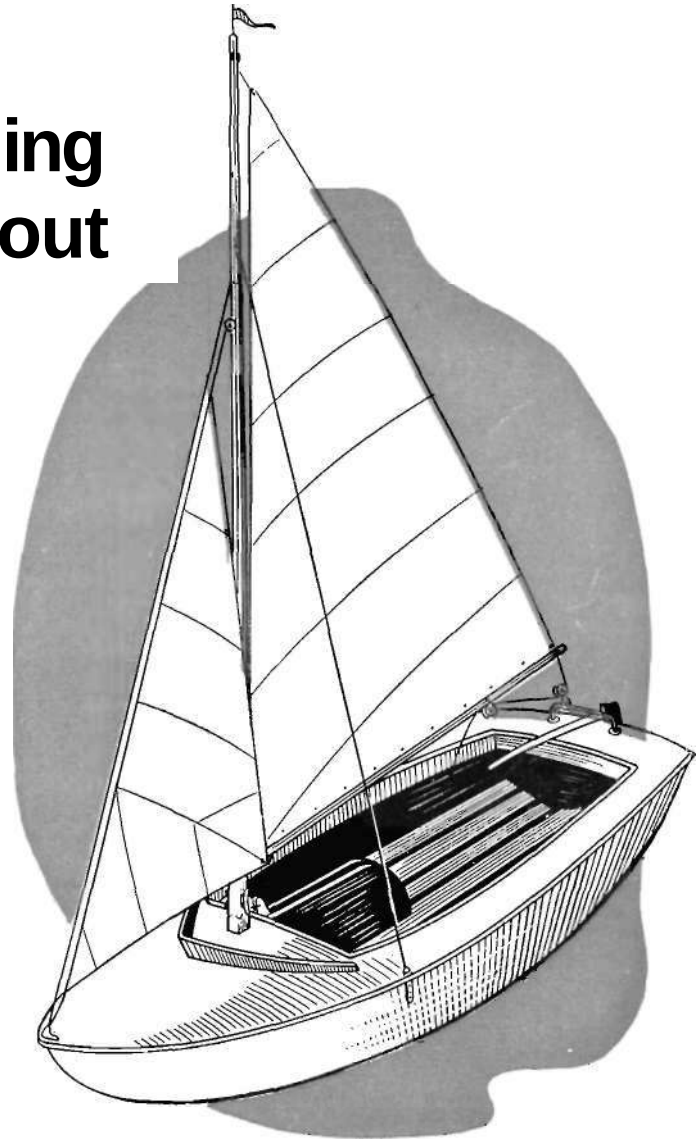
15-ft. Sailing Knockabout



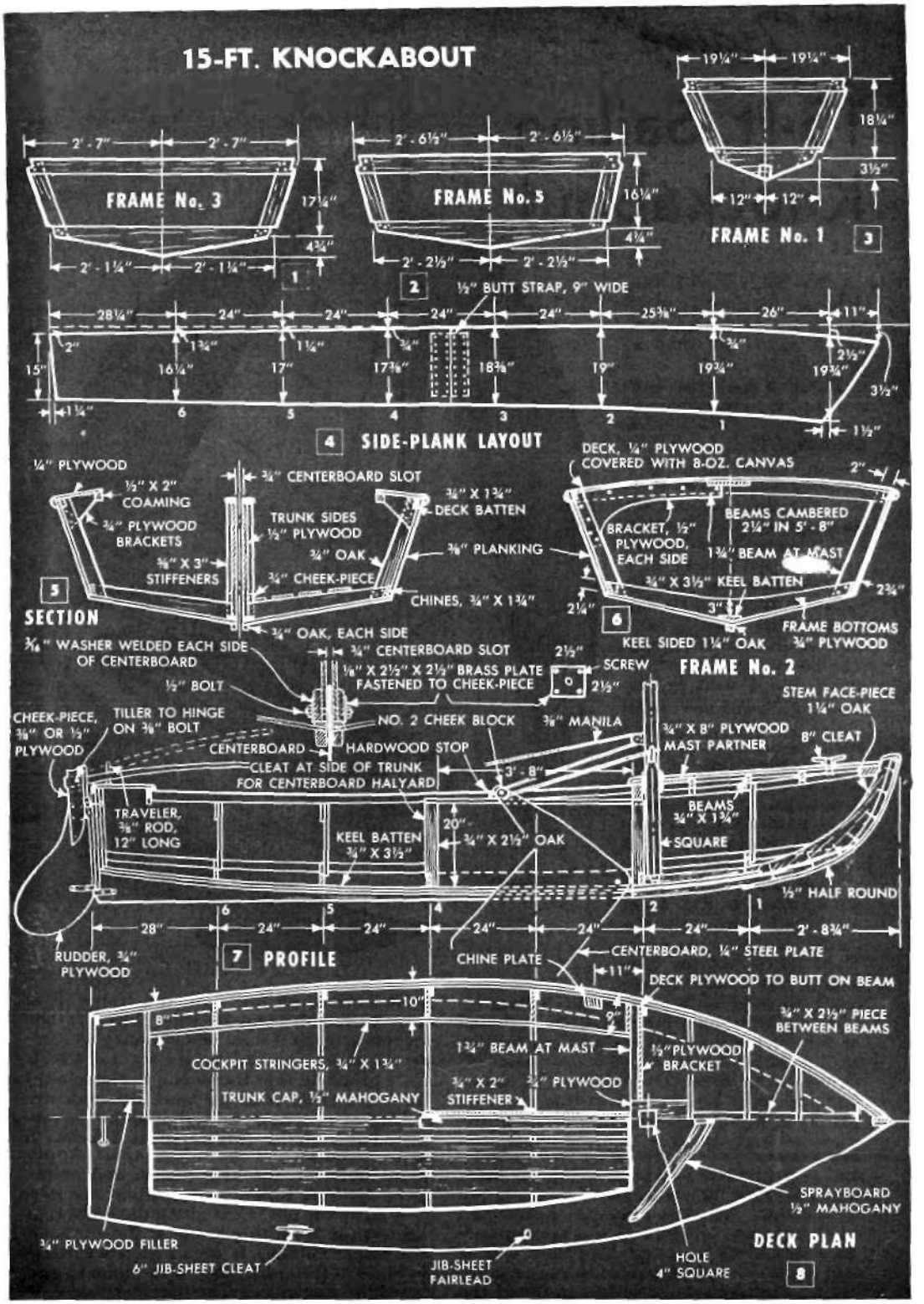
ANY SAILBOAT fancier will like "Tramp," the trim, 15-ft. knockabout that's so easy to build in plywood.

The first operation is to cut the stem, transom and side planks and assemble the forms, Figs. 1 to 6. Use casein or waterproof glue under the butt strap joining the side planks together. Screw-fasten them, using %-in. heavy-bodied wood screws of a size not less than No. 10. Allow 24 hours for the lap to dry. The stem is beveled as shown in Fig. 10. The bevel stops just at the sheer line. Forms can be made of almost any scrap material on hand. If you are a good enough mechanic, they can be dispensed with and correctly beveled frames made to their exact shape can be placed permanently in the boat. Screw-fasten the %-in. oak frame (shown as dotted lines in Fig. 9) at sides and bottom on the inside of the transom. Then notch out the bottom of the frame to receive the keel batten. Make this a snug fit.

Side planks must then be screw-fastened to the stem and the aft ends pulled together, the forms being slipped into place as this is being done. The transom is placed last and must be beveled so that the side planks fit tightly against the cleats and the transom edge. Be sure to place white lead and a thin thread of cotton between planks and stem and transom prior to joining them together. Also, in any phase of construction where more than two pieces are joined and watertightness is required, this same procedure should be followed. The stem will fit into the notch in frame No. 1 in such a manner that enough wood is left to bevel the stem bottom off fair with the frame. It is best to fasten stem to side pieces rather temporarily as it may be necessary to loosen the screws and adjust the stem so that it fairs properly into frame No. 1. The assembling is easiest with the boat upside down.

Chines are next and should be screw-fastened from the outside, using 1-in. No. 8 brass wood screws about 3 in. apart. Apply paint between the side pieces and chine. Deck battens follow in a similar manner.

