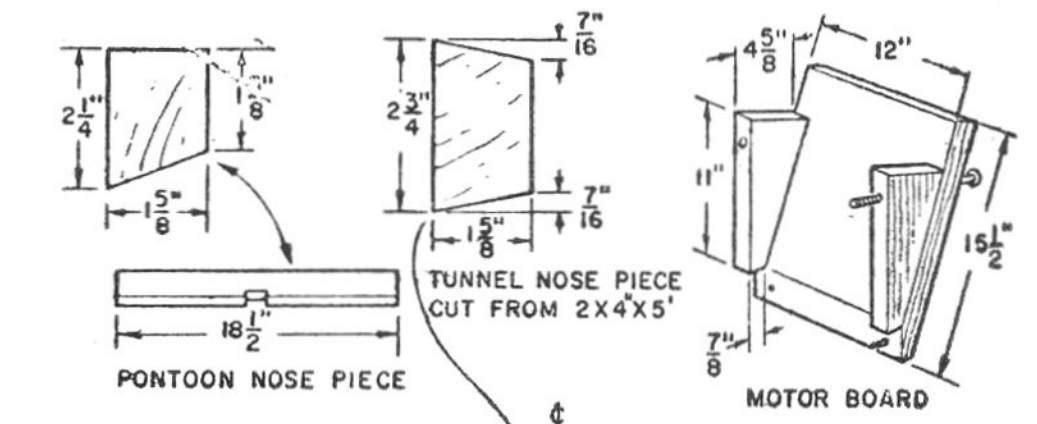
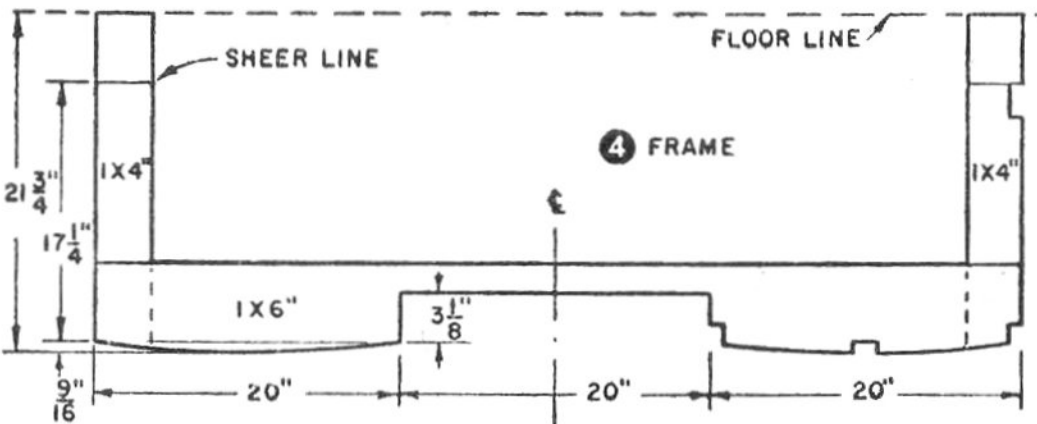
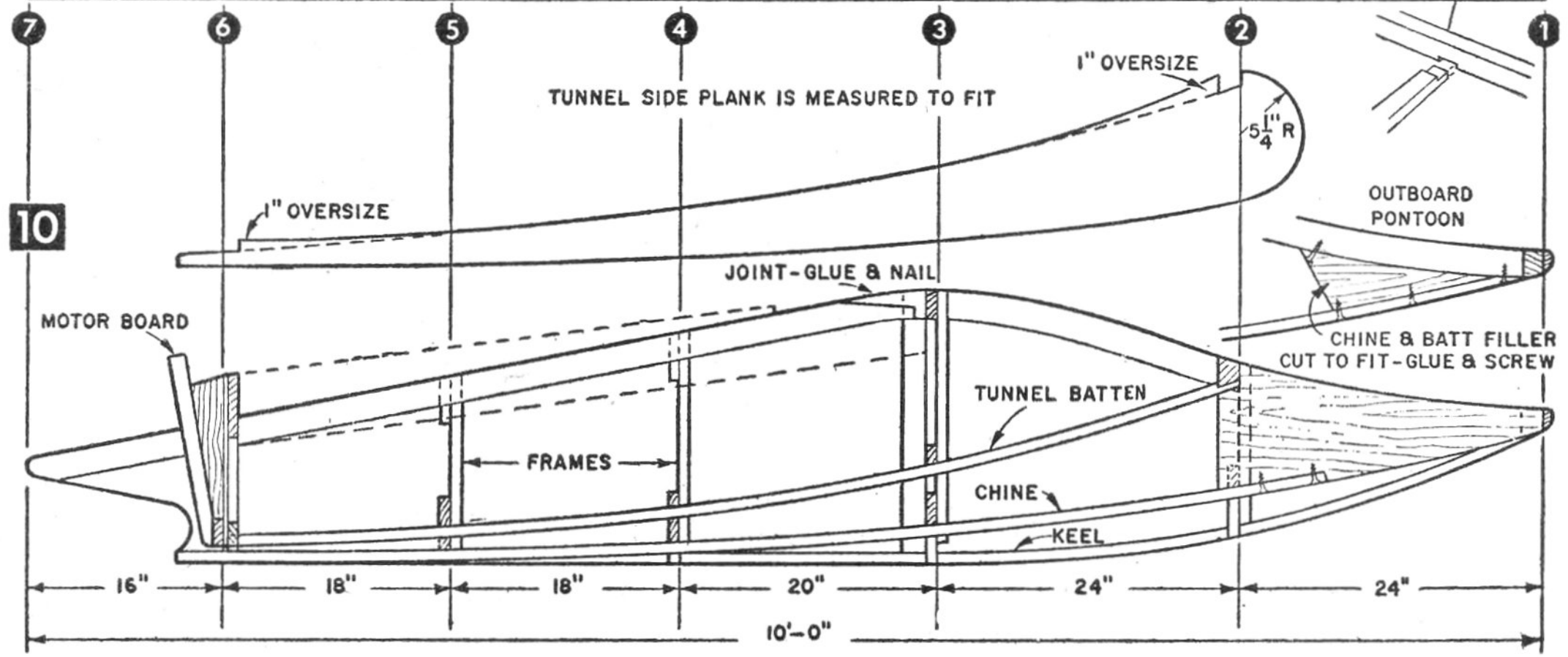
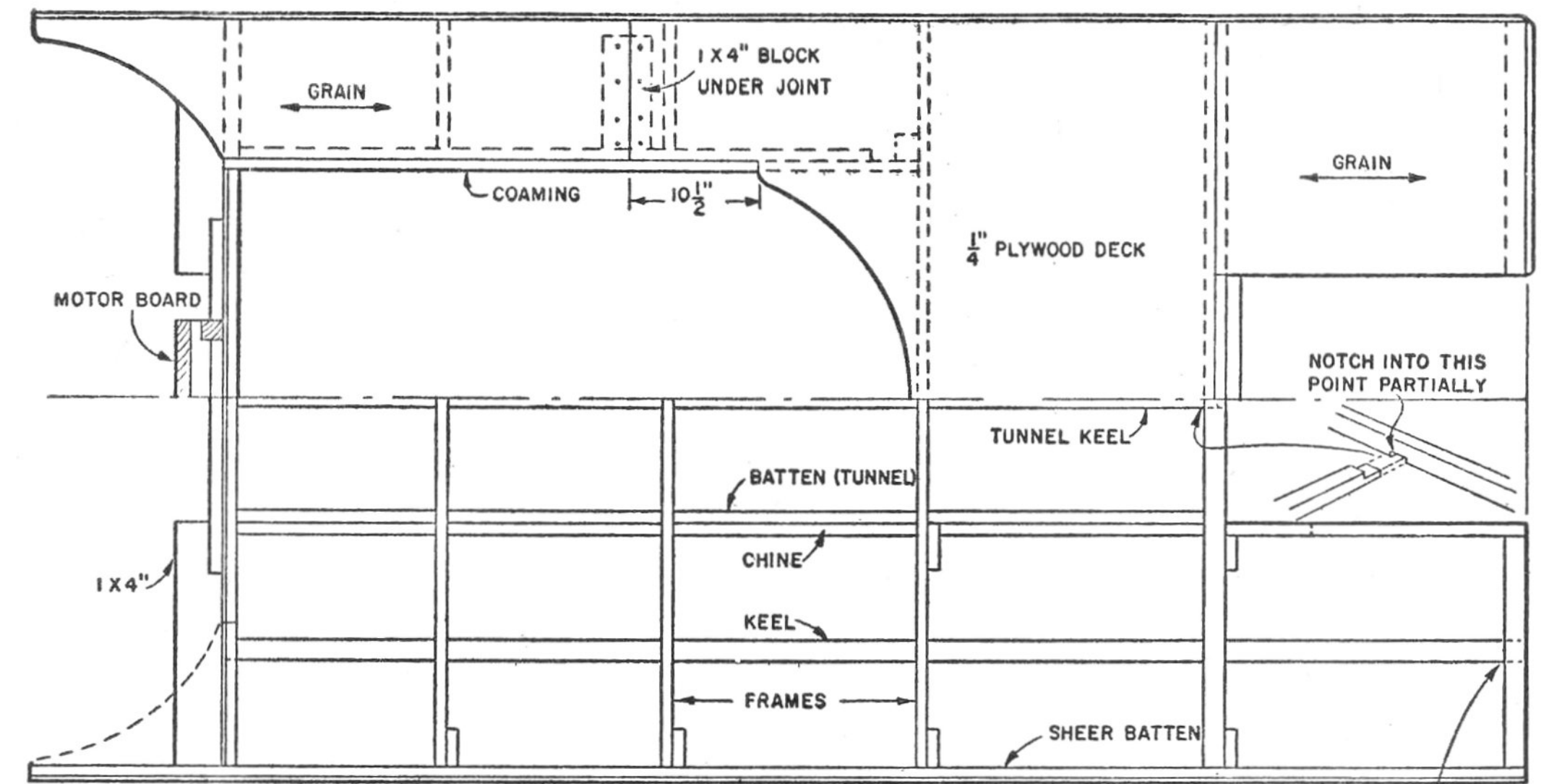
Fit the four chines and screwfasten them in their respective positions with one #8 x 2-in. *fh* screw at each joint except the fore ends which are secured with two screws. Let chines extend



