

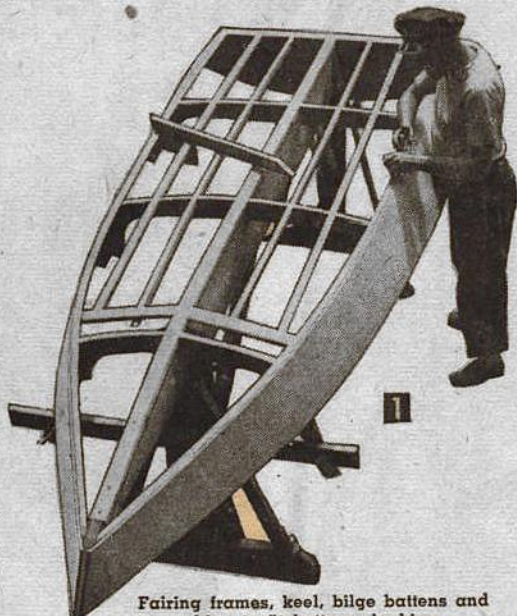
Blue Streak

By WILLIAM D. JACKSON, N.A.

PROP riding on her hydro-conic bottom, *Blue Streak* takes Class "B" outboard motors for a merry spin in stock utility races. With a *Mercury Hurricane* motor, *Blue Streak* clocked 39 mph with one person aboard. With the same motor and a *Quicksilver* lower unit, she topped 46 mph. Johnson, Evinrude, Scott-Atwater, Martin, Champion and the other Class "B" (10 hp or motors of 20 cu. in. piston displacement) motors are all adapted to this speedy runabout. On fast turns, upswept sides keep her plastered to the water surface.

Only two frames and a transom with plywood planking make *Blue Streak* easy to build—and she only costs \$85 for materials, scarcely more than for a row boat. Special designs have eliminated most of the difficult joinery, yet the stressed-skin plywood hull will take choppy water in stride and carry as many as three people.

Before starting any construction, lay out the



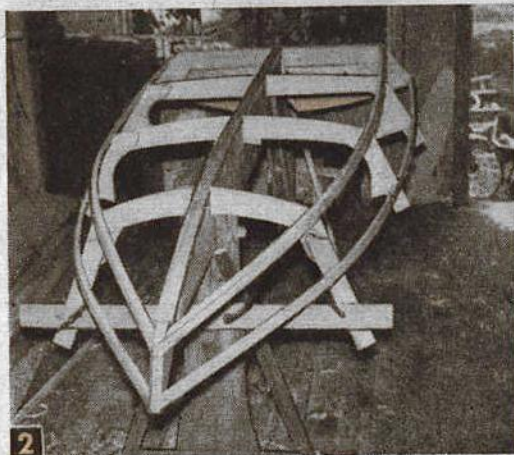
Fairing frames, keel, bilge battens and chine to fit bottom planking.

Craft Print Project No. 185

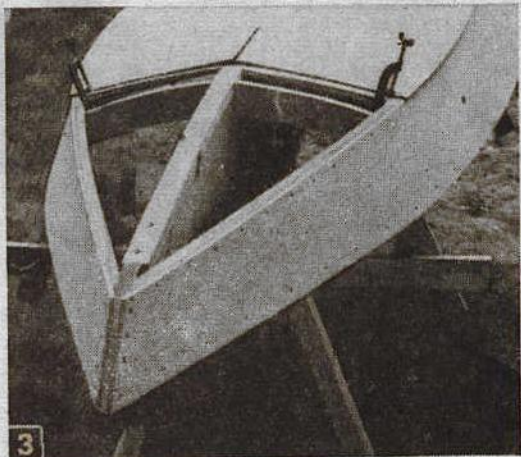
frame, #1 mold and transom patterns full size on red rosin building paper (from your local lumber yard). Transfer the pattern for the transom to $\frac{1}{2}$ in. plywood and saw to shape. The inside framing is cut to shape and glued (*Weldwood* or *Cascophen*) and screwfastened to the frame with #8 x $1\frac{1}{4}$ in. fh screws spaced at 3 in. You'll fasten the outside framing on the transom after the entire hull framing is finished to cover the exposed joints of keel, chines and clamps where they

extend through the transom.

