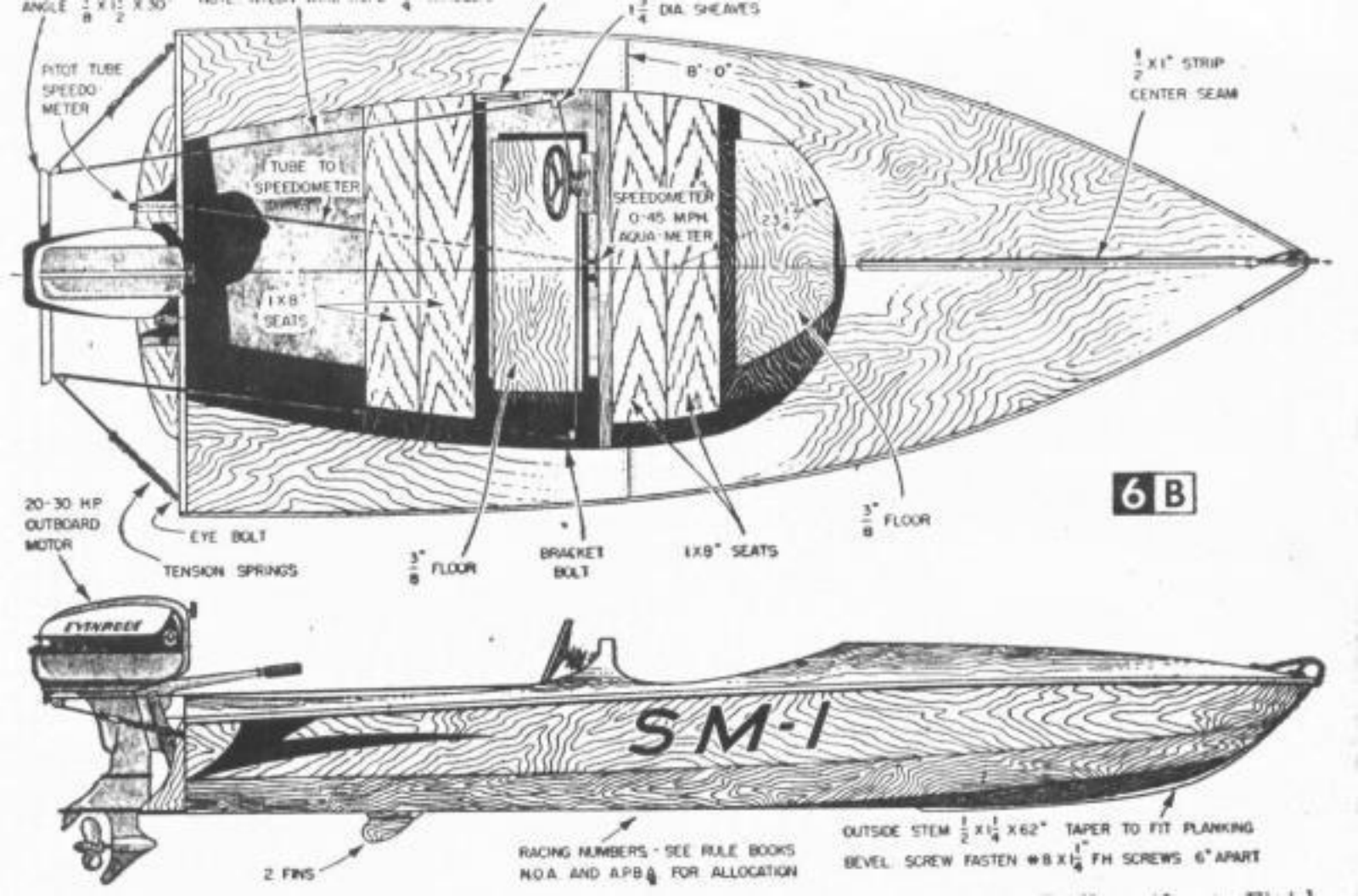
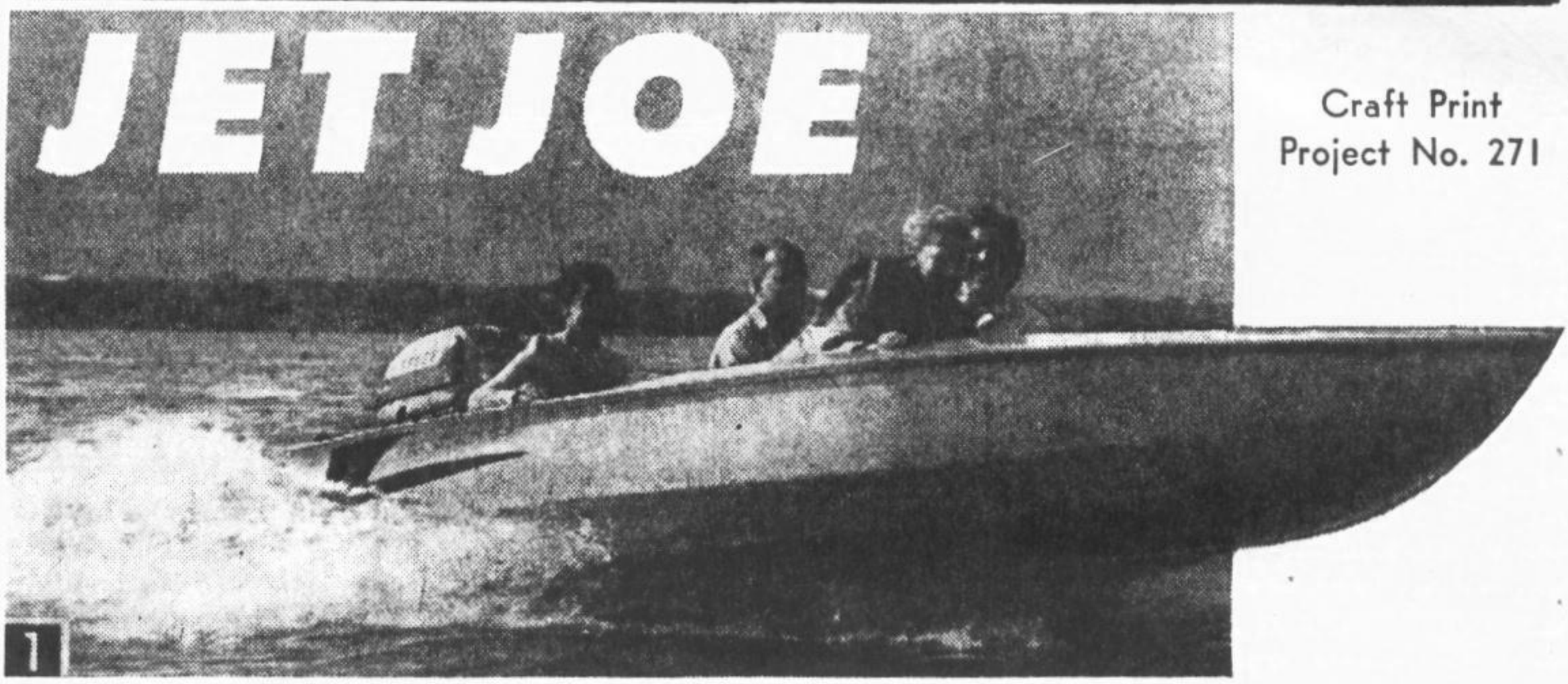

PITOT TUBE SPEEDO METER
TUBE TO SPEEDOMETER
1X8" SEATS
8' 0"
SPEEDOMETER 0-45 MPH. AQUA-METER
1/2 X 1" STRIP CENTER SEAM
6B
20-30 H.P. OUTBOARD MOTOR
EYE BOLT
TENSION SPRINGS
3/8" FLOOR
BRACKET BOLT
1X8" SEATS
3/8" FLOOR
SM-1
2 FINS
RACING NUMBERS - SEE RULE BOOKS N.O.A. AND A.P.B. FOR ALLOCATION
OUTSIDE STEM 1/2 X 1 1/4 X 62" TAPER TO FIT PLANKING
BEVEL SCREW FASTEN #8 X 1 1/4" FH SCREWS 6" APART

