

#### STATEMENT OF USES

**LENGTH:** 11'-7"

**BEAM:** 7'-11" suitable for trailering

**WEIGHT:** 500 lbs.

**CAPACITY:** 800 lb. satisfactorily tested with 1500 lb. load

**PERFORMANCE:** 10 mph with 800 lb. load and 3 hp outboard motor

**CONSTRUCTION:** "Pyramid" cross section pontoons of 1/4-in. plywood over lumber framing. 3/4-in. plywood platform. Platform, pontoons and awning frame separated as units for easy off-season storage.

**USES:** Float boat for family outings, barbecues, sun bathing, fishing and hunting.

# Family-Sized Planing Pontooner

## Craft Print Project 312

**Y**OUR entire family can take to the water on this pontoon family boat for sun bathing, swimming or fishing parties. And there's plenty of room for the charcoal broiler too, so you can have barbecues and fish fries aboard your "patio on the pond". It has 80 square feet of deck space and in emergencies, will support a 1,500-pound load with its virtually unsinkable construction.

Furthermore, this boat is no slouch when it comes to getting you to and from your favorite fishing spot. With an ordinary 18-hp motor, it will plane at 14 mph with an 800-pound normal capacity load.

The pontoons and patio deck are designed to be built by you from ordinary lumberyard materials, and the cost of the home-built boat, completely fiber-glassed, should range between \$90-100.

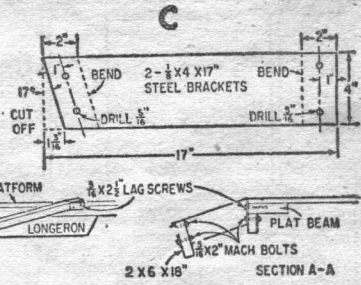
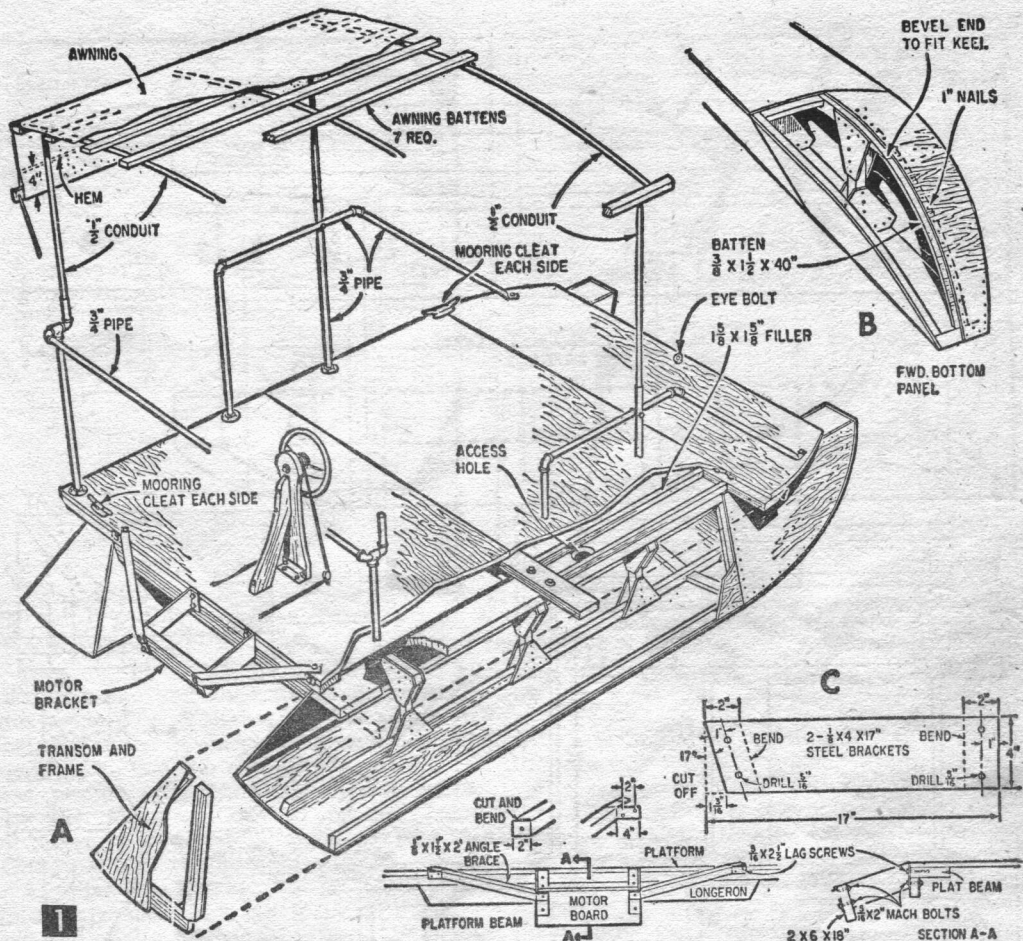
**Begin Construction** by cutting the two faceplates (Fig. 3A) to length and beveling one end of each 28°. Bevel the other ends 40° in the opposite direction and then place the boards on the saw table as in Fig. 3B to bevel the sides 29°. Use a portable saber saw or an ordinary keyhole saw to cut three 4½-in.