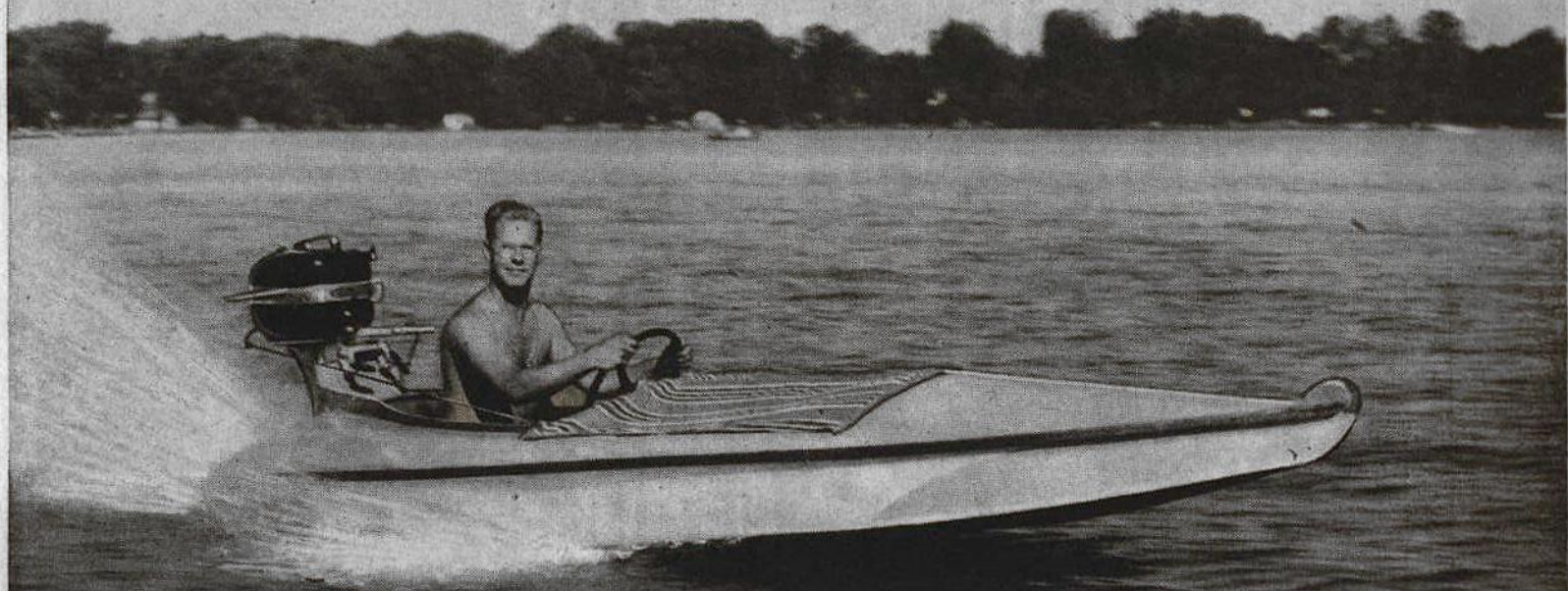
Since the #1 mold frame is removed after the hull is planked, you can saw it out of scrap lumber. This #1 mold can be used over and over again if you plan on building more than one *Blue Streak*. Build up #2 and #3 frames, gluing and screwfastening the $\frac{1}{4}$ in. plywood gussets with #7 x $\frac{3}{4}$ in. fh screws or aluminum



Chines and clamps are sprung into place.



Seam batten at bow strengthens bottom planking joint.



Blue Streak

USE: Speedy class "B" stock competitive racer

LENGTH: 11 ft. • BEAM: 4'-6" • DEPTH: 15 1/2"

WEIGHT OF HULL: 130 lbs.