Section 1 Sports and Racing Runabouts



Craft Print
Project No. 271

Sturdy, High-Speed Utility Racing Hydroplane

By WILLIAM D. JACKSON
Naval Architect

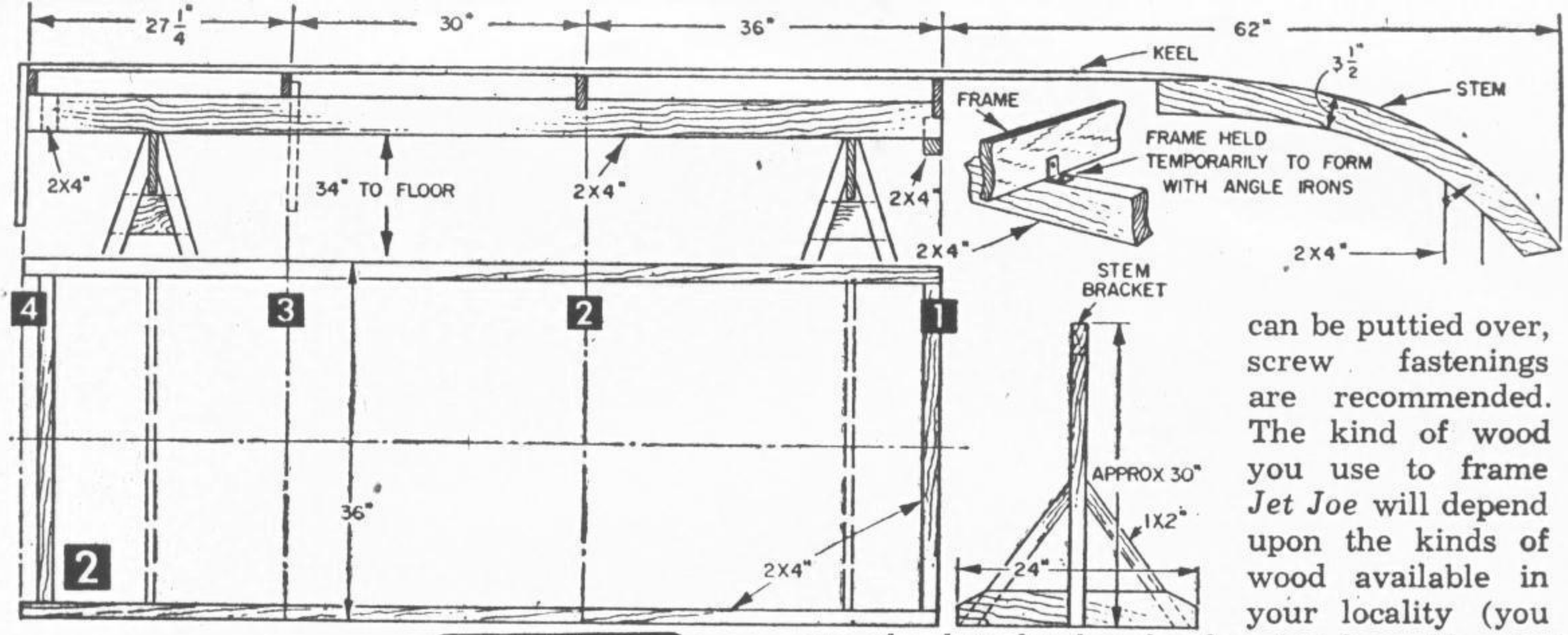
PUT it in water and—like a certain widely advertised soap—*Jet Joe* does everything. Not only does it do double duty as a utility and sports boat—hauling passengers, pulling water skiers and the like—but it also qualifies as a closed-course and marathon racer, fulfilling all requirements of the American Power Boat and National Outboard associations for sanctioned racing with stock, two-cylinder outboard motors of the Evinrude *Big Twin* type. (To obtain a copy of the racing rules of these associations, write the American Power Boat Association, 700 Canton Avenue, Detroit 7, Michigan, enclosing $2 for their *Yearbook*, or write the National