holes in each piece.

Cut eight crossbraces (Fig. 3F) to fit against the underside of the faceplates and bevel the ends of each one to coincide with the faceplates. Locate one of these 17 in.



Gay awning and ample deck provide pleasing patio-like arrangement for family recreation.



from the extreme after end of each faceplate and then station three more along its length at 27-in. intervals. Attach the crossbraces to the plates with glue and two 2-in. ringed siding nails to each joint.

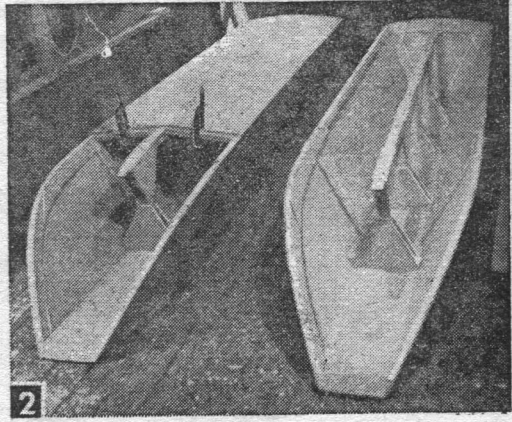
Next, cut eight 13 7/8-in. lengths from 1 5/8-in. square stock for the uprights and thirty-two 1/4-in. plywood gussets from sheets #3 and #4 (Fig. 3J). When laying out the gussets on the sheets, a few of them will lack 1/2-in. on a corner of fitting the available space. Use these for the top gussets as the corners of these pieces will be removed after assembly.

Assemble these parts using two gussets at each crossbrace and fasten with glue and three 1-in. nails to each joint. Trim the corners of the gussets to match the bevel of the faceplates and crossbraces.

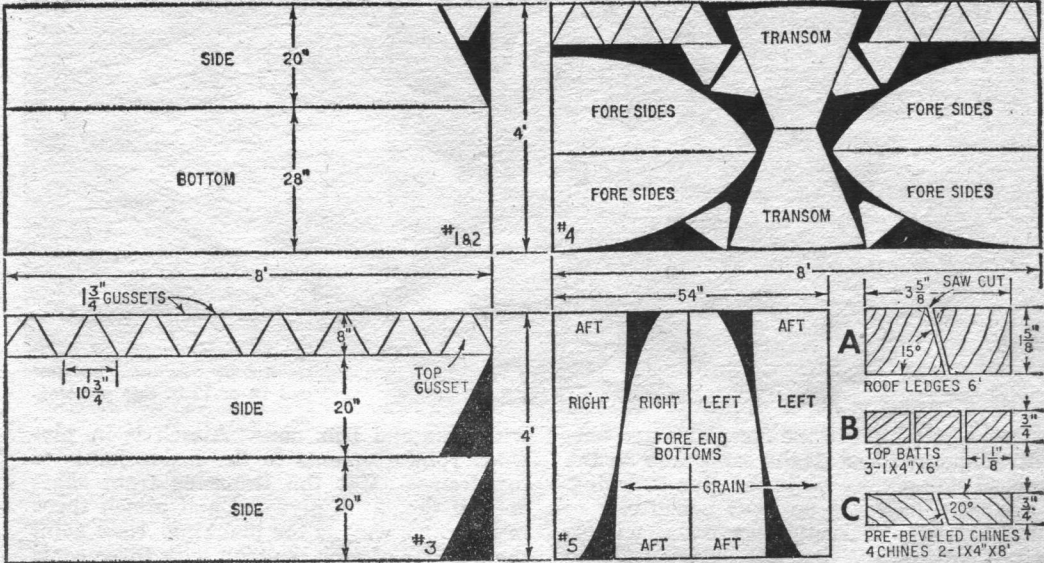
Cut two keelsons (Fig. 3D) to length and bevel their after ends 28°. Then shape the forward ends to a rounding taper so the planking can be formed smoothly over them. Place each keelson on the ends of the up-