A batten is now bent along the bottom at centerline. With this in place, the shape of the frame bottoms is obtained. Tack these in place at frames 2, 4 and 6 and then fit and bevel the side pieces. The frame should now


15-FT. KNOCKABOUT
FRAME No. 3
FRAME No. 5
FRAME No. 1
1
2
3
½" BUTT STRAP, 9" WIDE
4 SIDE-PLANK LAYOUT
5 SECTION
6
7 PROFILE
8
DECK PLAN
FRAME No. 2
¼" PLYWOOD
½" X 2" COAMING
¾" PLYWOOD BRACKETS
⅜" X 3" STIFFENERS
¾" CENTERBOARD SLOT
TRUNK SIDES ½" PLYWOOD
¾" OAK
¾" CHEEK-PIECE
¾" X 1¾" DECK BATTEN
⅜" PLANKING
CHINES, ¾" X 1¾"
¾" OAK, EACH SIDE
DECK, ¼" PLYWOOD COVERED WITH 8-OZ. CANVAS
BRACKET, ½" PLYWOOD, EACH SIDE
BEAMS CAMBERED 2¼" IN 5' - 8"
1¾" BEAM AT MAST
¾" X 3½" KEEL BATTEN
KEEL SIDED 1¼" OAK
FRAME BOTTOMS ¾" PLYWOOD
⅜" WASHER WELDED EACH SIDE OF CENTERBOARD
½" BOLT
⅛" X 2½" X 2½" BRASS PLATE FASTENED TO CHEEK-PIECE
SCREW
CHEEK-PIECE, ⅜" OR ½" PLYWOOD
TILLER TO HINGE ON ⅜" BOLT
CENTERBOARD
NO. 2 CHEEK BLOCK
⅜" MANILA
HARDWOOD STOP
CLEAT AT SIDE OF TRUNK FOR CENTERBOARD HALYARD
¾" X 8" PLYWOOD MAST PARTNER
STEM FACE-PIECE 1¼" OAK
8" CLEAT
TRAVELER, ⅜" ROD, 12" LONG
KEEL BATTEN ¾" X 3½"
¾" X 2½" OAK
BEAMS ¾" X 1¾" SQUARE
½" HALF ROUND
RUDDER, ¾" PLYWOOD
CHINE PLATE
CENTERBOARD, ¼" STEEL PLATE
DECK PLYWOOD TO BUTT ON BEAM
¾" X 2½" PIECE BETWEEN BEAMS
COCKPIT STRINGERS, ¾" X 1¾"
TRUNK CAP, ½" MAHOGANY
1¾" BEAM AT MAST
½" PLYWOOD BRACKET
¾" X 2" STIFFENER
¾" PLYWOOD
SPRAYBOARD ½" MAHOGANY
¾" PLYWOOD FILLER
6" JIB-SHEET CLEAT
JIB-SHEET FAIRLEAD
HOLE 4" SQUARE

be removed from the boat and fastened together using lV2-in. wood screws. A beam can be sawed to shape with a camber of 2V4 in. in 5 ft. 8 in., and used as a pattern for the plywood brackets. These are cut to the camber of the deck and attached to frame No. 2 before placing it in the boat. Next place a brace across the tops of frames 4 and 6. When these are in place remove the forms and replace with frames. Cut out the frames for the keel batten before placing them, since this is much easier to do on the bench.

The keel batten is our next step. The forward end is placed into the stem. The %-in. slot for the centerboard should be cut first, leaving a little wood at each end of the slot to be cut out later. The centerboard trunk should be made up, placing heavy white lead between the plywood and the end pieces. Fasten the plywood to the %-in. cheek-pieces and the trunk stiffeners before assembling. Use 1-in. screws through the plywood into the oak. Frame No. 3 will have to be cut in two, cutting out a slot 1% in. wide. The centerboard trunk must fit tightly against the keel batten and is fastened through the batten into the cheek-pieces with lVfc-in. screws. Here, too, put white lead and cotton in the joint. Drill a hole for the ^-in. centerboard bolt, *3V2* in. in from the end and IVi in. up from the bottom of trunk, and insert the bolt.

We are now ready for the bottom. With the aid of a batten as a guide, take a plane and trim up frames, chines, stem, etc. Put *on* the forward pieces first, beginning at the stem and using a i/^-in.-plywood butt strap as was done with the side pieces. Fasten bottom into chines and keel batten with 1-in. No. 8-screws about 2V2 in. apart. Don't forget the white lead and calking cotton. Pack calking well around the centerboard trunk and also tuck it in securely at the frames.

The balance of the job needs but little explanation as it is just a matter of fitting the parts in place, Figs. 7 and 8. Put in the deck beams, fastening their ends well into frames 1 and 2 and install the plywood brackets. A piece of scrap should be fastened inside the side plank opposite the chain plates. Fillers should be placed for jib-sheet cleat, traveler, and fairleads before putting *on* the deck. Paint the plywood well before stretching on the canvas. This should be stretched as tightly as possible and fastened around the edges under trie half-round with galvanized tacks.