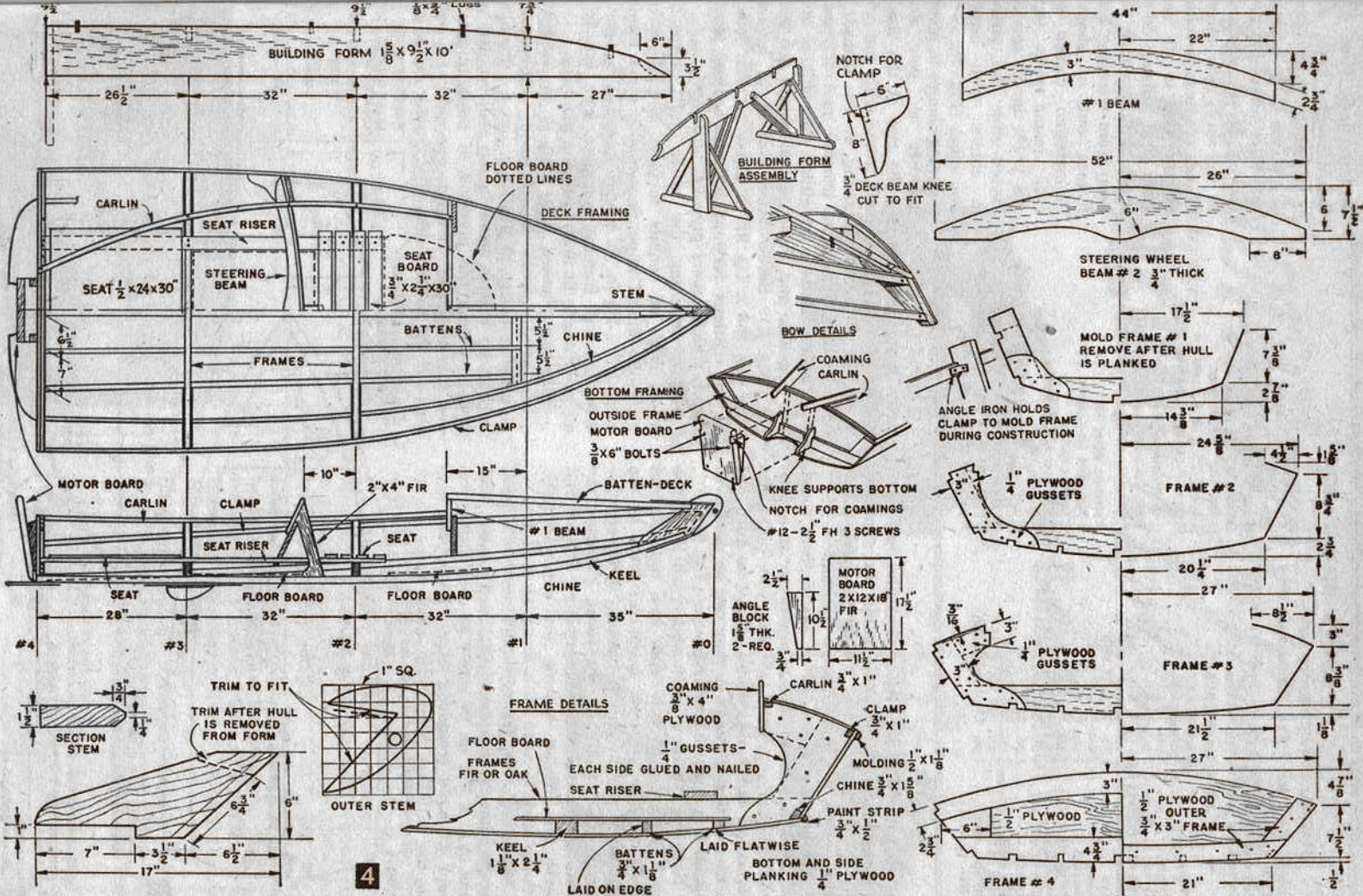
CAPACITY: One person for racing, 3 persons maximum

CONSTRUCTION: 1/4" plywood planking over 2 frames
and one mold. Developable surfaces

SPEEDS: 39 mph with 10 hp outboard and 1 person aboard.

With Mercury special lower unit, 46 mph

COST: \$85 for complete hull. Steering wheel, fin and
throttle controls will cost approximately \$25 additional.