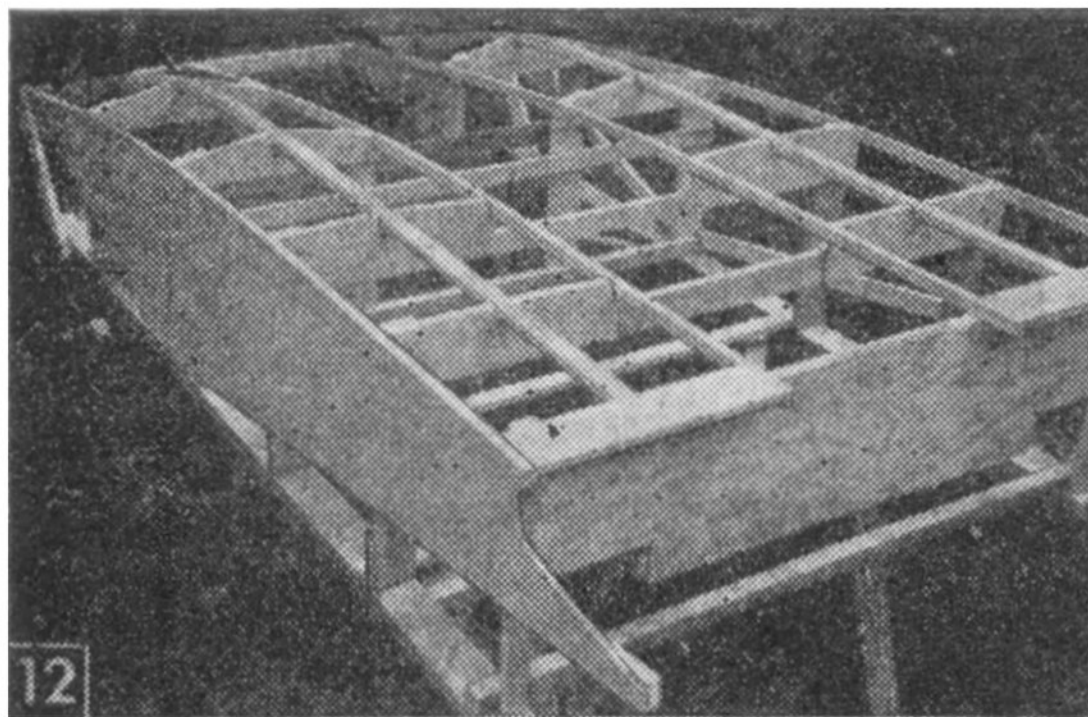
Framework upside down ready for side planking.



