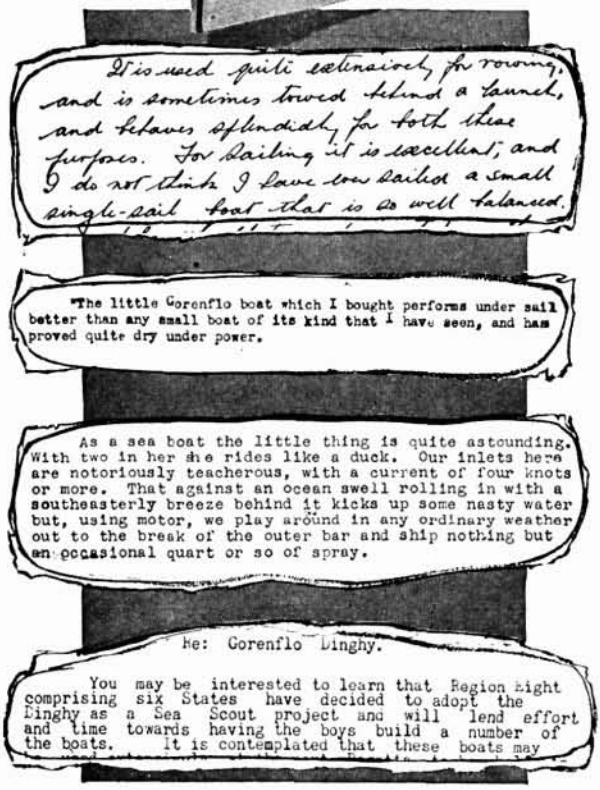
Building the BILOXI



It is used quite extensively for rowing, and is sometimes towed behind a launch, and behaves splendidly for both these purposes. For sailing it is excellent, and I do not think I have ever sailed a small single-sail boat that is so well balanced.

"The little Gorenflo boat which I bought performs under sail better than any small boat of its kind that I have seen, and has proved quite dry under power.

As a sea boat the little thing is quite astounding. With two in her she rides like a duck. Our inlets here are notoriously teacherous, with a current of four knots or more. That against an ocean swell rolling in with a southeasterly breeze behind it kicks up some nasty water but, using motor, we play around in any ordinary weather out to the break of the outer bar and ship nothing but an occasional quart or so of spray.

Re: Gorenflo Dinghy.

You may be interested to learn that Region Eight comprising six States have decided to adopt the Dinghy as a Sea Scout project and will lend effort and time towards having the boys build a number of the boats. It is contemplated that these boats may

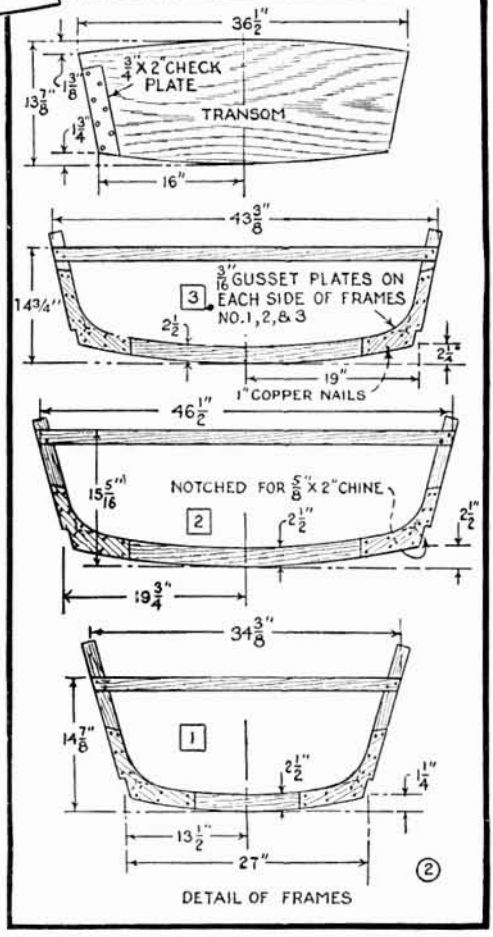
HERE'S just what prospective builders of small sailboats have been looking for, as you will see from a glance at the facsimiles on the left, which reproduce excerpts from letters written by enthusiastic owners. And, the Biloxi Dinghy is not only seaworthy, as they say, but it's easy to build. Look over Figs. 1 and 2, which detail the frames and stern board, or transom. There are several points to keep in mind before you begin cutting the parts: The lower cross members of all frames are cut to the same radius; the top cross-pieces are a given distance above the lowest point of the curved member, and the frame uprights are joined to the curved members with an angle joint housed in gusset plates, as in Fig. 2. With the frames, stern board and building board made, the work on the hull is well along.