The mast and rigging, Figs. 12 and 13, can be erected in several ways. Loops may be spaced around the mast or socket fittings may be attached to wire and in turn to metal strips or tangs screwed and bolted to the mast. One-eighth-in. aircraft strand may be substituted for the %o-in. wire shown. If the builder is not familiar with the rigging of small boats, see the section on "Mast, boom and fittings" on page 174.

The mainsail can be lashed to the boom, but slides and a track are handier, though a little more expensive. A wood pattern should be made for the centerboard, Fig. 12, and tested to make sure it can be pulled all the way up. Then the steel centerboard is cut and mounted. The centerboard rope belays to a cleat at the side of the centerboard trunk.

Fittings for hanging the rudder can be obtained at a marine-hardware store, as also can the gooseneck.

MATERIAL LIST FOR KNOCKABOUT

1 piece oak or mahogany, 1¾ x 11¼ in. x 4 ft.—for stem
1 piece oak or other hardwood, 1¼ x 4 in. x 5 ft.—for stem face piece
1 piece oak or other hardwood, 1 x 6 in. x 6½ ft.—for skeg
1 piece oak, ¾ x 3½ in. x 13 ft.—for keel batten
32 pieces oak, ¾ x 3 in. x diagram—for side frames and trunk ends
4 pieces oak, ¾ x 1¾ in. x 16 ft.—for chines and deck batten
2 pieces mahogany, 1 in. half round x 16 ft.—for guards
2 pieces fir, spruce, ¾ x 1¾ in. x 10 ft.—for cockpit stringers
1 piece fir, spruce, ¾ x 12 in. x 6 ft.—for beams
1 piece fir, spruce, 1¾ x 5½ in. x 5 ft.—for beams
2 pieces exterior fir plywood, ⅜ x 48 in. x 8 ft.—for side planking
2 pieces exterior fir plywood, ⅜ x 48 in. x 8 ft.—for bottom planking
1 piece exterior fir plywood, ½ x 48 x 50 in.—for centerboard trunk
1 piece exterior fir plywood, ¾ x 48 in. x 4 ft.—for transom, rudder and brackets
1 piece exterior fir plywood, ¼ x 48 in. x 8 ft.—for deck
1 piece exterior fir plywood, ¼ x 48 in. x 4 ft.—for deck
8 pieces cedar, spruce, fir, ½ x 3½ in. x 10½ ft.—for floor boards
2 pieces mahogany, ½ x 2 in. x 9 ft.—for coaming
1 piece mahogany, ½ x 6 in. x 4 ft.—for cockpit ends
1 piece mahogany, ½ x 4 in. x 6 ft.—for sprayboards
1 piece oak or hickory, 1 x 3 in. x 4 ft.—for tiller
1 piece spruce, 3 x 3 in. x 21 ft.—for mast
1 piece spruce, 2 x 2 in. x 11 ft.—for boom
1 piece fir or pine, ¾ x 6 in. x 12 ft.—for forms
3 pieces fir or pine, ¾ x 3½ in. x 8 ft.—for forms
2 pieces oak, ¾ x 4 in. x 4 ft.—for trunk cheek-pieces