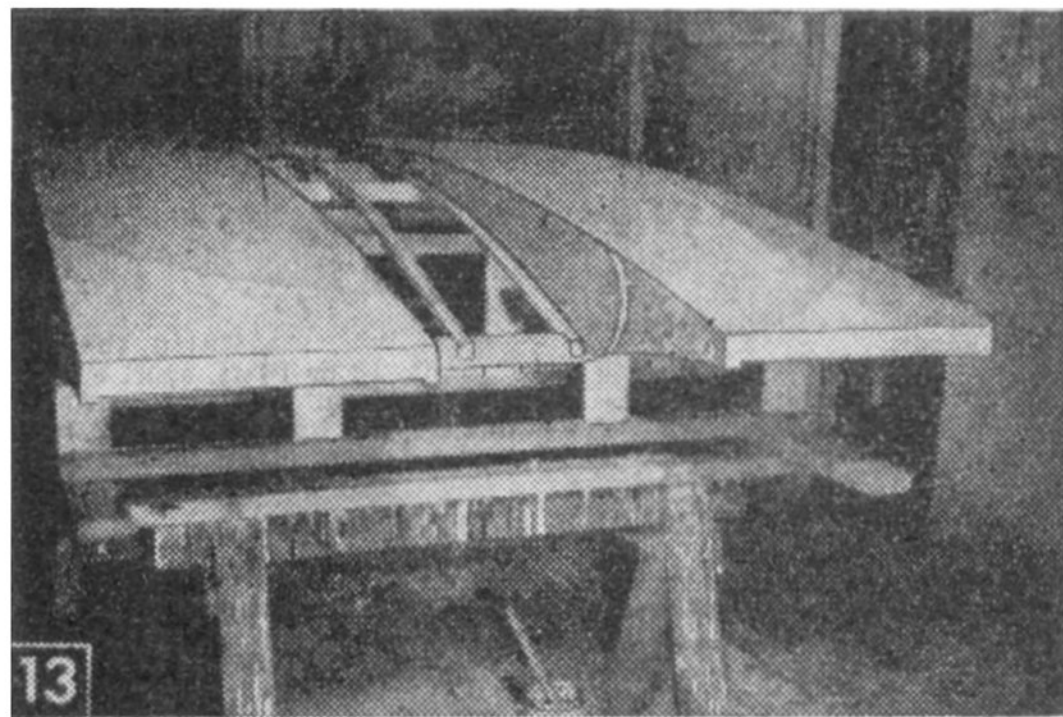
Beveled nose pieces fit at fore ends of pontoons.