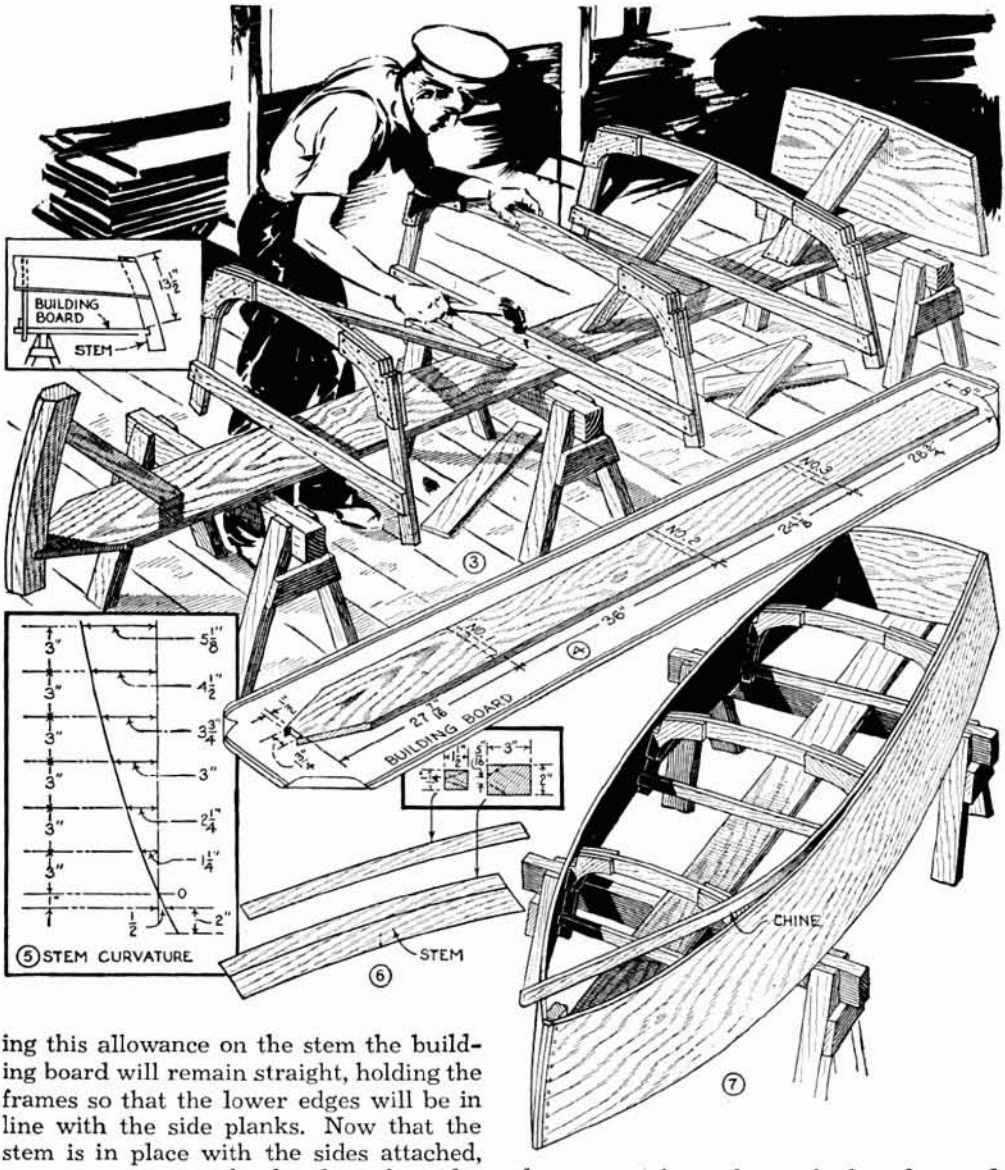
You start assembling the boat by placing the building board on two sawhorses as in Fig. 3. The lines marked on the building

