skippy

A 9-ft. junior sailer with big-boat safety and performance; V-bottom hull has all-plywood construction.

MOST of the boats intended to be sailed by children are sorry-looking, tubby affairs on which the rigging and sails seem to have been added as an afterthought. Apart from the fact that they may capsize from a sudden puff or fill from the wash of a passing boat, a youngster has as much chance of learning how to sail in them as he would maneuvering a wash tub on the living room floor. And yet, as the plans on these pages will prove, there's no reason why a boat for the small fry can't have not only the lines, but the safety and performance of a larger sailboat. As her name implies, Skippy was designed to be sailed and raced by children or beginners (from 8 to 80) with no previous sailing experience. She is 9 ft. 3 in. overall with a beam of 4 ft. and a sail area of 48 sq. ft. in an easily-handled knockabout rig. A heavy steel centerboard, placed low in the boat, makes her extremely stable and, for further safety, the cockpit has purposely been kept small so the boat will sail well heeled without shipping any water. As a result of this combination, it is almost impossible to capsize the little sailer under normal conditions.

The construction of the boat is as simple as "A, B, C." All of the parts can be drawn full-size directly on paper patterns by following the dimensions given on the plans. And now, getting down to

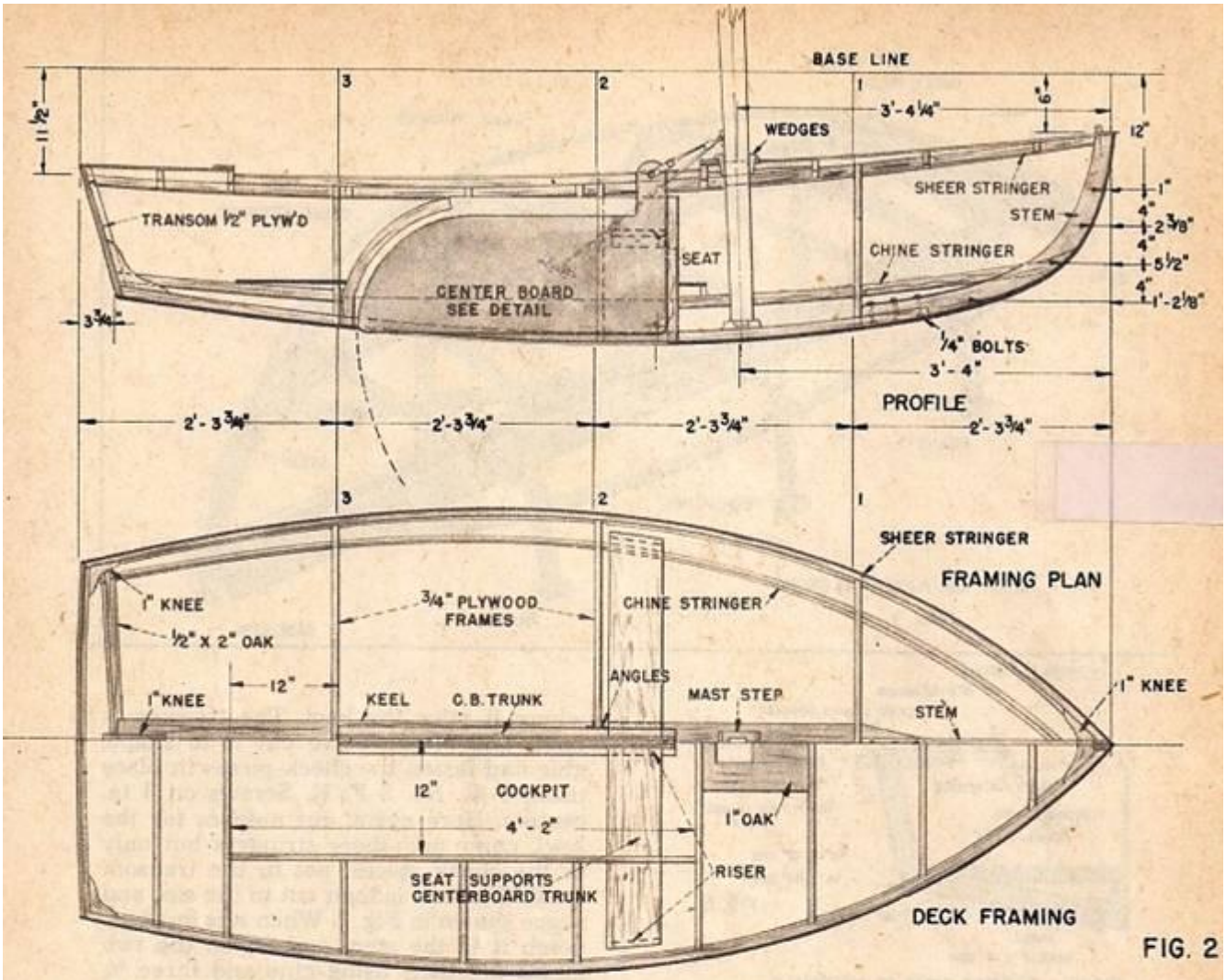
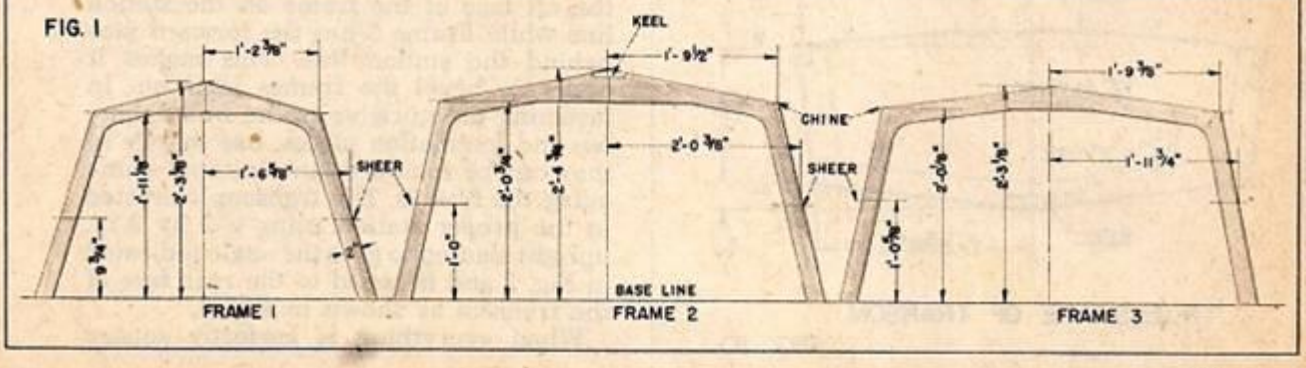