rights so the after end of the keelson is 27 in. from the centerline of the #4 upright. Attach gussets as before to each joint.

Make a cardboard template for the forward side planks by laying out 4-in. intervals along







**4** PLYWOOD PANEL CUTTING DIAGRAMS

a straight line and then marking the ordinates as in Fig. 3. Transfer this shape to sheet #4 of the 1/4-in. plywood and cut out four planks. Use the curved edge of one of these planks as a template for the stems (Fig. 4D). Make four stems in all, each from two pieces of 3/4 x 7 1/2-in. stock.

Glue and nail the straight edge of one of the forward side planks to a faceplate with 1-in. nails spaced 2 in. apart. Bevel the forward end of the stem to fit against the faceplate, and then glue and nail it to the plank. Support the plank with an iron dolly while driving the nails and then connect the planks

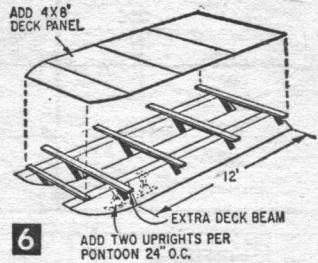
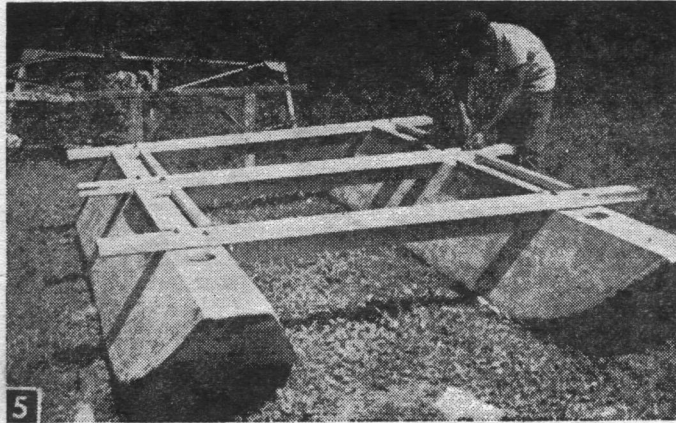
with a 1/4-in. batten nailed across them until the glue has set.

Rip one piece of the leftover stock from the faceplates into 3/4-in. widths and cut four of these to 15-in. lengths for battens at the side plank joints (Fig. 1A). Attach one of these to each plank with glue and 1-in. nails spaced 1 in. apart so the after edge of the plank is on the centerline of the batten.

Now cut the four main side planks (Fig. 4) from 1/4-in. plywood sheets # 1 and # 2. Glue and nail one of these to each side of the