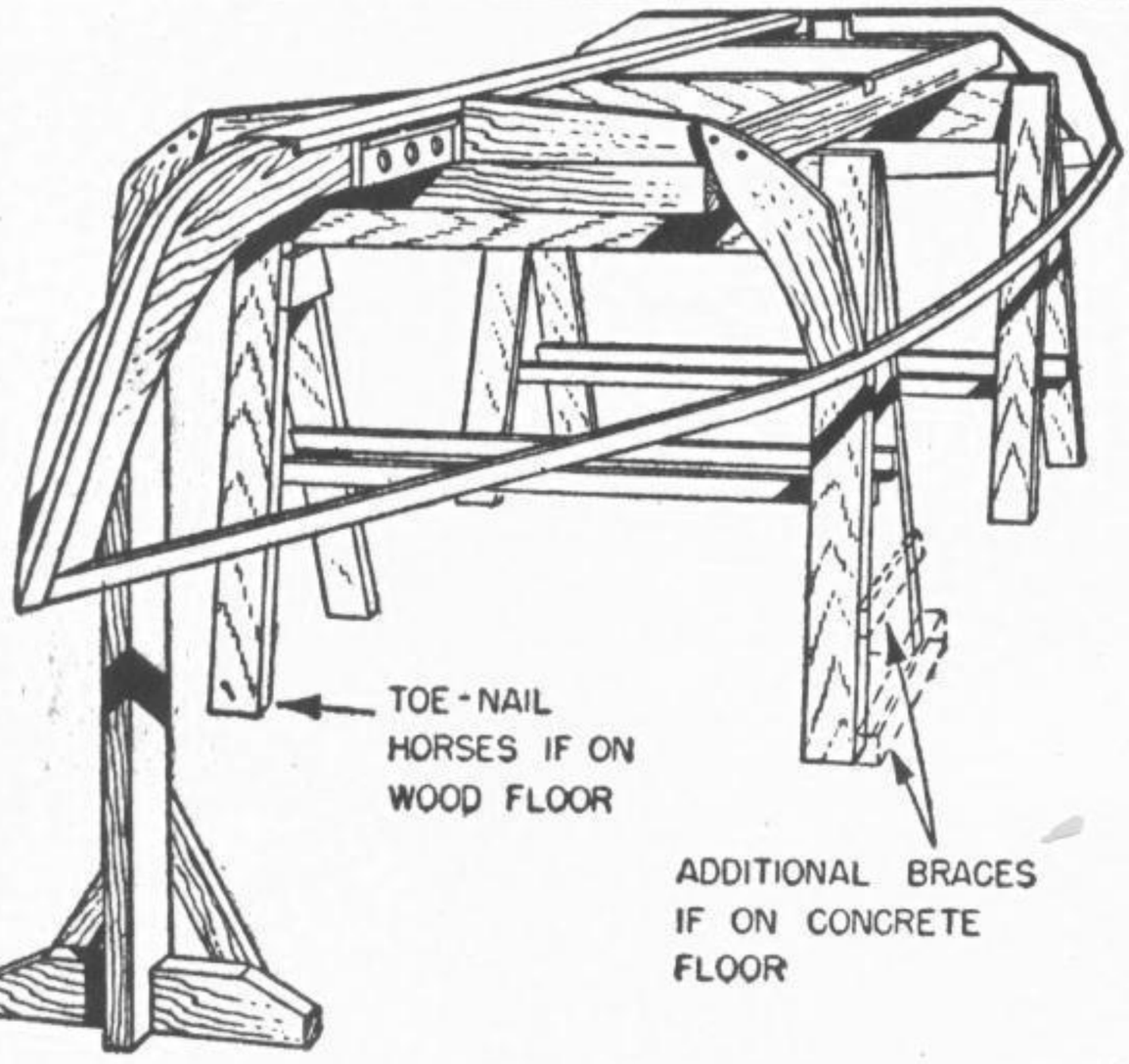
STATEMENT OF USES

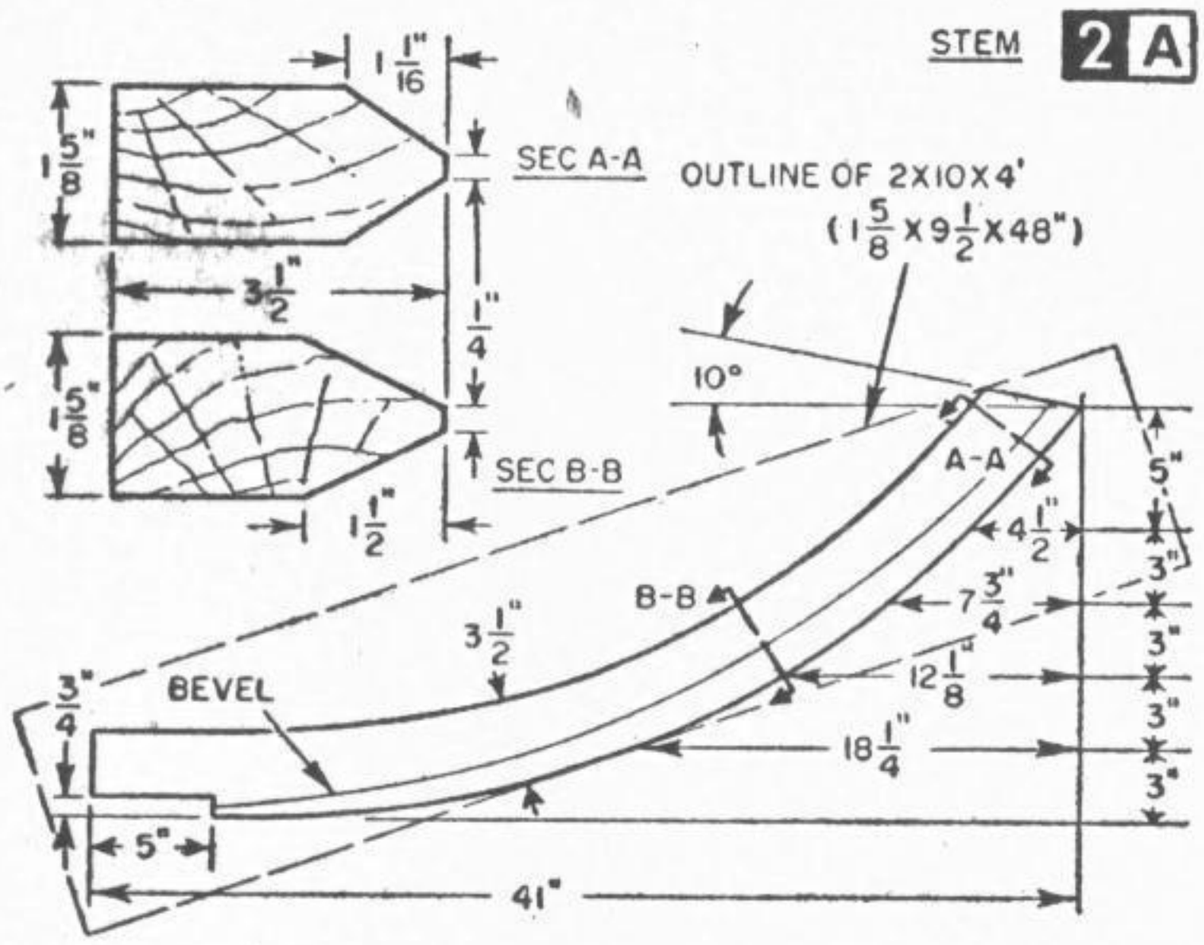
USES: Highly maneuverable, general purpose hull for sports and utility use anywhere; rough or smooth water racer, class 36-APBA or DU-1-NOA.
TYPE: Utility racing hydroplane.
LENGTH: 13 ft.
BEAM: 63 in.
DEPTH: Conforms to APBA and NOA rules for class.
WEIGHT: 250 lbs.
SEATING CAPACITY: Five passengers as utility-sports boat; one as racer.
POWER: 30 *hp* Evinrude or Johnson ('51-'56 motors).
CONSTRUCTION: Plywood sides and decking; multiple beveled sides for high-speed turns, flat planing areas.
REMARKS: Medium-weight, excellent rough-water boat; easy entrance.

***Jet Joe* performs equally well as either a family runabout or as a sanctioned racer. And it qualifies as a racer in a class where winning depends primarily upon skill, not at all upon how much your equipment cost you.**









Outboard Association, 707 Market Street S.W., Knoxville, Tennessee. The NOA rules are free.)

Fir plywood was used on sides and decking of the original *Jet Joe,* but for about a third more spent on African or Philippine mahogany plywood, you will have an even handsomer craft. Again, nails were used as fastenings in the original model, but since it is difficult to prevent hammer marks from showing around nail heads (unless you use a blunted nail set to drive the nail home) and since countersunk screw heads can be puttied over, screw fastenings are recommended. The kind of wood you use to frame *Jet Joe* will depend upon the kinds of wood available in your locality (you can also buy lumber for framing from Maurice L. Condon Co., Inc., 270 Ferris Avenue, White Plains, N. Y.). White oak was used as framing on the original model—no racing advantage is gained by using lighter weight woods since ballast would then have to be carried—but red oak, coated with Kuhls *Three-Way Preservative,* can also be used. In any event, use a fairly hard, dense wood for framing. Finally, it is recommended that you cover the hull of your boat up to the knuckle chines with fiber glass. (See the Materials List for a source of supply; instructions for application come with the fiber glass.)

Construction. After securing the materials you will need for *Jet Joe,* nail together its building form and make its stem bracket (Fig. 2). Then draw full-size patterns of the framing pieces shown in Fig. 3A on heavy wrapping paper. If the paper you use is heavy enough, you can cut templates from it; if not, transfer outlines of each piece to lumber with a toothed wheel similiar to a dressmaker's wheel or with a prick punch. Saw out the pieces and fasten side frame members to bottom members with cadmium-plated 3/16 x 2-in. or 1/4 x 2-in. carriage or *rh* stove bolts, two bolts to a joint, a plated washer under each nut. Fastening of the deck beams comes later.