MATERIAL LIST—BLUE STREAK

PLYWOOD (exterior waterproof grade)

- Bottom, sides, floor boards, gussets, deck—3 pcs.
 $\frac{1}{4}$ " x 4' x 8'
 Coamings—2 pcs. $\frac{3}{8}$ " x 4 x 54"
 Transom and outer stem—1 pc. $\frac{1}{2}$ " x 14" x 5'

FRAMEWORK LUMBER

- Frames 5 pcs. $\frac{3}{4}$ " x 6" x 4'
 1 pc. $\frac{3}{4}$ " x 3" x 8'
 Chines 2 pcs. $\frac{3}{4}$ " x 1 $\frac{1}{2}$ " x 11'
 Battens 4 pcs. $\frac{3}{4}$ " x 1 $\frac{1}{8}$ " x 8'
 Deck batten 1 pc. $\frac{3}{4}$ " x 1 $\frac{1}{2}$ " x 4'
 Carlines 2 pcs. $\frac{3}{4}$ " x 1" x 8'
 Keel 1 pc. $\frac{1}{8}$ " x 2" x 10'
 Clamps 2 pcs. $\frac{3}{4}$ " x 1" x 11'
 Moldings 2 pcs. $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " x 11'
 Motor board 1 pc. $\frac{1}{8}$ " x 11 $\frac{1}{2}$ " x 18"
 Angle pieces 1 pc. $\frac{1}{8}$ " x 3 $\frac{3}{8}$ " x 15" makes 2
 Stem 1 pc. $\frac{1}{2}$ " x 6 x 20"
 Knees 1 pc. $\frac{3}{4}$ " x 5" x 4"
 Deck beams 1 pc. $\frac{3}{4}$ " x 7 $\frac{1}{2}$ " x 8"
 Paint moldings 2 pcs. $\frac{1}{2}$ " x $\frac{3}{4}$ " x 11'
 Building form 1 pc. $\frac{1}{8}$ " x 9 $\frac{1}{2}$ " x 10'
 Seats

FASTENINGS

- 4 gr. $\frac{7}{8}$ " #7 fh screws
 2 gr. $\frac{3}{4}$ " #6 fh screws
 2 doz. 1" #8 fh screws
 3 doz. 1 $\frac{1}{4}$ " #8 fh screws
 1 doz. 1 $\frac{3}{4}$ " #8 fh screws
 1 doz. 2 $\frac{1}{4}$ " #12 fh screws
 2 $\frac{3}{8}$ " x 6" carriage bolts and washers
 1 lb. Weldwood glue
 1 pt. Kuhls bedding composition
 Awning for covering fore cockpit—4' x 4'
 1 steering wheel 15"
 1 aluminum fin—approx. 10"
 1 throttle control
 2 aluminum lifting handles
 2 eye bolts $\frac{3}{4}$ "
 4 $\frac{1}{4}$ " pulleys
 20 ft. steering cable—bronze center
 1 gal. Firzite—2 qts. white 2 qts. clear
 Marine enamel or spar varnish

ternate sides (Fig. 4). Screwfasten keel to stem notch with two #10 x 2 $\frac{1}{2}$ in. fh screws counter-sunk below the planing level necessary to fair keel into stem. Chines are next, beveled on the end to fit the stem and sprung into shape simultaneously to keep from wringing the frames out of shape. Screwfasten chines to each frame with one #8 x 1 $\frac{3}{4}$ in. fh screw. Fasten the #1 mold to chines with angle iron clips (Fig. 4).

Spring clamps in place together as you did

or galvanized nails. After the glue has thoroughly cured, these nails could be removed. Notch all frames, #1 to #4, for the keel, chines and clamps, notching through transom.

The building form can be sawed from rough lumber. Set it up like a saw-horse at a convenient working height. Once you build the form and #1 mold, you're all set to turn out a fleet of Blue Streaks as they can be used over again. Notch out form for frames (Fig. 4).