**MATERIALS LIST—PLANING PONTOONER**

Amt. Reqd.	Size and Description	Use	Amt. Reqd.	Size and Description	Use
4	1/4" x 4 x 8' AC fir exterior plywood	planking, gussets, transoms	1	15" steering wheel assembly	
1	1/4 x 48 x 57" AC fir exterior plywood	planking and gussets	20 ft.	plastic covered stranded cable	steering cable
1	3/8 x 3 x 40" AC fir exterior plywood	battens	2	3/4 x 4 1/2" coil springs	
2	3/4" x 4 x 8' AC exterior plywood	platform	2	2" sheave pulleys	
1	3/4" x 2 x 8' AC exterior plywood	platform	1	6 x 10' canvas or plastic fabric	
2	1 5/8 x 9 1/2" x 12' fir	faceplates, motor board, battens	2	1/4" U bolt, 1 1/8 x 2"	
3	1 5/8 x 5 5/8" x 8' fir	platform beams	4	1/4 x 2" eyebolts	
4	1 5/8 x 3 5/8" x 10' fir	longeron, fore beam	1	1/2 x 3" eyebolt	
1	1 5/8 x 1 5/8" x 12' fir	ledges	14	1/2 x 3 3/4" machine bolts/washers & nuts	
3	1 5/8 x 1 5/8" x 10' fir	keelsons, uprights, battens	2	3/16 x 3 1/2" machine bolts/washers & nuts	
1	1 5/8 x 1 5/8" x 8' fir	cross braces	4	3/16 x 2 1/2" machine bolts/washers & nuts	
1	3/4 x 7 1/2" x 12' fir	stems	6	3/16 x 2" machine bolts/washers & nuts	
5	3/4 x 3 5/8" x 8' fir	chines, awning battens, tie-down bars	2	1/4 x 3" machine bolts/washers & nuts	
1	3/4 x 3 5/8" x 12' fir	transom framing, battens	2	1/4 x 2" machine bolts/washers & nuts	
1	1/8 x 1 1/2 x 54" angle iron	motor board and steering supports	2	1/4 x 1 1/4" machine bolts/washers & nuts	
2	1/8 x 4 x 17" steel sheet	motor board mounting brackets	2	1/2 x 2" stove bolts/washers & nuts	
4	3/4" dia. x 30" pipe, threaded 2 ends	railing	24	1/4 x 1 1/2" stove bolts/washers & nuts	
2	3/4" dia. x 38" pipe, threaded 2 ends	railing	96	3/16" washers	
2	3/4" dia. x 44" pipe, threaded 1 end	railing	2 doz.	2" ringed, zinc-dipped nails	
2	3/4" dia. x 36" pipe, threaded 1 end	railing	2 1/2 lbs.	1" ringed, zinc-dipped nails	
1	3/4" dia. x 90" pipe, threaded 2 ends	railing	3 doz.	3/4" #8 fh wood screws	
4	1/2" dia. x 10' thinwall conduit	awning frame	8 doz.	1 1/2" #8 fh wood screws	
2	3/4" pipe "T's"		2 doz.	2 1/4" #10 fh wood screws	
4	3/4" 90° street elbows		10	3/4" #8 sheet metal screws	
6	3/4" floor flanges		2 doz.	1" #8 sheet metal screws	
2	3/4" dia. x 4" nipples		2 lbs.	glue powder	
2	3/4" 90° elbows		1 qt.	neoprene sealer	
2	3/4" 45° elbows		16 yds.	44" fiber glass cloth and resin	
1	3/4 x 3 3/8 x 18" hardwood	steering bar	2 gals.	marine enamel	



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ADD TWO UPRIGHTS PER PONTOON 24" O.C.

Length of pontoon boat is increased by additional uprights and 10 or 12-ft. side planking.

pontoons, joining it to the faceplates and battens. Support these in the same way as the forward side planks while the glue is drying.

Next set the fence on your bench saw to rip a 3½-in. board into two equal widths. Before cutting, tilt the saw blade to 20° to provide the correct bevel for the chines (Fig. 4C). Check the fit of these parts in the stem notches and bevel their after ends 28°. Then attach them to the side planks, fastening them in the same way as the stems. Before further construction, sight along the curves of each pontoon and fair any noticeable waviness with a jack plane.

**Lay out the Transom Framing** (Fig. 3H) on 5½-in. stock and bandsaw it to shape. Fit the framing to the pontoons and then fasten

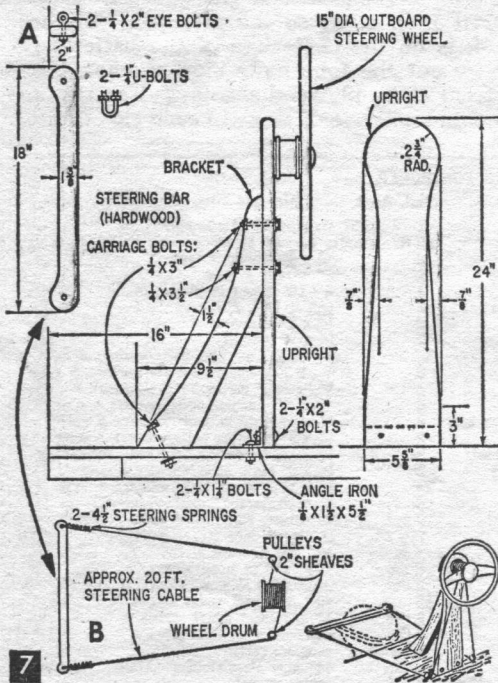
with glue and 1-in. nails. Attach ¼-in. plywood reinforcements to the inside joints of the frames. Cut the transoms from sheet # 4 of the ¼-in. plywood and attach them in the same way as the planking. Now paint the interior of each pontoon with three coats of flat paint. Do not paint the surfaces of the chines, stems and faceplates that are yet to be joined.