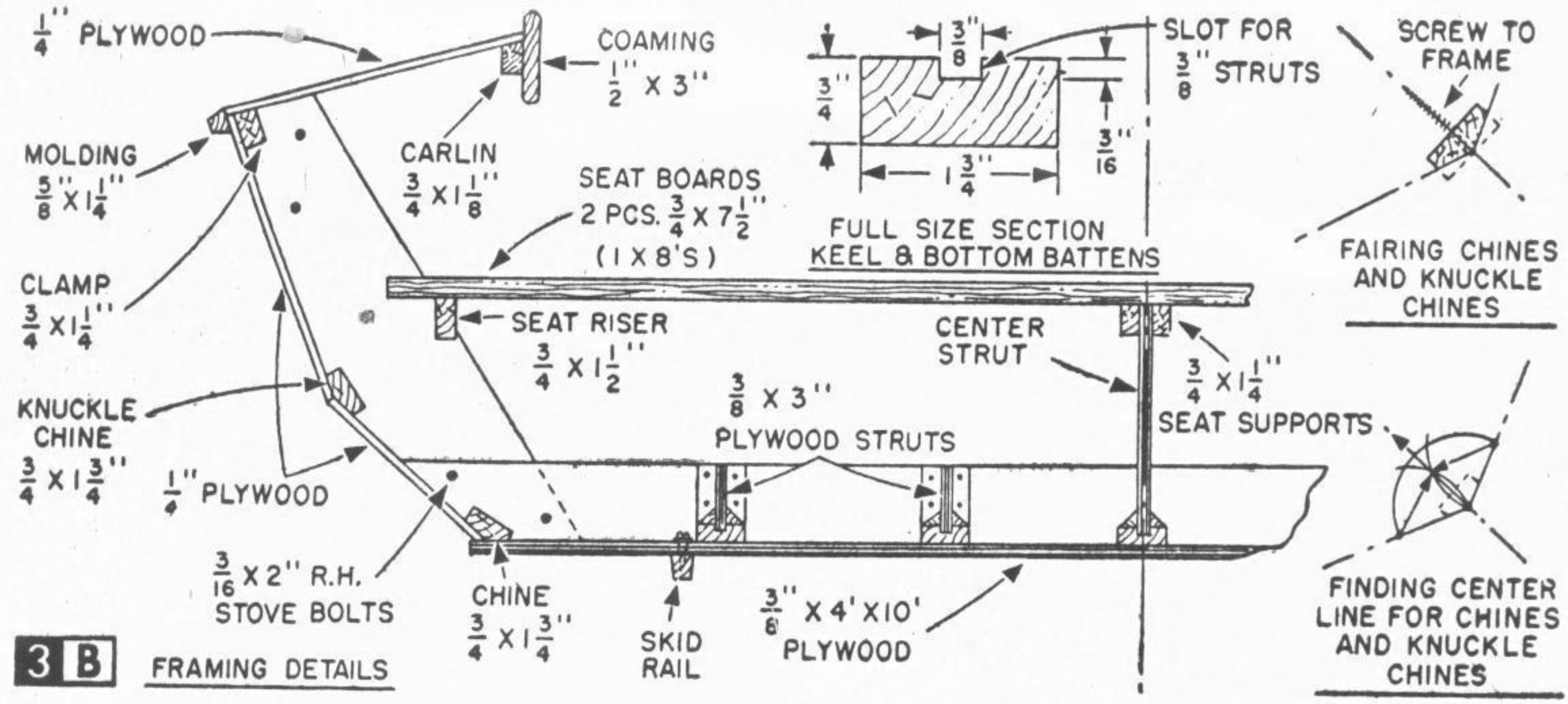
Lay out the transom (Fig. 3A) directly on 3/4-in. plywood, saw to outline, coat contacting surfaces of it and #4 inside framing, with *Elmer's Waterproof* (or *Weldwood*) glue and screwfasten from framing to plywood with #8 x 1½-in. *fh* screws, staggered and spaced at 2½-in. intervals. Next, glue and screwfasten the 2 x 4 uprights to the transom with #8 x 1½-in. *fh* screws, this time fastening from plywood to uprights. After glue has dried, position frames on building form. Mark center point accurately on each frame, stretch a chalk line down center of keel line to get correct alignment, and fasten all frames but #4-transom to form with angle irons and #7 x 3/4-in. *fh* screws. It may be necessary to notch for some of the frames, particularly #2; the transom is simply clamped to the form with one or two Jorgenson C-clamps.

Now rabbet the keel as indicated in Fig. 3B,

position it on form and mark frames for keel notches. Remove keel and saw out notches. Lacking a small power saw, use hand saw and chisel for this job, finishing with a wood rasp (such as Stanley's *Surform*) for a close fit. Lay keel in notches, check it and frames for correct alignment, position stem (Fig. 2A; screw-fastened to bracket as in Fig. 2), and clamp to fore end of keel. Check and double-check the spacing from #1 frame to the top of the stem, because if your boat fails by 1 in. to achieve a 13-ft. length it cannot compete in sanctioned races.

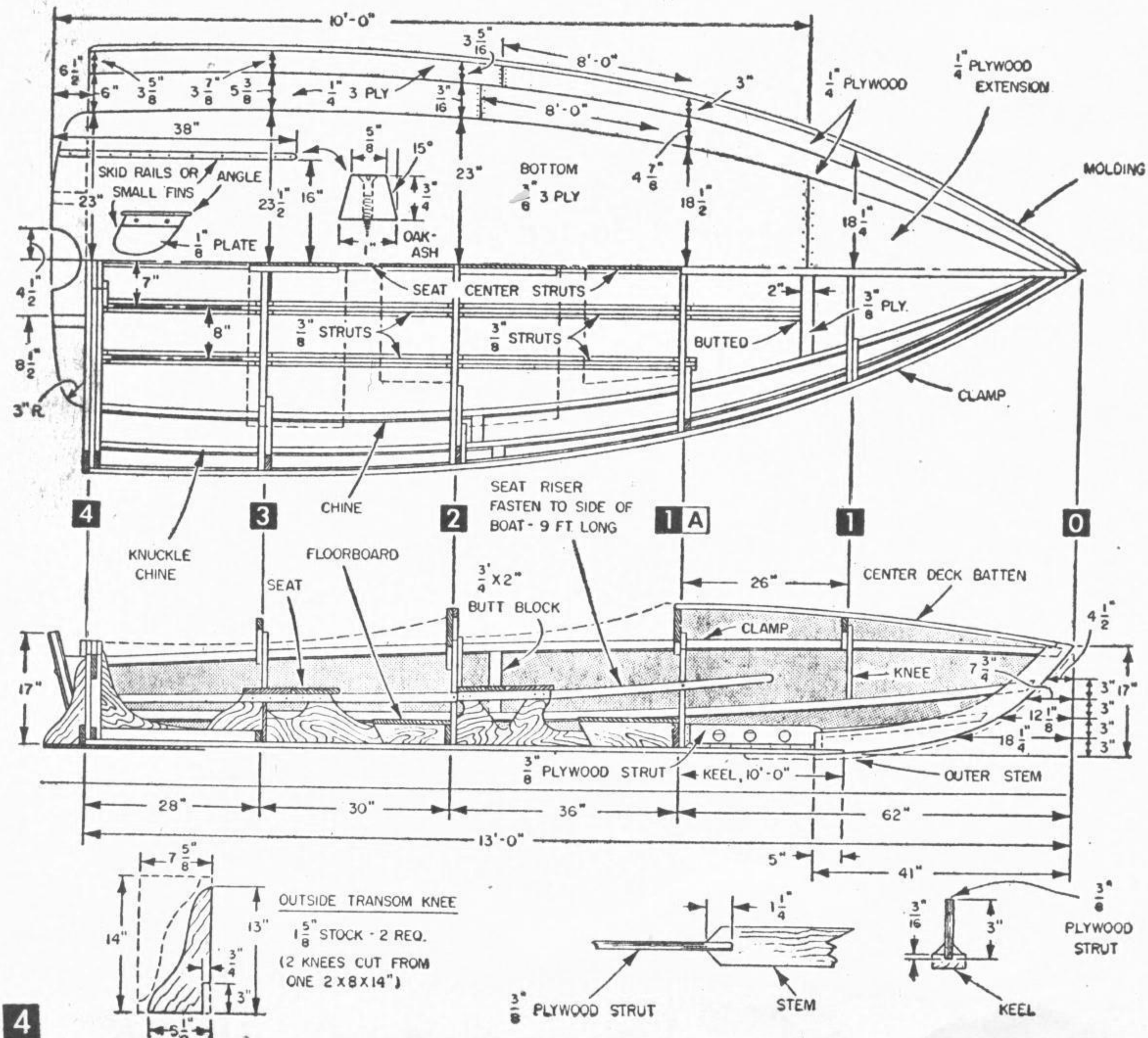
Next, rabbet aft end of stem for the ⅜-in. plywood strut shown in Fig. 4, glue-coat all contacting surfaces, and fit strut into keel and stem rabbets, fastening with 1¼-in. galvanized shingle nails or #14 x 1-in. galvanized *Stronghold* annular-thread nails through soft wood, tri-corner strips. Now screw-fasten keel to frames and stem with two #8 x 1¾-in. *fh* screws at each joint.

To fit clamps (sheer battens) to frames, take a short waste length of batten stock, approximate it in position on each frame, mark, and notch frame.