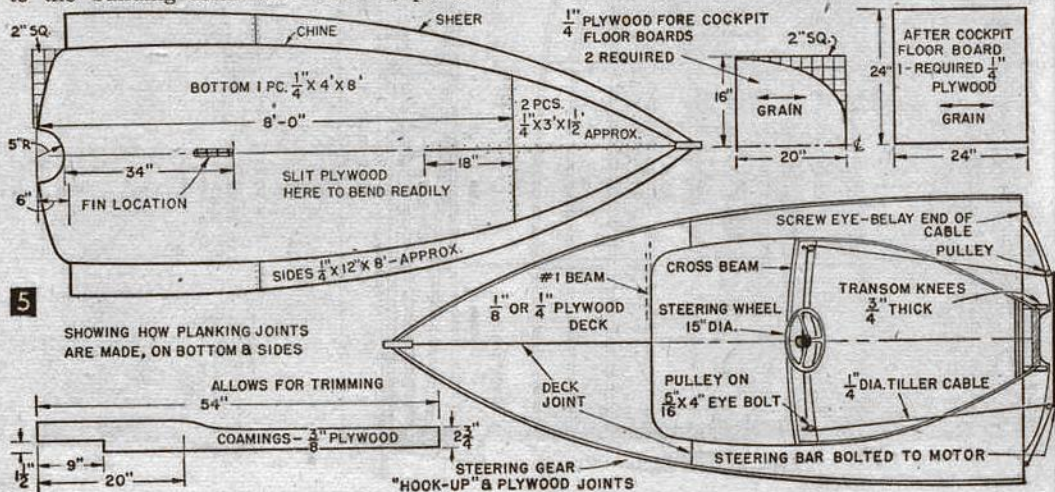
Saw out the inner stem and notch it for the keel as shown. A full-depth keel notch is not used because the keel is planed flush at the fore end later when the framing is faired. Assemble the frames on the form, clamping the ends of #1 mold to a cross-piece. Square and level the frames, bracing the ends securely. Clamp stem to form with scrap on each side.

When transom, frames and stem are aligned in position on the form, attach the keel with one #10 x 2 $\frac{1}{2}$ in. fh screw to each frame except #1 mold (removed later). Fasten the keel to the building form with steel strips on al-

with the chines, beveling the end at the stem and screw-fastening to each frame with one #8 x 1 $\frac{3}{4}$ in. fh screw. Starting at the transom, notch battens flush into transom and #2 and #3 frames. Battens on either side of keel are laid edgewise and those next to chines are laid flat (Fig. 4). Screw-fasten battens to frames with one #8 x 1 $\frac{1}{2}$ in. fh screw at each joint. Extend battens forward to butt against seam batten which covers plywood butt joint.

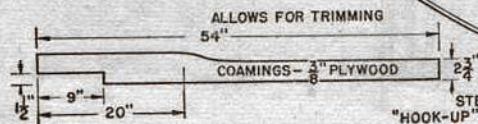
Before attaching the outer (aft) transom frame daub all contact surfaces liberally with Kuhls Bedding Compo. Screwfasten outer frame with #8 x 1 $\frac{3}{4}$ in. fh screws spaced 3 in. apart. With the hull framing complete, trim and fair all members to fit flush with the planking.

Sides are planked first with $\frac{1}{4}$ in. exterior grade (waterproof) fir plywood. Full-length plywood is better, if available, but a butt-joint backed up with a seam batten will be just as strong. Clamp the plywood in position; mark and saw to shape. Use this one side as a pattern for the second side. For 2-piece sides, lay



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SHOWING HOW PLANKING JOINTS ARE MADE, ON BOTTOM & SIDES



"HOOK-UP" & PLYWOOD JOINTS

an 8-ft. piece starting from the stem and back up the joint with a $\frac{3}{4}$ x 2 in. seam batten to fit between the chine and clamp. Coat chines, clamps and frames (except #1) with glue and screwfasten the side planking in place with #7 x $\frac{7}{8}$ in. *fh* screws spaced at 2 in. When the glue is thoroughly dry, trim evenly along the chines.

Start the bottom planking from the aft end using a $\frac{1}{4}$ in. x 4 x 8 ft. sheet. Allow for the bottom extension aft of the transom (Fig. 5) and clamp in position. Mark around the chine edges. After the bottom plank is removed and sawed to shape, saw a slit in the forward end (Fig. 5) to help bend the plywood to the frame and saw out the transom extension. Coat the keel and battens with glue and the chine joint with *Kuhls Bedding Compo* and screwfasten the bottom at all points with #7 x $\frac{7}{8}$ in. *fh* screws spaced at 2 in. At the forward bottom joint of plywood on each side of the keel, fit in a $\frac{3}{4}$ x 2 in. seam batten glued and screwed in a position the same as other framing. Shape the two fore ends, glue and screwfasten in place like the first bottom planking. When you have trimmed the bottom evenly along the edges remove the hull from the form, turning right side up, but leaving #1 mold in place until deck beams are installed.