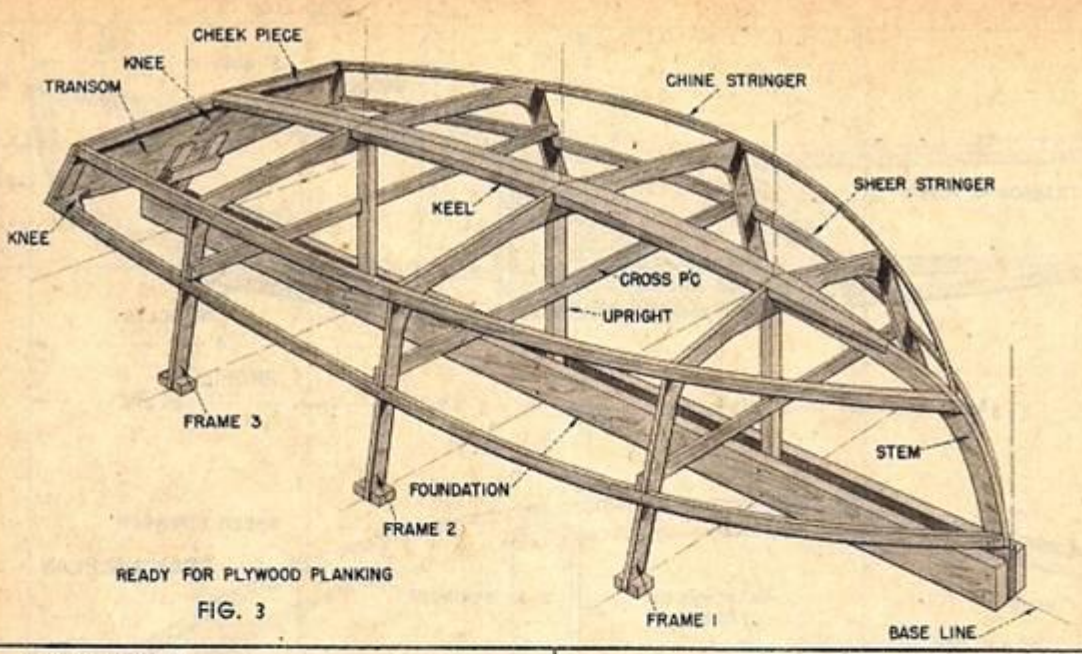
FIG. 2

the actual hammer and saw work, the first step is to make the one-piece plywood frames shown in Fig. 1. The sides of these are considerably longer than necessary so they can be assembled on a simple building form and the boat built bottom-side up, making it easier to frame and plank. When the patterns are finished, cut them out, both inside and out, so you can dovetail the shapes on the plywood and with a little juggling, cut the frames, rudder, knees, etc., from about half of a standard 4 by 8 ft. sheet.

After you've made the frames, tack a batten across them to keep the sides from spreading and then cut the notches for the keel, sheer and chine stringers in each one. Following this, lay the frames aside temporarily and get to work on the stem and transom. These are cut from ½ in. plywood following the dimensions in Figs. 2 and 10. The stem is made of two layers of ½ in. plywood glued and screwed together and then notched

FIG. 1





READY FOR PLYWOOD PLANKING

FIG. 3

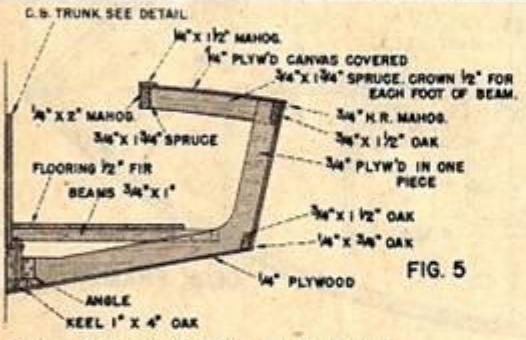
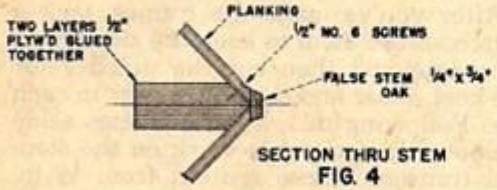