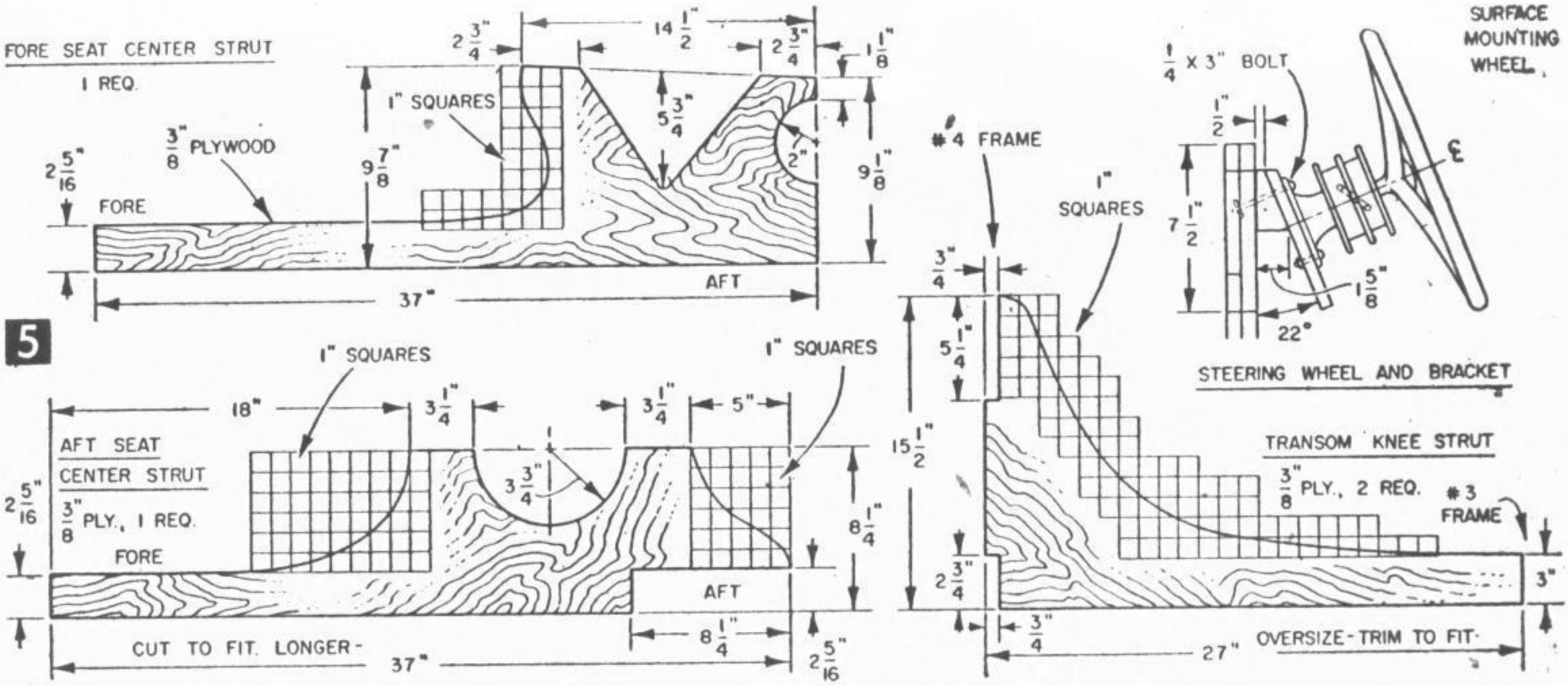


3 B FRAMING DETAILS

Spring clamps in place and clamp, bevel ends for fit to stem, make final alignment of frames, and screwfasten clamps with one #8 x 1½-in. *fh* screw at each joint. Mark for notches for chines and knuckle chines in a similar manner, using a waste length of batten to approximate position, finding center line and fairing these battens as shown in Fig. 3B. Saw notches by making a



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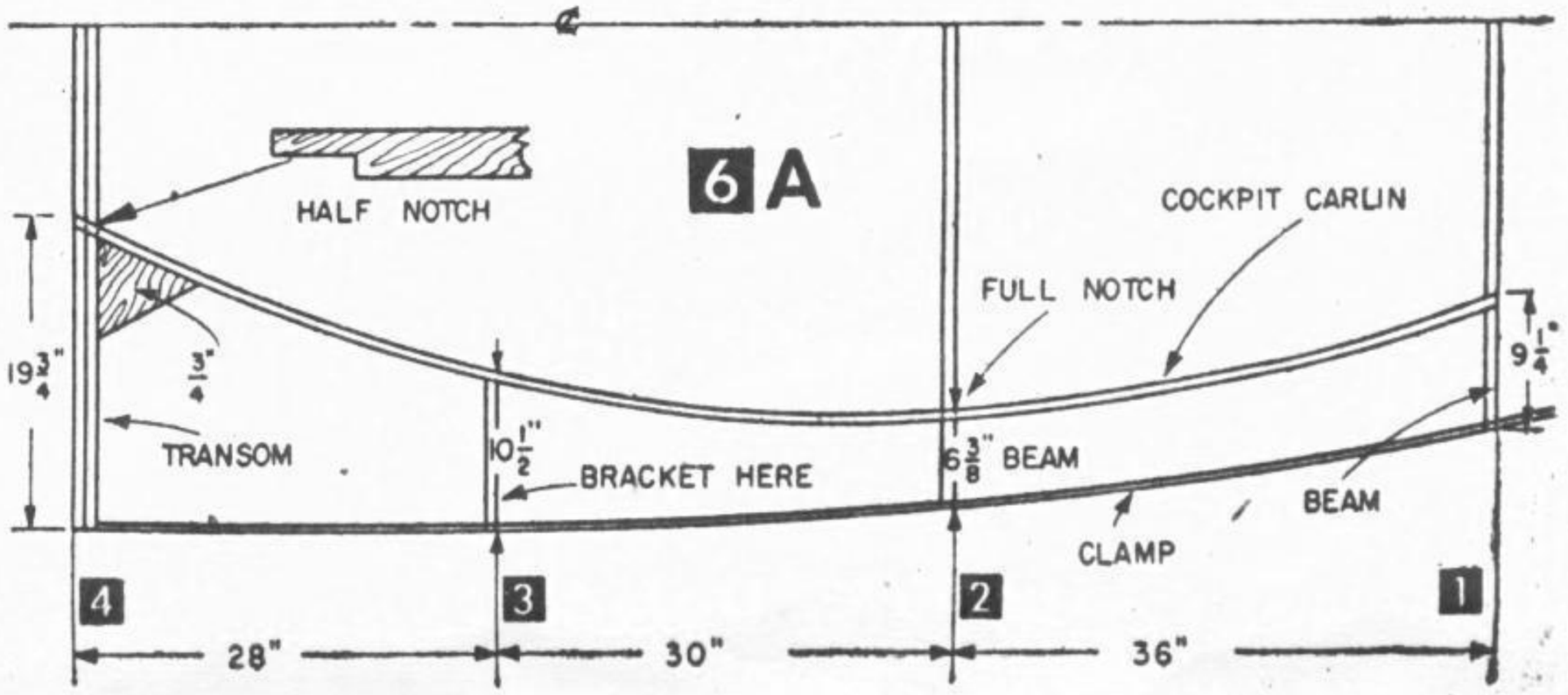