DINGHY

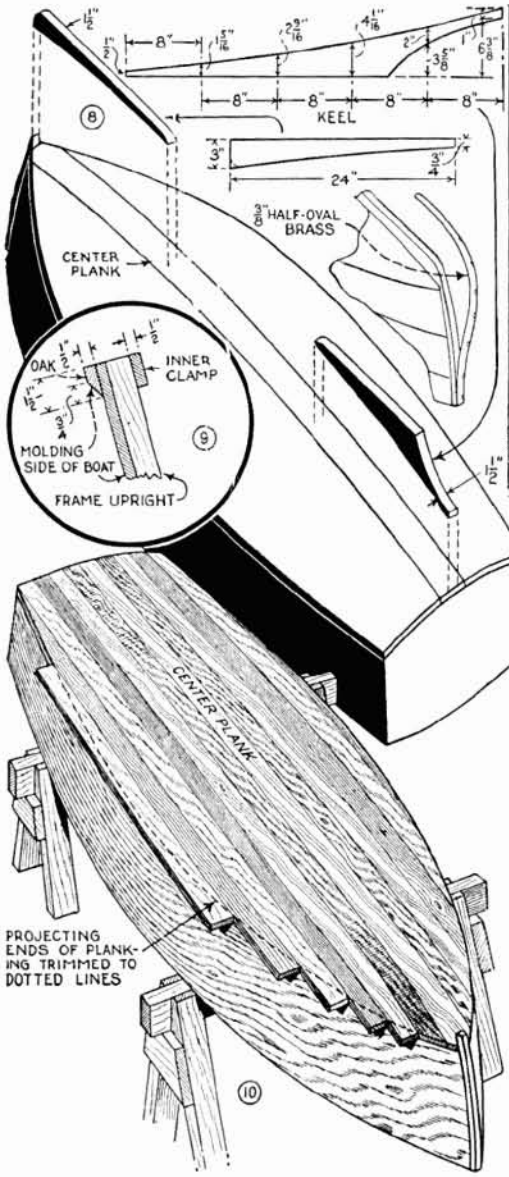
by L. J. Gorenflo

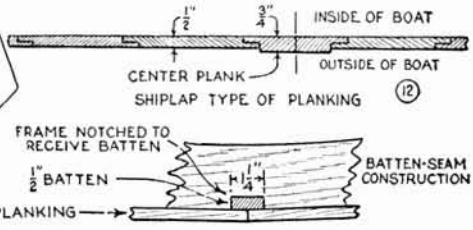
board, Fig. 4, indicate where to place the frames. These are placed upside down and the center line of the building board must match up with that on the frames. Place frames Nos. 1, 2 and 3 along the lines and fasten through the building board with 8-d common nails or 1½-in. screws, also a brace to each frame. After all three frames have been attached to the board, the next step is to fasten the sides to the stem, Fig. 6. This can be done before mounting the stem on the building board although it is shown mounted wtih the frames in Fig. 3. If the sides are built up of several pieces, you simply screw the two lower planks to the stem, but should the sides be made up of narrow planks, the first plank on the lower side should be at least 8 in. wide. When building up the sides you can use shiplap construction which will eliminate battens. The stem is fastened to the sides at the zero (0) line, Fig. 5. Use 1½-in. No. 8 flat-head brass screws spaced about 1½ in. apart, in a staggered row. In Fig. 3 is a detail showing the exact distance from the lower edge of the boat to the building board. By mak-





ing this allowance on the stem the building board will remain straight, holding the frames so that the lower edges will be in line with the side planks. Now that the stem is in place with the sides attached, you may continue by bending the sides around the frames and holding them in place with a piece of rope. Fasten the sides to the frames with 1½-in. No. 8 flat-head brass screws. The transom is also fastened with 1½-in. flat-head brass screws driven into the check plate and 2-in. screws driven into the end grain of the transom. Fig. 16 shows the offsets and also the exact positions of frames Nos. 1, 2 and 3. Be sure to mark these positions on the sides before bending the latter in position around the frames. The lines are drawn at right angles to the base line and serve as a guide to placement of the frames in an upright position. Move the temporary braces if necessary to bring the frames into the proper position. Now the second and third planks are placed on each side. The shiplap joints are fastened with ⅞-in. copper tacks spaced 2½ in. apart and clinched across the grain. Use marine glue to make the joint waterproof. When the sides are fastened, the next step is to insert the chines as in Fig. 7. Chines are fastened to the frames with 2½-in. No. 8