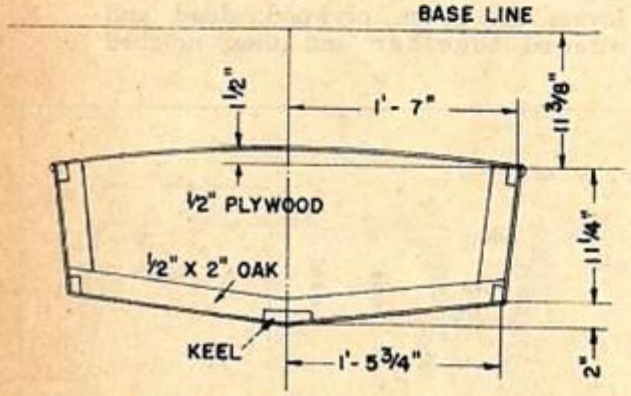
FIG. 5

FRAME 2 SHOWING SIZES OF MATERIALS



SECTION THRU STEM

FIG. 4



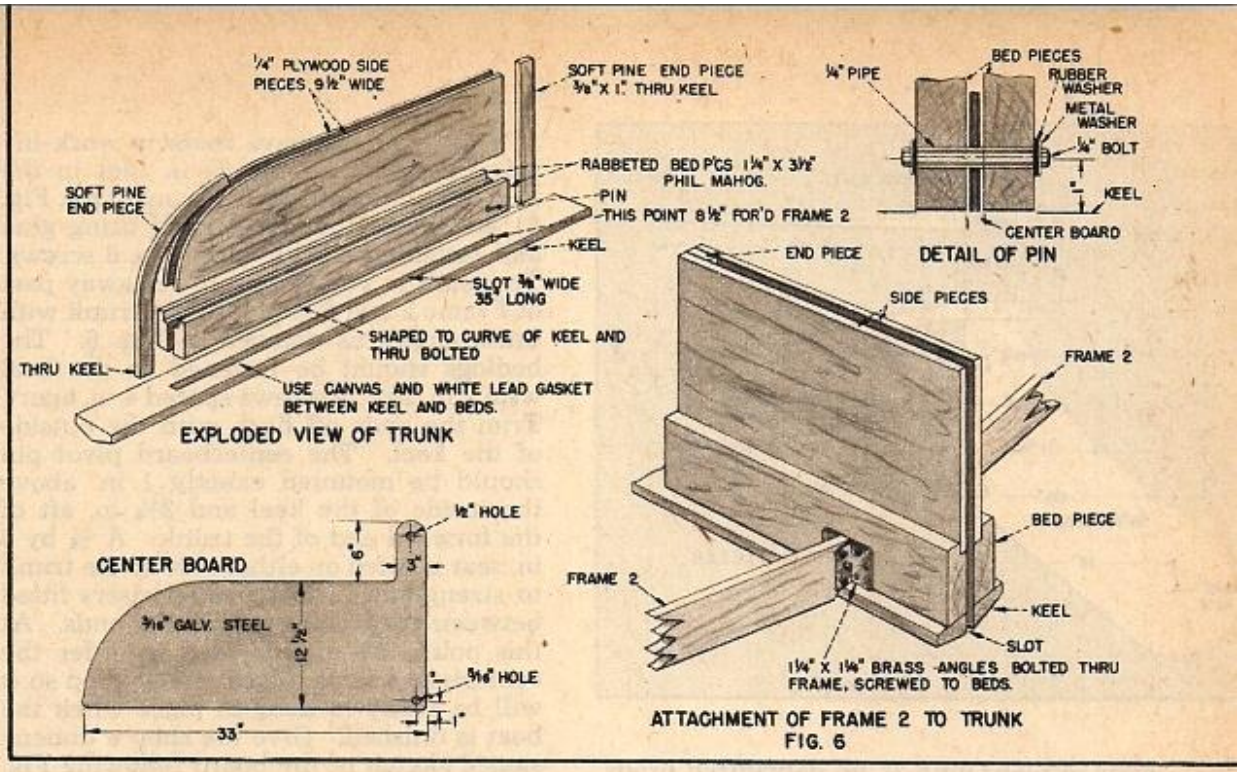
TRUE SHAPE OF TRANSOM

FIG. 10

where it joins the keel. The transom is next, and after you've cut it to shape, glue and fasten the cheek pieces in place using 1 in. No. 8 F. H. Screws on 3 in. centers. Here again, cut notches for the keel, chine and sheer stringers but only in the cheek pieces, not in the transom itself. The keel is then cut to the size and shape shown in Fig. 2. When it is finished, notch it to the stem and fasten the two pieces together, using glue and three ¼ in. by 2½ in. galvanized bolts at the joint.

You're now ready to erect the building form shown in Fig. 3. The first step in doing this, is to snap chalklines representing the baseline and the stations, spaced according to Fig. 2, on a wooden floor. Two foundation pieces, 2 by 4 in. and each about 10 ft. long, are then spaced 1 in. on either side of the centerline (2 in. total space) and toe-nailed to the floor. The frames are erected at the proper stations by nailing the ends to short strips, with a 2 by 2 in. center upright bracing each frame as shown in Fig. 3. Note that Frames 1 and 2 are set up with the aft face of the frame *on* the station line while Frame 3 has the forward face *behind* the station line. This makes it easier to bevel the frames later on. In fastening the uprights to the frame, batten and foundation pieces, use screws so they can be removed later without damaging the frames. The transom is erected at the proper station using a 2 by 2 in. upright slanted to give the angle indicated in Fig. 2 and fastened to the rear face of the transom as shown in Fig. 3.