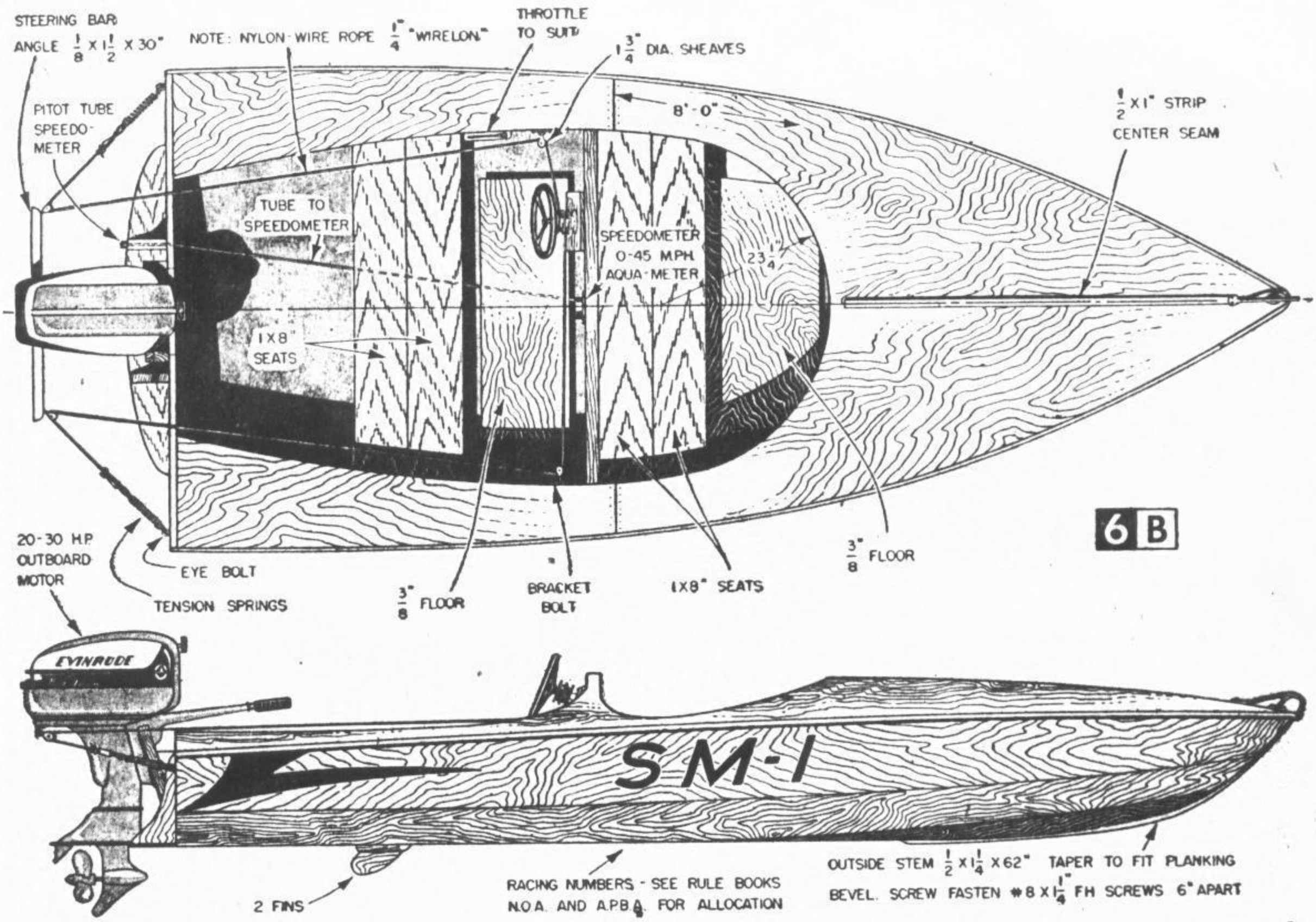
series of saw cuts, carefully cutting out waste with a wood chisel, and finishing with a rasp. Saturate chines from #1 frame to stem with hot water, bevel chines and knuckle chines for fit to stem, clamp in position, and fasten with one #8 x 1¾-in. *fh* screw at each joint.

Now rabbet bottom battens as shown in Fig. 3B, notch them flush into frames and screwfasten with one #8 x 1½-in. *fh* screw at each joint. With all battens in place, trim and fair hull framing—using either a power plane or a jack plane and wood rasp—checking fairness of all joints with a light wood batten as you go along. With hull framework faired, trim projecting ends of clamps, chines and keel flush with the transom.

Take previously cut outside #4 frame (Fig. 3A), glue-coat contacting surfaces of it and transom and fasten in place with two rows of #8 x 1½-in. *fh* screws. When glue has thoroughly dried, fair outer edges of transom and outside #4 frame, being very careful to get bottom of transom exactly level with the keel. If there is even a slight dip at this after edge, *Jet Joe* will gallop and become unmanageable under way.

Planking. If you are going to cover the hull with fiber glass later, bond all planking joints to framing with *Elmer's Waterproof* (fiber glass won't adhere to calking compounds). If you are not going to fiber glass the hull, use Kuhls *Bedlast* under all planking joints. Apply the ¼-in. planking which goes between chines and knuckle chines first. Make a heavy-paper pattern of both sections of this plank shape and transfer to a full-size plywood sheet, fitting for the most advantageous use of the stock. Use #7 x ⅞-in. *fh* screws through planking into clamps, #8 x 1-in. *fh* screws into chines, and #8 x 1¼-in. *fh* screws into framing. If you use nails as fasteners, adapt them to the framing material, thin nails into oak, heavier into softer woods. If your framing and battens are oak, for instance, use #16 x ⅞ in. or #14 x



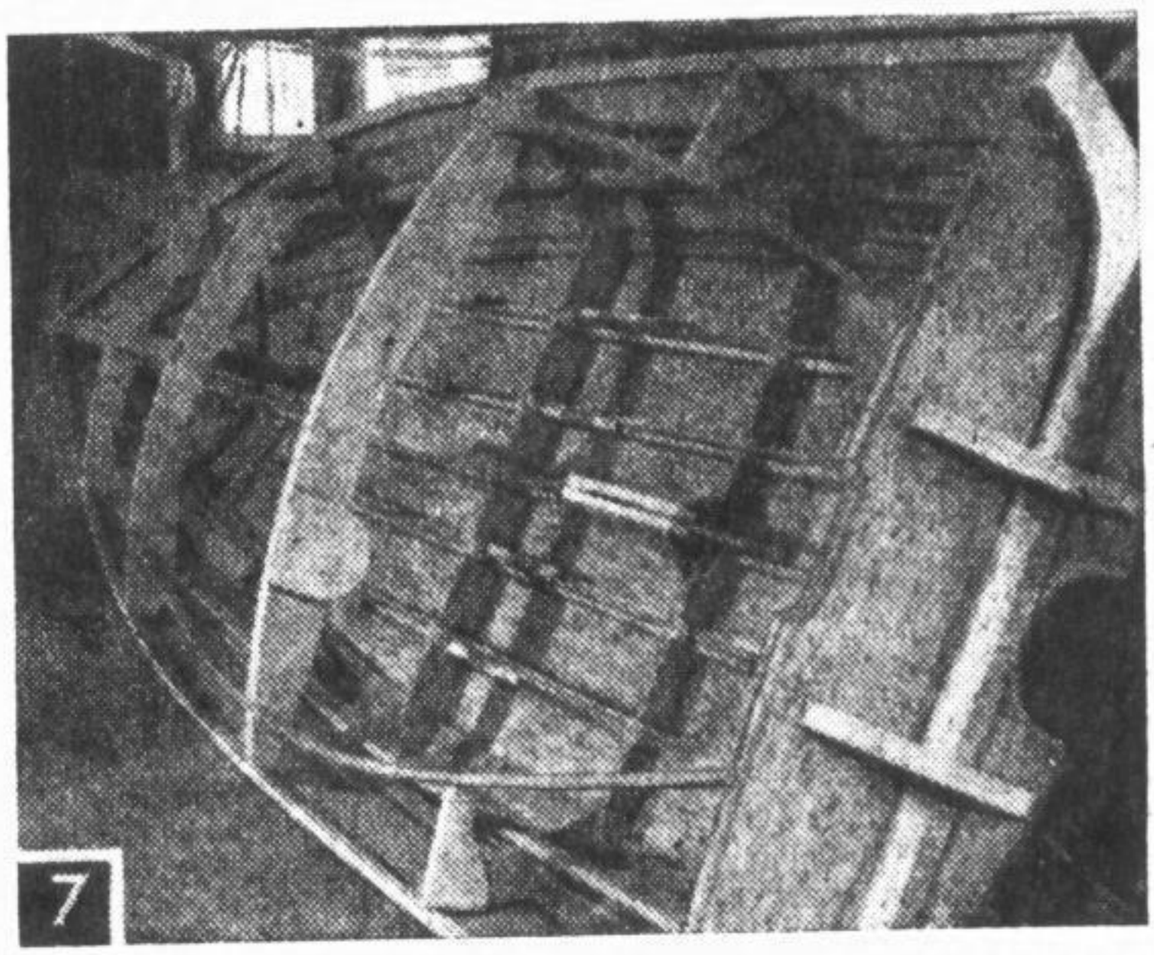


7/8 in. Monel *Anchorfast* nails; if they are of soft wood, use #14 or #12 x 7/8 in. A 3/4 x 2-in. butt block (see Fig. 4) goes at the joint between fore and aft sections of this planking, glue-coated and screwfastened with #8 x 1-in. *fh* screws. Install the sheer side planking in the same manner, using butt blocks at the joints and carefully fitting at the edges that land upon the knuckle chines.