Next, attach the main bottom planks to the chines and transom with 1-in. nails and glue. Also glue two ¾ x 1½-in. battens to the forward edge of each bottom plank (Fig. 1B). Rip the waste stock from the uprights and transom framing into ¾ x 1½-in. strips for these parts.

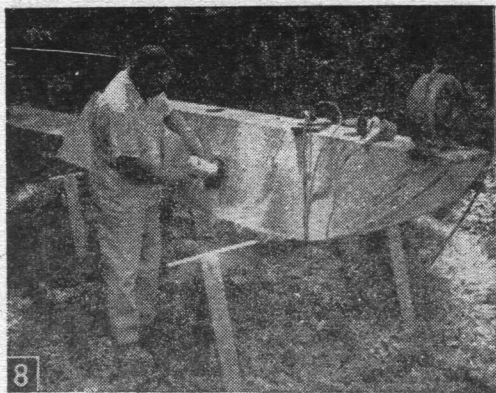
Make a cardboard pattern of one half of the forward bottom planking. Lay out this pattern on the ¼-in. plywood sheet # 5 so the grain will be running crosswise when the plank is assembled. Bevel the edges of the stems slightly to allow the planks to curve smoothly. Attach each fore bottom plank temporarily to test its fit and then remove, coat the mating surfaces of one of them with glue and secure it with 1-in. nails to the battens, stems, and faceplates.

Then fit a ⅜-in. plywood batten (Fig. 1B) along the underside of the center edge of this plank. Be sure it fits closely at the keelson and faceplate and then attach permanently with glue and 1-in. nails. Support the joint firmly while nailing and then trim the nail ends. The opposite forward bottom plank is attached in the same way, except that, since it is impossible to support the batten, use # 6 x ¾-in. *fh* screws to secure the center joint. Countersink these screws in the planking and space 2 in. apart.

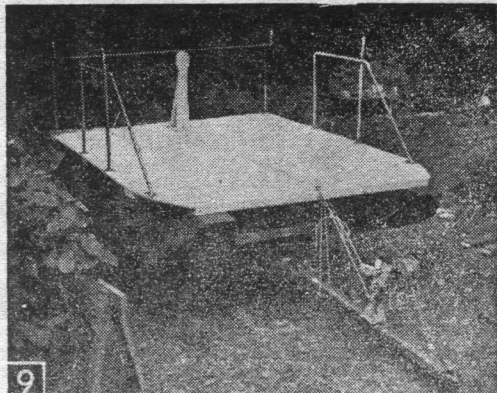
**Finishing.** Now fill all dents and crevices with *Plastic Wood* and sand the pontoons smooth. Round off all the sharp edges, especially if you intend to fiber-glass the pontoons. In this case, shape the edges of the chines so the cloth will fit smoothly around these joints. Apply the fiber glass cloth and



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8 Complete fiberglassing is used for maximum safety afloat.



9 Platform width may be up to 6 in. narrower to comply with local trailer regulations.

resin according to the manufacturer's instructions. Fiberglassing is absolutely necessary to waterproof the pontoons.