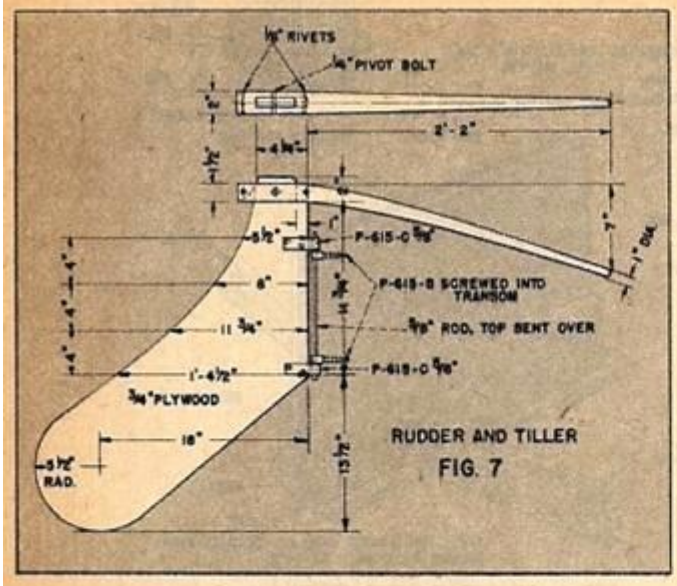
When everything is perfectly square



and rigid, bevel the keel to fit the transom and clamp it and the stem temporarily in place, using C clamps. You may have to recut the notches slightly in the frames so the keel lies perfectly flat. When it does, fasten the stem to the forward ends of the foundation pieces with screws and using ½ in. fillers to make up for the 2 in. spacing. Next, glue and fasten the keel to the frames, using two ¼ in. galvanized iron bolts at each joint and 2 in. No. 8 F. H. screw to fasten the keel to the cheek piece of the transom. A knee made up of two layers of ½ in. plywood, glued and screwed together, is then screwed to the transom and bolted to the keel. The next step is to bevel the frames, springing a long batten or strip around them to get the correct angle at each. In the same manner bevel the keel so that it matches the angle of the frames.

The sheer stringers go in place next and you may have to recut the notches in the frames slightly so they lie flat. The upper edge of the stringers is ¼ in. less than the actual sheer height because the deck overlaps at this point and makes up the difference. Bevel the stringers so they fit against the stem faces and working aft, glue and fasten them to the stem, frames and transom cheek pieces, using one 1½ in. No. 10 F. H. screw at each joint. At the stern, screw little quarter knees (made from two layers of ½ in. plywood) to the stringers and transom as shown in Fig. 3. At the bow, fit and screw fasten a 1 in. knee or breasthook in place (Fig. 2). The chine stringers are then fastened in place in the same way except that at Frame 1, you may have to bevel the notch to get the correct shape. You'll also have to bevel the chine stringer between this frame and the stem to get a good surface for fastening the planking. Then bevel the stringers along the lower edge for their entire length so they'll lie flush with the angles of the frames. In the same manner, the forward face of the stem, the bottom edge of the transom and any other parts of the framing that need it are beveled so that the planking will lie perfectly smooth and flat.

The next operation is the side and bottom planking, and by following a few simple points you won't have any difficulty. First, make paper patterns of the area to be planked. Second, begin on the bottom up near the stem and work aft. Third, back up all butts in the planking with ¼ in. plywood block, 8 to 10 in. wide and the full width of the planking. (Glue and screw fasten these in place from the inside using ⅜ in. No. 7 screws.) When all the sheets are cut to shape, coat the framing liberally with marine glue and start fastening the plywood down, using ½ in. No. 6 screws on 3 in. centers. Don't try to countersink the heads, but fill the slots with yacht trowel cement and sand them smooth when it's dry. After the glue has set, trim the edges of the planking at the sheer, chine, keel, transom and stem. The seam at the chine needn't be tight because you'll have to cut a rabbet, with a razor-sharp rabbet plane, for the ¼ by ¾ in. oak filler strip, shown in Fig. 5. This protects the edges of the side and bottom planking. Glue and fasten this



RUDDER AND TILLER
FIG. 7

filler in place with ½ in. galvanized brads. The false stem band (see Fig. 4) should also be glued and fastened with ¾ in. No. 7 screws.