Flat 1 x 4's fit at ends of pontoon trailing edges.



Tunnel side planking has curved forward edge.

MATERIALS LIST—SWOOSE		
No. Reqd.	Size	Use
Plywood Required		
3 pcs	1/4" x 4 x 10'	outer skin
1 pc	3/8 x 16" x 5'	transom
1 pc	3/8 x 32 x 54"	floor
Framing		
2 pcs	1 x 4" x 10'	transom framing and frames
3 pcs	1 x 6" x 10'	
1 pc	2 x 2" x 4'	pontoon nose piece
1 pc	2 x 4" x 10'	tunnel nose piece
4 pcs	3/4 x 1 1/4" x 10'	chines
2 pcs	3/4 x 1 1/2" x 10'	keels
3 pcs	3/4 x 1 1/8" x 8'	tunnel keel and battens
1 pc	3/4 x 11 1/2 x 30" (1 x 12)	inner pontoon ends
1 pc	1 x 8" x 10' (cut to size)	sheer battens
1 pc	1 x 6" x 10'	coamings
1 pc	2 x 12 x 24"	motor board
Fastenings		
5 gr	1-in. #8 fh screws	
3 doz	1 1/2-in. #8 fh screws	
2 doz	2-in. #8 fh screws	
1 doz	2 1/4-in. #8 fh screws	
1 doz	2-in. #10 fh screws	
40	3/16 x 2 1/4" rh stove bolts	
1 lb	Weldwood Glue	
1 qt	Kuhls Bedlast	
1 1/2 gal	White Firzite	