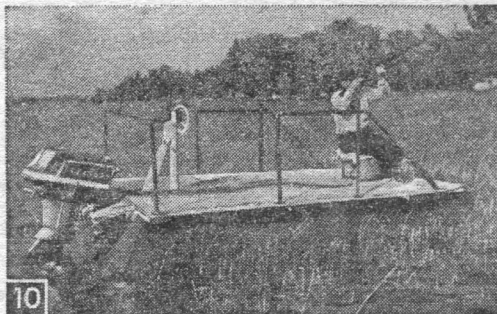
**Platform beams #2 and #3** are made up of  $1\frac{1}{8}$  x  $3\frac{5}{8}$ -in. longerons and  $1\frac{1}{8}$  x  $5\frac{5}{8}$ -in. beams (Fig. 3G). Bevel the ends of each longeron to match the pontoon sides and attach with # 12 x  $2\frac{1}{4}$ -in. screws, spaced 8 in. apart, forming a "T" shaped section (Fig. 3). Beam # 4 is assembled in the same way, but the longeron is fastened to one edge of the beam, forming an inverted "L" section. Platform beam # 1 is simply an 8-ft. length of  $1\frac{1}{8}$  x  $3\frac{5}{8}$ -in. stock.

Now set the pontoons on a level floor and place the platform beams across them, spaced so the plywood panel joints fall on their centerlines. Be sure the pontoons are set tightly against the beveled ends of the longerons and then drill two  $\frac{1}{4}$ -in. holes (Fig. 5) through the beams and faceplates. Fasten the beams to the pontoons with  $\frac{1}{2}$  x 4-in. carriage bolts, washers and nuts. Reach through the access holes in the faceplates and insert the bolts from the underside of the plate.

Cut  $1\frac{1}{8}$  x  $1\frac{1}{8}$ -in. stock to fit between the beams and fasten these to the faceplate with # 12 x  $2\frac{1}{2}$ -in. screws.

Next, set the platform panels in place and mark the location of the ends of the beam bolts on them. Cut 1-in. dia. openings to allow the bolt ends to project through the panels, so the pontoons can be separated from the platform when necessary. Fasten the panels to the beams with #8 x  $1\frac{1}{2}$ -in. fl. wood screws spaced 8 in. apart. Place a  $\frac{3}{16}$ -in. washer under the head of each of these screws. Drill and insert a  $\frac{1}{2}$  x 3-in. eyebolt in the center of the platform at # 1 beam to serve as a mooring eye.

Lay out, drill and form the motor board brackets as in Fig. 1C and then bolt them to the # 4 platform beam. Run a machine bolt through the longeron and a  $2\frac{1}{2}$ -in. lag screw



10 8 x 10-ft. deck is roomy, easily camouflaged shooting platform for waterfowl hunting.

into the beam itself. Also attach two angle iron braces to the platform with lag screws and then bolt the motor board and the other ends of the angle irons to the after ends of the brackets with four  $\frac{3}{16}$  x 2-in. machine bolts.

**The Superstructure** for the pontoon boat is made up of  $\frac{3}{4}$ -in. steel pipe and  $\frac{1}{2}$ -in. thin-wall conduit. If you wish to paint the railings (Fig. 1A), use black iron pipe; if not, galvanized pipe is recommended. Have the  $\frac{3}{4}$ -in. pipe cut and threaded as in Fig. 3D. Use  $\frac{3}{4}$ -in. floor flanges to mount the railings to the platform, except where the railing slants down to meet the bow. Attach these ends by flattening four inches of the pipe, drilling it and fastening  $\frac{5}{16}$  x  $3\frac{1}{2}$ -in. bolts through it and # 1 beam.

Cut the uprights for the awning frame to length and then lay out and drill  $\frac{3}{4}$ -in. holes, 1 in. deep in the ledges (Fig. 3C). Also drill holes in the ledges for the curved awning supports and drill lead holes to fasten the conduit in the lumber with # 6 x 1-in. sheet metal screws. The awning frame sets in short pieces of pipe threaded into the railings and is easily removable.

Saw three  $\frac{3}{4} \times 3\frac{5}{8}$ -in. boards into three equal widths each to make the seven battens and two tie-down bars (Fig. 1A). If the awning is to be removable, attach the battens to the supports with plastic tape. For permanent installation, use # 8 x 1-in. sheet metal screws. Countersink the heads of these screws deeply into the battens to protect the awning material.

Have a 4-in. hem (Fig. 1A) sewn in each end of the awning and slip a tie-down bar through each of these. Roll the awning on these bars for easy handling. When setting up the awning, unroll the cloth over the supports and tie each bar to the uprights at the desired level.