From this point on, it will be easier to finish the boat in a normal position, so remove the uprights and loosen the stem from the building form, and roll the boat over. Then block her up on a few low horses so you can work in comfort. Next, cut off the excess parts of the frames and stem above the sheer stringer, but leave the cross battens in place until the deck and floor beams are installed. This is your next chore. The deck beams are sawn to a crown of ½ in. for each foot of beam and their location is shown in Fig. 2. Fasten them to the sheer and cockpit stringers with glue and one 1¾ in. No. 12 screw at each joint.

A floor beam should be installed at each frame as shown in Fig. 5. (Use 1½ in. No. 10 screws into the frames.) Next, fit the 1 in. oak mast partner between the deck beams as shown in Fig. 2 and glue and screw fasten it in place, using 1¾ in. No. 12 screws through the beams. In the same way, fit and fasten in place, oak filler blocks at the center of the deck, from the partner to the stem and from the beam aft of frame 3 to the transom. These support the seams in the decking. You'll also need oak blocks under the chain plates, jib sheet fairleaders, halliard cleats, fastenings for the mainsheet yoke and the other deck fittings. You can get the location of most of these from the lead drawing of this article and the description of the deck fittings given later. It's also a good idea to screw the 1 by 2 by 5 in. oak mast step to the inside of the keel (the location is shown in Fig. 2), using 2 in. No. 14 screws.

While you still have room to work inside the boat, cut the ⅜ in. slot in the keel for the centerboard trunk (see Fig. 6) and make the trunk itself using glue and fastening it with ½ in. No. 6 screws. To install it, you'll have to cut away part of Frame 2 and fasten it to the trunk with brass angles as detailed in Fig. 6. The bedlogs should be fastened to the keel with 2 in. No. 14 screws spaced 4 in. apart. Trim the ends off flush with the outside of the keel. The centerboard pivot pin should be mounted exactly 1 in. above the inside of the keel and 2¼ in. aft of the forward end of the trunk. A ¾ by 6 in. seat is fitted on either side of the trunk to strengthen it, using small risers fitted between the frames to hold the ends. At this point, it's a good idea to order the centerboard from a local metal shop so it will be ready to hang in place when the boat is finished. Give the shop a dimensioned sketch of the board following Fig. 6, and ask them to grind off all edges and drill the necessary holes.

Before getting on with the decking job, give the inside of the boat a coat of wood preservative such as Cuprinol, followed by a coat of paint, and fasten the flooring in place, using 1 in. No. 8 screws. The deck can then be laid in place, first making certain that all the framing, including the transom and oak filler blocks, is beveled correctly so the plywood will lie flat. Use the same method and size fastenings previously outlined for the side and bottom planking and make a seam down the centerline of the deck. When the glue has set, trim the plywood at the cockpit and sheer, then lay the deck canvas in a special glue made for this purpose, carrying it over the sides and tacking it in place with copper tacks. The sheer molding can then be glued and fastened with 1¼ in. No. 9 screws (4 in. apart), to cover the edge of the canvas. Next, cut the opening for the cockpit, tack the canvas to the sides and cover the edge with the ¼ by 2 in. mahogany cockpit coaming, using ½ in. No. 6 screws. You can now fill all seams and give the hull a thorough sanding. Prior to painting apply a coat of primer first, and then use several coats of good marine enamel. Give the deck two coats of *thin* paint. The mahogany cockpit trim, sheer molding and transom should be varnished.