To apply bottom planking, first trim and fair chine edges of side planking, then lay a 4 x 10 ft. sheet of 3/8-in. plywood in position on bottom, mark, remove and saw to shape. As indicated in Fig. 4, the bottom extends aft of transom. This extension may be omitted, but it does make for faster takeoffs. Slit center of 3/8-in. bottom sheet to bend readily and return to bottom to check fit. The after side edges of this bottom sheet should be left with a square edge from the transom to 40 in. forward at the chines (for optimum planing qualities); bevel edges from that point on. Crawl under hull, mark outline of all contacting framing on bottom plank, remove plank, and drill spotting holes at 18-in. intervals. Now coat all contacting surfaces with glue, replace plank on bottom and screwfasten or nail.

Two sections of 1/4-in. plywood are used as bottom planking at the bow. Where these meet the 3/8-in. sheet, secure joint with a 3/8 x 2-in. plywood batten (see Fig. 4), shimming with 1/8-in. plywood to insure a uniform bottom thickness. Remember: use glue at joints if you are going to fiber glass hull; Kuhls *Bedlast*, if not. Finish hull assembly by trimming edges of plywood along chines with a disc sander, or hand sanding, and screwfastening outer stem in place with #8 x 1 1/4-in. *fh* screws.

Now remove hull from form, turn it right side up on saw horses, and install deck beams. Bolt the #1 and 2 beams in place with 1/4 x 2-in. carriage bolts; screwfasten deck beam #1-A and the cockpit beam at #3 frame with #8 x 1 1/2-in. *fh* screws. Make and insert all bottom struts in rabbetted battens and keel (see Figs. 4 and 5), gluing and nailing in place and securing with


7

Jet Joe—about three-fourths of the way to completion —in designer Bill Jackson's workshop.

Racing Equipment Suppliers and Specialists

CRASH HELMETS

Wal-Mar Products Co.
123 South Saint Lawrence Ave.
Chicago 28, Illinois

SHOCK CORD

G. Hawthorne
10603 Stratman
Detroit 24, Michigan

TUNE-UP SPECIALISTS

Clyde Wiseman
30200 Lakeland Blvd.
Wickliffe, Ohio

Walter Blankenstein
6115 Fontana St.
Mission, Kansas

MODIFICATION PARTS

Quincy Welding Works
5th and State
Quincy, Illinois

Joe Grossman
440 North Broadway
St. Louis 7, Missouri

LIFE JACKETS

Billy Boy Products
Quincy, Michigan

Tapatco, American Pad & Textile
S. Washington St.
Greenfield, Ohio

BOAT SPEEDOMETERS

Ketcham & McDougall
465 Eagle Rock Ave.
Roseland, New Jersey

Michigan Wheel Co.
235 Market Ave.
Grand Rapids 3, Michigan

Air Guide Instrument Co.
2210 Wabansia Ave.
Chicago 47, Illinois

LONG RANGE FUEL TANKS

Maypole Boats & Motors
5901-07 W. Madison St.
Chicago 44, Illinois

G. B. Mills Co.
Cleveland, Ohio

THROTTLES

Quincy Welding Works
5th and State
Quincy, Illinois

PROPELLERS

Michigan Wheel Co.
235 Market Ave.
Grand Rapids 3, Michigan

Johnson Propeller Co.
603 Lancaster
Oakland 1, California

REFERENCE BOOKS

Outboard Racer's Manual, $3.75
Michigan Wheel Co.
235 Market Ave.
Grand Rapids 3, Michigan

Stock Outboard Racing, $3
Van Pelt Boat Co.
Spring Lake 1, Michigan

COMPLETE MOTORS—"SOUPED"

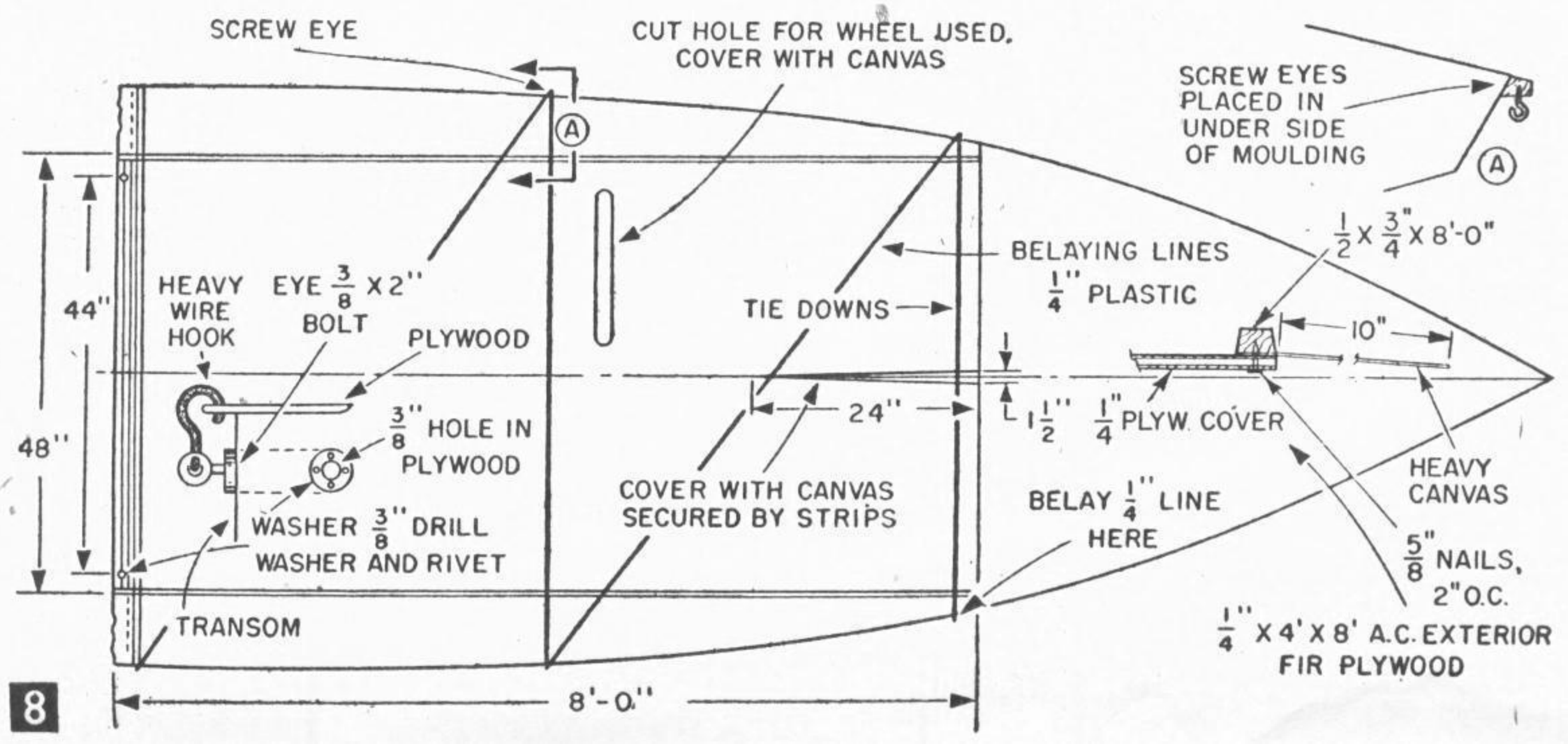
Randolph Hubbell
2511 N. Rosemead Blvd.
El Monte, California