Lay out the two deck beams and attach them to the hull with $\frac{3}{4}$ in. plywood knees on the forward side (Fig. 4). Use one $\frac{3}{8}$ x 2 in. *rh* bolt at each joint. The steering wheel beam may be placed perpendicularly to the hull or at an angle (Fig. 5) to give better wheel control. When the deck beams are in place, unscrew the angle clips and remove #1 mold. Notch the centerline forward deck batten into the forward deck or flatwise if you plan to split the decking.

The motor board and angle blocks are cut next and bolted to the transom (Fig. 4). Notch the carlins flush into frames, and screwfasten with one #8 x $1\frac{1}{4}$ in. *fh* screws at each joint. You can fit the seat boards and paint or varnish them, for fastening in place later after the hull has been painted and dried.

Before covering the fore end of the boat, varnish or paint the interior as follows: For a

natural finish inside, apply two coats of clear *Firzite* to plywood and frames followed by two coats of a clear spar varnish. If you prefer to paint the interior, follow with marine enamel.

Lightweight decking for a true racer should be $\frac{1}{8}$ in. plywood, but $\frac{1}{4}$ in. plywood can be used. Clamp the decking in position, mark and cut to shape. A single piece of the $\frac{1}{8}$ in. plywood for the whole forward deck will save butting two pieces over the centering deck batten. Cover the contact surfaces with *Kuhls Bedding Compo* and screwfasten the deck with #6 x $\frac{3}{4}$ in. *fh* screws spaced at 3 in. Trim the plywood evenly along clamp edges and cockpit and install shaped coamings in the aft cockpit. Aft end of coaming is notched out along bottom to fit over side deck and for fastening to angle block of motor board while fore end is shaped to fit steering wheel beam. Screwfasten coamings with #8 x 1 in. *fh* screws spaced at 4 in. except at motor board which requires two #8 x $1\frac{1}{4}$ in. *fh* screws at each joint.

Outer bow stem may be cut from 1 in. plywood or from built-up layers of thinner plywood bonded with waterproof glue. Trim the inside line of the outer stem to fit the bow and screwfasten in place with two #10 x $2\frac{1}{4}$ *fh* screws well countersunk. Screwfasten the moldings in place with #8 x 1 in. *fh* screws spaced at 8 in. To cover the planking joint at the chine, daub *Kuhls Bedding Compo* along the joint and nail the paint strips on with $1\frac{1}{4}$ in. galvanized shingle nails. Flooring, after it has been varnished or painted, is screwed to battens and keel.

Now Comes the Paint Job

For a paint finish outside, first apply a coat of white *Firzite*, dry putty all screw heads and apply second coat of white *Firzite* plain or tinted as a foundation coat. Sand lightly with 6/0 garnet paper and apply third coat of white or tinted *Firzite* followed by two coats of marine enamel. For a natural finish, use clear *Firzite* and cover screw heads with a thick mixture of glue and sawdust or matched *Plastic Wood* or colored putty. Lightly sand each of three coats of clear *Firzite*, then apply two coats of varnish.

Attach the 15 in. steering wheel to the steering beam on centerline and rig the pulley and control cable system as shown in Fig. 5. Attach the aluminum fin to the bottom (Fig. 5).

A forward cockpit cover of awning canvas cuts wind resistance and affords slightly faster speeds when racing with one person aboard. It can be fastened to the fore edge of the cockpit with canvas fasteners to be removable or screwed under washers and covered with a walnut or mahogany molding strip.



● Craft Prints in enlarged size for building outboard engine racing boats are available at 50c a set (no C.O.D.'s). Order by print number from Craft Print Dept., SCIENCE AND MECHANICS, 450 East Ohio St., Chicago 11, Illinois.



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