While the paint is drying, make the rudder and tiller, following the details in Fig. 7 and when they're finished, give them several coats of clear varnish. Put them aside to dry and get started on fastening the deck hardware in place. At the bow, screw down a small stemhead

Right: Skippy after the launching with sails set ready to get under way. Note modern hull lines.

plate (Willis R-998) to take the jibstay and anchor line. About 6 in. on either side of the mast opening, install small deck cleats (Willis R-868), one for the jib halliard and the other for the main halliard. The chain plates go in next (see Fig. 8 for locations). At the deck on either side of the cockpit coaming, fasten a fairleader (Willis R-1127) for the jib sheet which is belayed to a small cleat (Willis R-998) installed on the inside of the cockpit coaming. Directly over the last deckbeam at the stern, install two bronze screw eyes or deck straps (Willis R-1035) to which the main sheet yoke is fastened. This yoke is made of two 16 in. pieces of stainless rigging wire, spliced at the ends and center. The last fittings to go in place are the rudder gudgeons which are through bolted to the transom.

The sails for Skippy should be made by a professional sailmaker, preferably of the lightest grade of duck, following the dimensions and details in Fig. 9, and with jib slides (Willis R-1394) and main slides (Willis R-1040). After you've placed your order for the canvas, you can get to work on the mast and boom. You'll find all the details and dimensions for these along with most of the hardware required, and the catalog numbers, in Fig. 8. The mast is hollow just like those on larger boats, with the after side, carrying the sail, perfectly straight. If you like, you can make it jointed so that it can be taken apart and stowed inside the boat for trailer carrying. By using modern marine glue and plenty of clamps, there's no necessity for using any fastenings. Filler blocks are used to make up the solid areas indicated. When both the mast and boom are finished, sand them down and apply several coats of varnish. After it's dry, add the fittings and rig the stays, following Fig. 9 for the details. In addition to the fittings shown, screw a jib halliard block (Willis R-1021) to the mast directly above the jibstay and screw a fairleader (Willis R-1020) on either side of the mast at the gooseneck. Make sure that all rigging, both standing and running (halliards, outhaul, etc.) is completed before the mast is stepped in the boat. The centerboard can now be painted and hung in place. To raise and lower it, attach a hoisting strap (Willis R-1141) to the leg on top and reeve a line through a block (Willis R-1120) fastened to the mast, and then down to a cleat (Willis R-868) screwed to the centerboard trunk. •