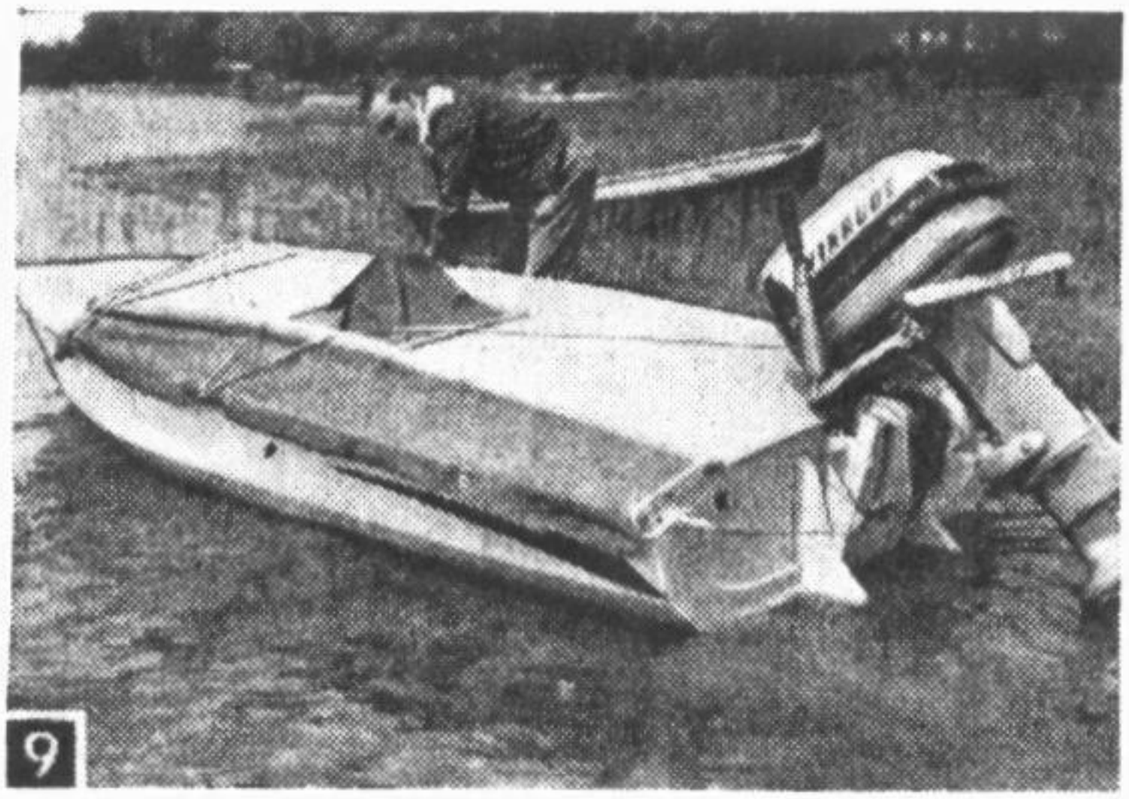
tri-cornered strips. It will take at least a day's work to complete this part of the job, so don't be disturbed by what you may feel is lack of progress at this point.

Next, notch for and screwfasten seat risers on frames (see Figs. 3B and 4), using one #8 x 1¾-in. *fh* screw at each joint. Notch deck batten into stem and into #1-A and #1 beams, fastening with one #8 x 1¾-in. *fh* screw at each joint. Install cockpit carlins as shown in Fig. 6A, half-notching ends into transom and #1 beam, and screwfastening with #8 x 1¾-in. *fh* screws, one to a joint. Install transom knee-struts and steering-wheel bracket (Fig. 5), trim all deck joints evenly, and you're ready to apply the ¼-in. plywood decking.

The vee-angle curve of #1-A deck beam together with the curves of the other beams permits the forward portion of the decking to cover a compound curve without stress. To apply decking, cut to shape and screwfasten with #7 x 1-in. *fh* screws spaced at 2 in., or nail in place with #14 x 1⅛-in. oval-head, *Stronghold* brass nails. Batten joints with ¾ x 2-in. battens, gluing and fastening at the joints, continuing back to transom, covering reinforced #2 beam with a ¼-in. strip and trimming evenly along sheer and cockpits when finished. The after cockpit can be left as is, or a ½ x 2-in. coaming can be installed each side, screwfastened with #7 x1-in. *fh* screws. Sheer edges of decking are covered with moldings screwfastened with #8 x 1½-in. screws spaced 8 in. apart.

Make motor board as shown in Fig. 5 (inner core is made from deck beam waste) and bolt in place. For greatest speed, install it at a height of 17 in. from bottom planking extension to top of motor board. (If cavitation occurs with motor board at this height, lower it ⅜ to ½ in., keeping it as high as practical, however, if you





Plywood cover for *Jet Joe* will not sag, hold water or suddenly disintegrate in high wind. And it's inexpensive!

have speed as your primary objective.) Outside transom knees are cut to shape shown in Fig. 4; glue-coat adjoining surfaces and screwfasten with #8 x 1¾-in. *fh* screws, six screws per knee. Cut floor boards to dimensions shown in Fig. 5 and screwfasten in place to bottom to ¾ x 1½-in. strips, glued and nailed to struts. Seats (Fig. 4) may be two 1 x 8 boards to each location or ¾ x 1¾-in. strips spaced at ¾-in. intervals. Screwfasten seats with #8 x 1½-in. *fh* screws.

If you are going to fiberglass bottom up to knuckle chines, follow manufacturer's directions for application of this material. If not, apply one coat of *Firzite* followed by one coat of Kuhls *Brushlast*, finishing off with two coats of *Boatlife*. If you glass the hull, apply one coat of flat finish to hull followed by two thin coats of enamel, smoothing each coat carefully except the last and taking special care to smooth the bottom. Decking and interior can either be given three coats of paint or three of varnish.

Your last job is installation of hardware as shown in Fig. 6B. If you are going to race your craft in sanctioned regattas, obtain a copy of the associations' racing manuals and pay their racing fee and you will receive an official number which becomes your property and denotes the area from which you come. When you have fulfilled the associations' regulations, paint this number on your boat and you're ready for racing.

A Plywood Cover (Fig. 9) that follows *Jet Joe's* contours can easily and inexpensively be made from a 4 x 8-ft. sheet of ¼-in., AC grade, exterior fir plywood and canvas. Cut plywood sheet as shown in Fig. 8, slitting the fore end. Place sheet atop boat and mark for steering wheel cut-out, allowing enough of a margin around wheel so that the cover will not bind. Remove sheet and make cut for wheel, then place ½ x ¾-in., 8-ft. railing strips over edge of 10-in. side canvas flaps and nail into them from underside of cover with ⅝-in. heavy gage wire nails. Cover forward slit with canvas, securing with strips, and make and tack in place a canvas hood for the steering wheel.

Install screw eyes on the underside of molding as shown in Fig. 8; tie downs can be looped under or through eyes when securing cover. The aft end of the cover is secured with two "S" hooks (bent from heavy wire) slipped in holes drilled in cover and ⅜ x 2-in. eye bolts in transom. These aft eye bolts can also be used for towing water skiers or aquaplaners.

Apply one coat of paint to underside of cover, two coats to topside and you're weather ready for any weather.

● Craft Print No. 271, in enlarged size for building Jet Joe is available at $1.50. 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, deduct 75¢; etc. Order by print number, enclosing remittance (no C.O.D.'s or stamps) from Craft Print Dept. B-57, SCIENCE AND MECHANICS, 450 East Ohio Street, Chicago 11, Illinois. See coupon on page 191. Now available, our new illustrated catalog of "151 Do It Yourself Plans," 10¢. Allow four weeks for delivery.