aft of transom about 4 in., filling chine notch with Kuhl's *Bedlast*. Fit 1 x 4-in. filler between chines (Fig. 10) and screwfasten with two #8 x 1 1/2-in. *fh* screws. Coat transom liberally with *Bedlast* around these pontoon extensions.

Now you're ready to apply side planking. First coat all contact surfaces with *Weldwood* glue, set planks in position and screwfasten with #8 x 1-in. *fh* screws at 2-in. intervals. When glue has set, trim plywood evenly along chines and fair framework so plywood lies evenly at all points.

Plank the pontoon bottoms next, coating chine joints with *Bedlast* and contact surfaces on frames with *Weldwood* glue. Split fore ends of bottom planking (Fig. 4) to fit curved bottom. Cut ends form a neat joint over keel that is later filled with glue and sawdust mix. Screwfasten planking along chines with #8 x 1-in. *fh* screws spaced at 2 in. and 3 in. along keel except where fore end plank is cut; use 2-in. spacing there. When glue sets, trim edges evenly.

Plank the inner sides of the tunnel (Fig. 10) shaping plywood to fit and screwfastening in place with #8 x 1-in. *fh* screws. Coat adjoining surfaces with *Bedlast* and frames with *Weldwood* glue.

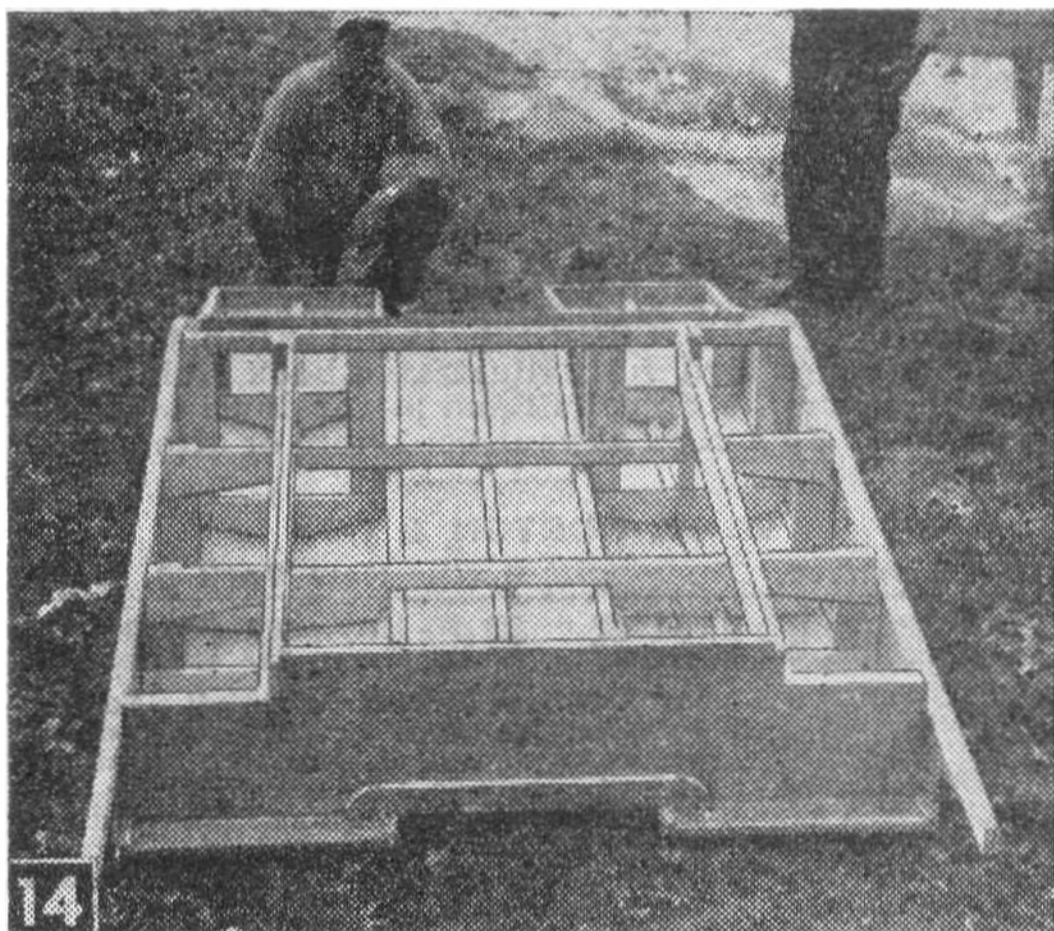
Tunnel keel and battens are notched flush into transom and tunnel nose only. At frames #3, #4 and #5, the keel and battens rest on frame cross