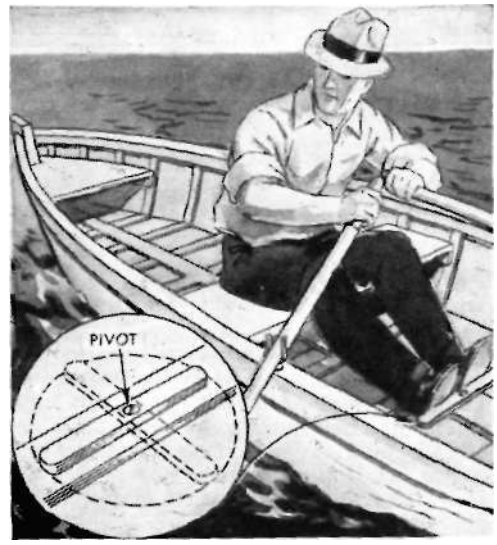
MATERIAL LIST FOR INBOARD

1 piece oak or fir, 2 x 7 in. x 8 ft.—for keel and deadwood
1 piece oak, 1⅜ x 2 in. x 9 ft.—for shoe
1 piece oak, ¾ x 3 in. x 10 ft.—for keel batten
2 pieces oak, ¾ x 1¾ in. x 13 ft.—for chines
2 pieces oak, ½ x 1½ in. x 14 ft.—for sheer batten
2 pieces oak, ½ x 1¾ in. x 9 ft.—for seat risers
2 pieces oak or fir, ¾ x 1½ in. x 5 ft.—for beam clamp
2 pieces oak, ¾ x 8 in. x 10 ft.—for frame bottoms
2 pieces oak, ¾ x 4 in. x 10 ft.—for frame sides
1 piece exterior-type plywood, ⅜ x 48 in. x 14 ft. or
1 piece exterior-type plywood, ⅜ x 48 in. x 8 ft. and
1 piece exterior-type plywood, ⅜ x 48 in. x 6 ft.—for bottom planking
1 piece exterior-type plywood, ⅜ x 48 in. x 14 ft. or
1 piece exterior-type plywood, ⅜ x 48 in. x 8 ft. and
1 piece exterior-type plywood, ⅜ x 48 in. x 6 ft.—for side planking
1 piece oak, 2½ x 10 x 20 in.—for engine bed
1 piece exterior-type plywood, ¾ x 48 in. x 5 ft.—for transom seats and frame gussets
1 piece exterior-type plywood, ½ x 21 in. x 4 ft.—for transom seat
1 piece fir or pine, ¾ x 1¾ in. x 8 ft.—for transom-seat support
1 piece exterior-type plywood, ¼ x 24 in. x 6 ft.—for deck
1 piece oak, ½ x 3½ in. x 3 ft.—for transom motor stiffeners
1 piece spruce, oak or fir, ¾ x 12 in. x 4 ft.—for beams
1 piece spruce, oak or fir, 2½ x 6 in. x 1 ft.—for breasthook
1 piece oak, 1¾ x 4 in. x 2 ft.—for stem
1 piece oak, 1¾ x 7½ in. x 4 ft.—for forefoot
2 pieces oak, ⅝ x 1 in. x 9 ft.—for guards
1 piece oak, 1¼ x 6 in. x 4 ft.—for false stem and forefoot
2 pieces cedar or pine, ¾ x 3½ in. x 9 ft.—for floor boards
3 pieces cedar or pine, ¾ x 5½ in. x 10 ft.—for floor boards
2 pieces fir or pine, 2 x 4 in. x 12 ft.—for set-up stringers
1 piece fir or pine, 1 x 4 in. x 14 ft.—for crossbands
1 piece fir or pine, 1 x 3 in. x 6 ft.—for braces
2 pieces oak, ⅝ x 1¾ in. x 10 ft.—for gunwale
1 piece oak, 1½ x 4 in. x 2 ft.—for knees

MATERIAL LIST FOR SKIFF

1 piece exterior fir plywood, ¼ x 48 in. x 12 ft.—for sides
1 piece exterior fir plywood, ⅜ x 48 in. x 12 ft.—for bottom
1 piece exterior fir plywood, ¾ x 15 x 40 in.—for transom
1 piece exterior fir plywood, ¾ x 15 x 24 in.—for forward seat
15 lineal ft. spruce or oak, ¾ x 3 in.—for frame sides
18 lineal ft. spruce or oak, ¾ x 1¾ in.—for frame bottoms
2 pieces spruce or oak, ¾ x 1¾ in. x 12 ft.—for chine
6 pieces spruce, oak or fir, ⅝ x 1½ in. x 12 ft.—for gunwale, guard and riser
6 pieces cedar, spruce or fir, ½ x 3½ in. x 8 ft.—for floor boards
1 piece cedar or spruce, ¾ x 9½ in. x 4 ft.—for thwart
1 piece oak, 1¾ x 4½ x 24 in.—for stem
1 piece fir or spruce, 1 x 3½ in. x 4 ft.—for skeg
1 piece oak, ¾ x 1 in. x 11 ft.—for keel
2 pieces oak, ½ x 1 in. x 10 ft.—for chafe strips
1 piece oak, 1½ x 6 in. x 3 ft.—for breasthook and knees
1 piece oak, ½ x 10 x 15 in.—for outboard pad
20 pieces fir, pine or scrap, ¾ x 2½ x 3 in.—for forms

Pivoted Footrest in Boat Swings Out of the Way for Bailing



Footrests usually are attached so that they are in the way when scrubbing or bailing out a boat. If the rest is pivoted, it may be turned out of the way when not in use. The pivot bolt should be tight enough to hold the rest in closed position.