**Steering.** Use a 15-in. diameter steering wheel for your pontoon boat and support this wheel on a bracket at a suitable height so you can pilot the boat from a deck chair. Saw the bracket to shape and bolt it to a  $1\frac{5}{8} \times 5\frac{5}{8}$ -in. upright which is shaped as in Fig. 7. Bolt the bracket to the upright with a 3-in. and a  $3\frac{1}{2}$ -in. carriage bolt. Then secure the upright to the platform with a  $5\frac{1}{2}$ -in. length of angle iron. Bolt the angle iron to the upright with two  $\frac{1}{4} \times 2$ -in. *rh* stove bolts and to the platform with two  $\frac{1}{4} \times 1\frac{1}{2}$ -in. stove bolts.

Finally, bolt the bracket to the platform with a  $1\frac{1}{2} \times 3$  in. carriage bolt inserted from underneath the platform at an angle.

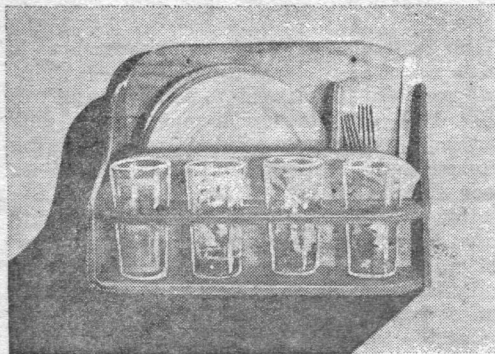
Use 20 ft. of plastic covered, stranded-steel cable and run it from the steering drum to two sheave pulleys attached to the floor with eyebolts. Then run the cable aft to the steering bar (Fig. 7A) which is cut to shape from hardwood and secured to the motor with two U bolts. The cable is attached to the steering bar through two coil tension springs and eyebolts to absorb steering shock.

Finally, complete the paintwork on the platform and awning frame. As soon as this is dry, you can break out the outboard motor and deck chairs to enjoy a well-earned siesta on your pontoon patio.

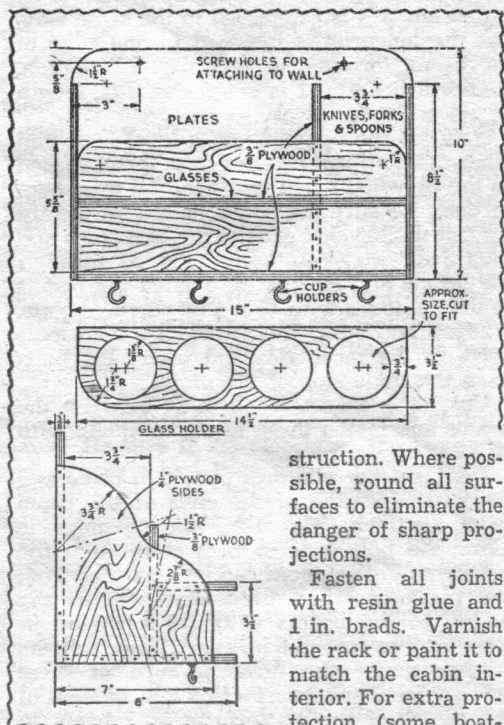
• Craft Print No. 312, in enlarged size for building Planing Pontooner is available at \$5. Order by print number. To avoid possible loss of coin or currency in the mail, we suggest you remit by check or money order (no CODs or stamps) to Craft Print Div., SCIENCE AND MECHANICS, 229 Park Ave. South, New York, N. Y. 10003. Please allow three to four weeks for delivery. Special quantity discount! If you order two or more craft prints (this or any other print), you may deduct 25¢ from the regular price of each print. Hence, for two prints, deduct 50¢; three prints, subtract 75¢, etc.

## Glass and Dish Rack for the Small Boat

By Wm. D. Jackson



**H**ERE is a compact stowage rack for all cutlery ware, glasses and cups on small boats that maintain the galley equipment in one container, safe from breakage and ready to use at a moment's notice. Use waterproof plywood scraps for this rack and follow the drawings for con-



struction. Where possible, round all surfaces to eliminate the danger of sharp projections.

Fasten all joints with resin glue and 1 in. brads. Varnish the rack or paint it to match the cabin interior. For extra protection (some boat-rides can be rough), place strips of rubber on the bottom and sides of the plate holder to prevent breakage. Cup holders are brass hooks made especially for the purpose and available from any five and dime store.