pieces. Screwfasten keel and battens with one #8 x 1 1/2-in. *fh* screw at each joint. Screw through plywood tunnel sides into battens from inside pontoons, using #8 x 1-in. *fh* screws at 3-in. intervals. Planking for tunnel bottom is simply a sheet of 1/4-in. plywood, cut to fit the opening. Before fastening bottom planking in place, coat adjoining surfaces with *Bedlast*. Screwfasten planking to keel and battens with #8 x 1-in. *fh* screws spaced at 2 in.

You're now ready to turn the *Swoose* over, so saw frame supports loose from form. You'll need another pair of hands to help you turn her over and set her upright on the sawhorses. Trim plywood along sheer battens and fair contact points for application of decking.

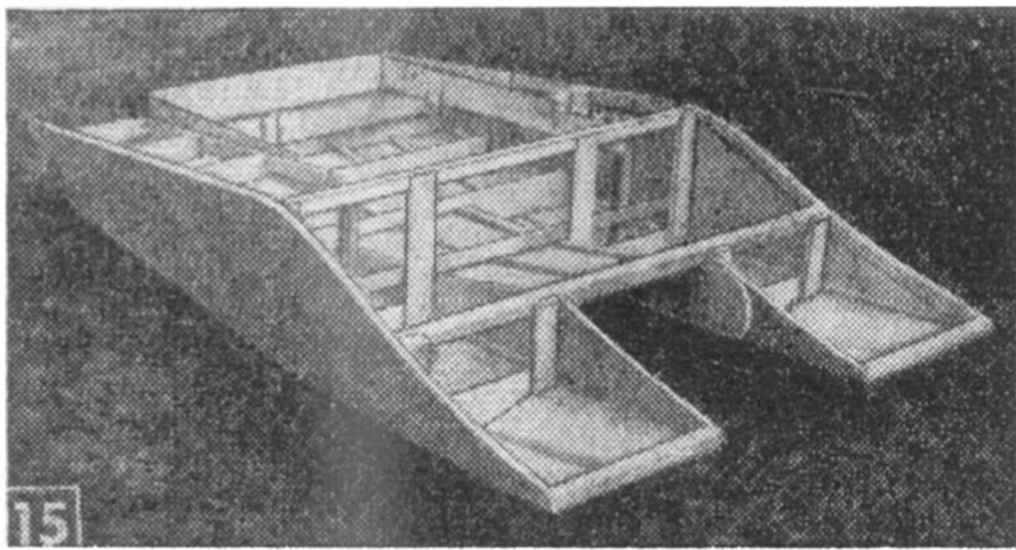
Shape the coamings (Fig. 5) and fit to side deck supports at #4 and #5 frames. Remove coamings and screw deck cleats on outboard side (Fig. 5). Screwfasten a 2 x 2-in. block at both sides of #3 frame; fasten fore end of coaming to these blocks with #8 x 2-in. *fh* screws. Screwfasten side deck beams between coaming and frame uprights with #8 x 1 1/2-in. *fh* screws.

The rest of the decking and other work is clear sailing. But before decking, paint the interior three coats of white *Firzite*. Lay the cockpit deck with the grain running crosswise, so it will bend readily, mark and saw to shape. Screwfasten it



Side beams and coamings installed ready for deck.