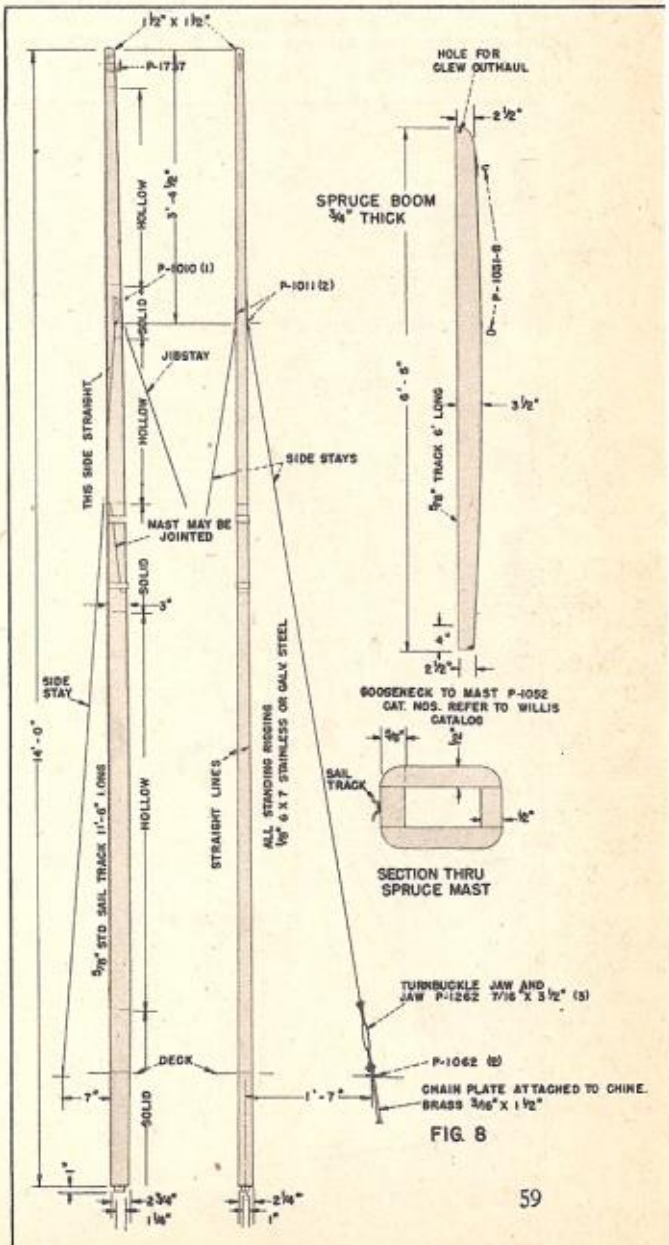


FIG. 8

BILL OF MATERIALS
(Approximate Quantities Required)

Waterproof Marine Plywood

Bottom and Side Planking ..... 2 Pcs. ¼" x 4' x 12'
(or 2½ Pcs. ¼" x 4' x 8')
Decks ..... 1 Pc. ¼" x 4' x 12'
(Plus some scrap from bottom)
Centerboard Trunk Sides ..... Made from ¼" scrap
Stem, Transom, Knees, etc. ..... 1 Pc. ½" x 4' x 8'
Frames and Rudder ..... 1 Pc. ¾" x 4' x 8'

Seasoned White Oak

Keel ..... 1 Pc. 1" x 4" x 8'
Sheer and Chine Stringers ..... 4 Pcs. ¾" x 1½" x 11'
Transom Cheek Pieces ..... 1 Pc. ½" x 2" x 5'
False Stem Band ..... 1 Pc. ¼" x ¾" x 3'
Mast Partner ..... 1 Pc. 1" x 10" x 12"
Filler Blocks Under Deck Seam and Fittings ..... 1 Pc. 1" x 4" x 11'
Mast Step, Wedges, etc. ..... Made from 1" scrap
Tiller (Steam Bent and Shaped) ..... 1 Pc. 1½" x 2" x 3'

Spruce

Deck Beams (Sawn to crown) ..... 24 Lineal Ft. ¾" x 6"
Deck or Cockpit Partners ..... 8½ Lineal Ft. ¾" x 1¾"
Mast Sides ..... 2 Pcs. ½" x 3" x 14'
Mast Front ..... 1 Pc. ½" x 1¼" x 14'
Mast Back ..... 1 Pc. ¾" x 1¼" x 14'
Floor Beams ..... 12 Lineal Ft. ¾" x 1"
Boom ..... 1 Pc. ¾" x 3½" x 6½'
Flooring (Fir) ..... 30 Lineal Ft. ½" x 5"
(Use scrap for seat)

Mahogany

Centerboard Trunk Bedlogs ..... 1 Pc. 1¼" x 3½" x 6'
Cockpit Coaming ..... 12 Lineal Ft. ¼" x 2"
Cockpit Trim ..... 14 Lineal Ft. ¼" x 1½"
Sheer Molding ..... 22 Lineal Ft. ¾" Half Rd.

Soft White Pine

Centerboard Trunk End Pieces ..... 1 Pc. ⅜" x 4" x 1½'
1 Pc. ⅜" x 1" x 1½'

Common Lumber
(For Building Form)

2 Pcs. 2" x 4" x 10'; 12 Lineal Ft. 2" x 2"; 12 Lineal Ft. ¾" x 2"

Hardware

Note: The catalog numbers for the fittings shown on the plans and mentioned in the text refer to the catalog of the E. J. Willis Co. at 91 Chambers St., New York, N. Y. However, similar fittings of other marine hardware manufacturers may be substituted. Fittings of a different design than those specified may also be substituted as long as they will serve the purpose.

Miscellaneous

Deck Canvas—8 Ounce Weight ..... 1 Pc. 50" wide x 9½'
Paint, Varnish, Enamel, Plywood Primer; Yacht Trowel Cement, Waterproof Marine Glue and Filler; Fastenings—Galvanized Bolts—F. H. Brass Screws—Tacks—All As Specified; Brass Angles for CB Trunk; Brass Rod for Rudder; Hdwe. for CB Pin; Galv. Iron Brads, etc.

DIMENSIONS OF SAILS

FIG. 9