Swoose ready for final forward and side decking.



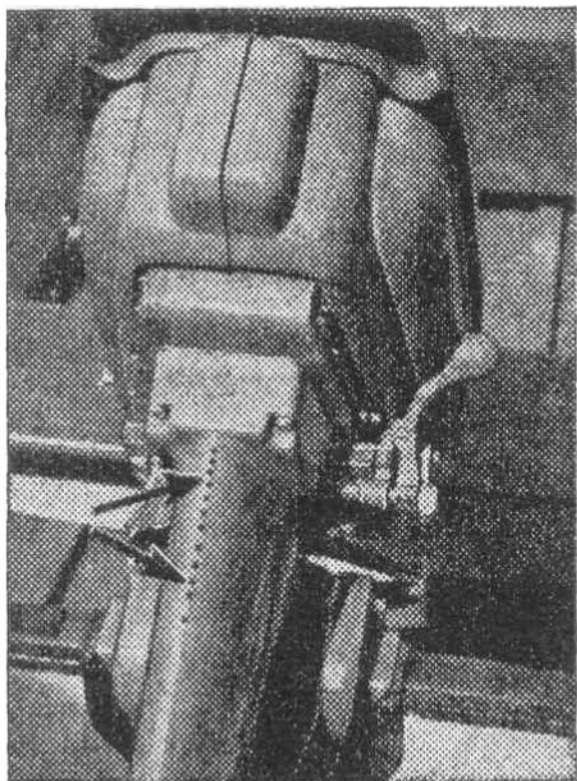
Swoose makes a stable fishing platform, and its big cockpit makes it especially safe for family boating.

in place with #8 x 1-in. *fh* screws spaced at 3-in. intervals. Fit and apply the fore and aft plywood decking as indicated in Figs. 6 and 10.

Where the edges up forward are curved, cut moldings from  $\frac{3}{8}$ -in. plywood 1 in. wide. On straight aft edges, use  $\frac{3}{8}$  x 1-in pine for moldings. Add tunnel filler strips seated in *Bedlast* liberally applied (Fig. 7). Round nose pieces at fore ends of pontoons and screwfasten them in place. Shape a motor board, screwfasten at bottom edge and bolt with  $\frac{3}{8}$ -in. bolts at top of transom. Prime coat the entire outside with two coats of *Firzite*, then apply final coats of paint.

### Pressure Relief for Outboards

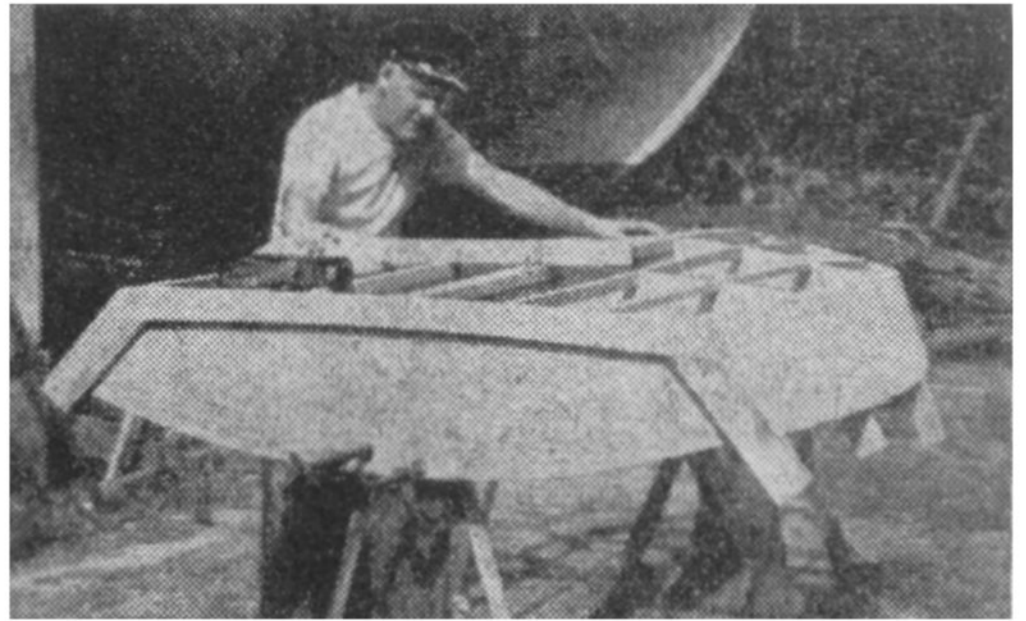
• Eight to twelve  $\frac{1}{8}$ -in. holes drilled into the exhaust housing of an outboard motor makes starting easier, prevents sucking water into the cylinders should the motor "kick" and increases the horsepower considerably, without an objectionable increase in exhaust noises. Do not drill more than 12 holes and they must be no larger than  $\frac{1}{8}$  in. or excessive noise may result.—CLINTON R. HULL.



### Reinforcing the Transom

• The transom of an outboard boat receives considerable pounding from the vibration of an outboard motor and the impact of the entire boat if it's a planing boat at high speeds. With all these stresses concentrated at the transom, it sometimes weakens and starts to leak.

This simple solution to reinforcing the transom is adaptable to nearly all boats. Before planking any boat, simply add an outside frame  $\frac{3}{4}$  x 2 or



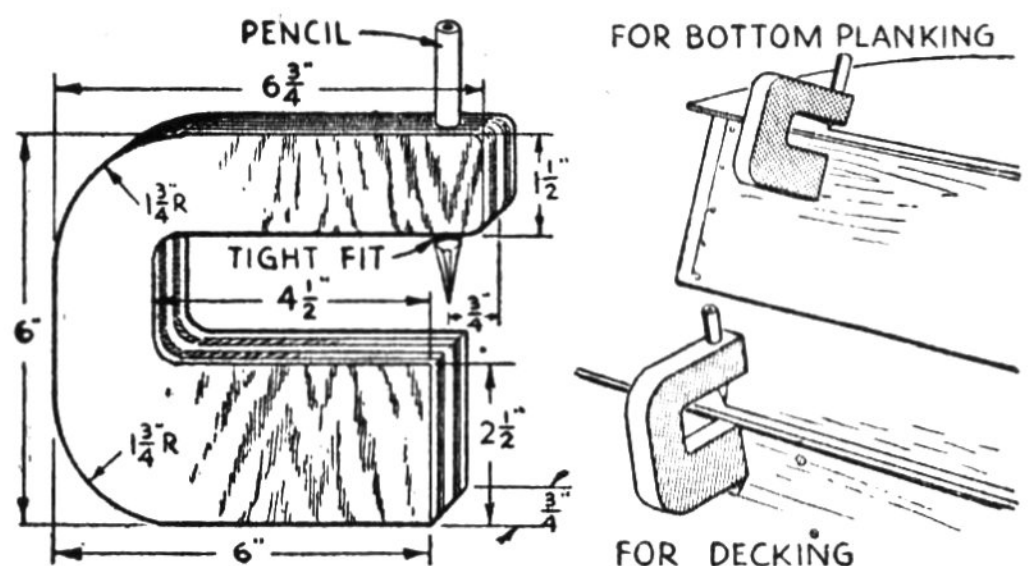
3" to the bottom edge of the transom. Side frames may also be used. Coat adjoining surfaces liberally with *Kuhls' Bedlast* and screwfasten it in place with #10 x  $1\frac{3}{4}$ -in. *fh* screws.

Increasing transom thickness at this point builds up bedding composition and adds planking screws to insure an almost leakproof joint despite any and all pounding.—WM. D. JACKSON.

### Boat Planking and Deck Marking Scribe

• When building a new boat or repairing an old one this scribe or marker helps to make neat even joints along side of bottom planking or decking regardless of the slope or angle of sides and bottom.

The marker is quite simple to make or use. The original was sawn from  $\frac{3}{4}$ -in. plywood with a



jig saw. If means are not available to saw out the fancy curves, simply make it square, a job which will require only a few minutes, utilizing scraps. But if more than one boat will be built, it's advisable to make the marker as shown and retain it for future use, as a permanent part of the boat builder's tools.—WM. D. JACKSON.