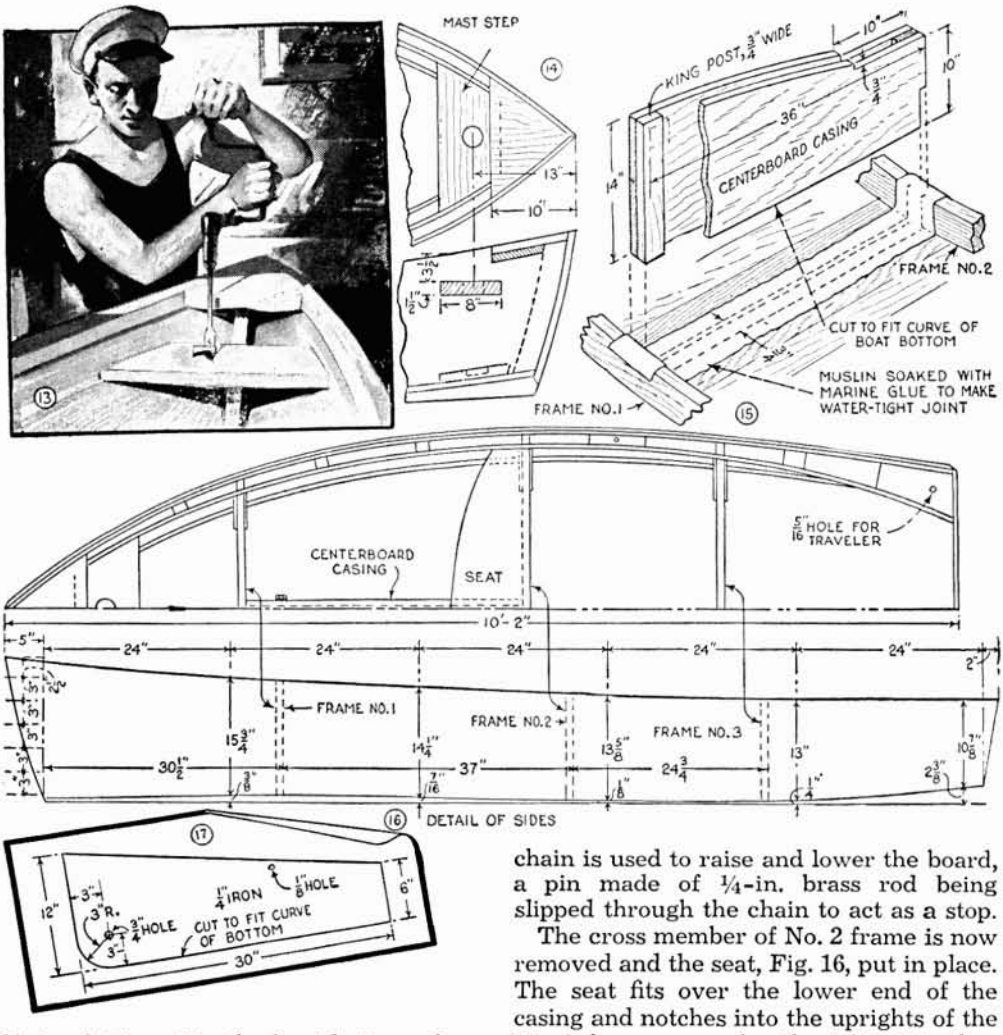




flat-head brass screws and to the sides with 1¼-in. No. 6 flat-head brass screws spaced 1½ in. apart in a staggered row. Then fair off the sides, transom and stem, a job which must be done carefully to avoid leaks. At this point, select the type of bottom construction. If it is to be the batten-seam type, battens must be mortised at the proper places and the planks are fastened to the battens with 1¼-in. copper nails spaced 2 in. apart and clinched.

If you use the shiplap type, Fig. 12, rabbet the edges of the planks and fasten them together with ⅞-in. copper tacks spaced 2 in. apart and clinched. In either case, bore holes for the tacks, as otherwise the wood is likely to split. Use one ¾ by 6-in. plank as the center plank, Fig. 10. If you can get them, four ½ by 8-in. planks will then finish the job. The planks are fastened to the frames with 1¼-in. No. 6 flat-head brass screws, except the center plank, where 1½-in. No. 8 flat-head screws are used. Screws in the chines and along the outer edges of the boat are spaced 1½ in. apart in a staggered row. Use 1¼-in. No. 6 flat-head brass screws along this line, as well as into the lower edges of the transom.

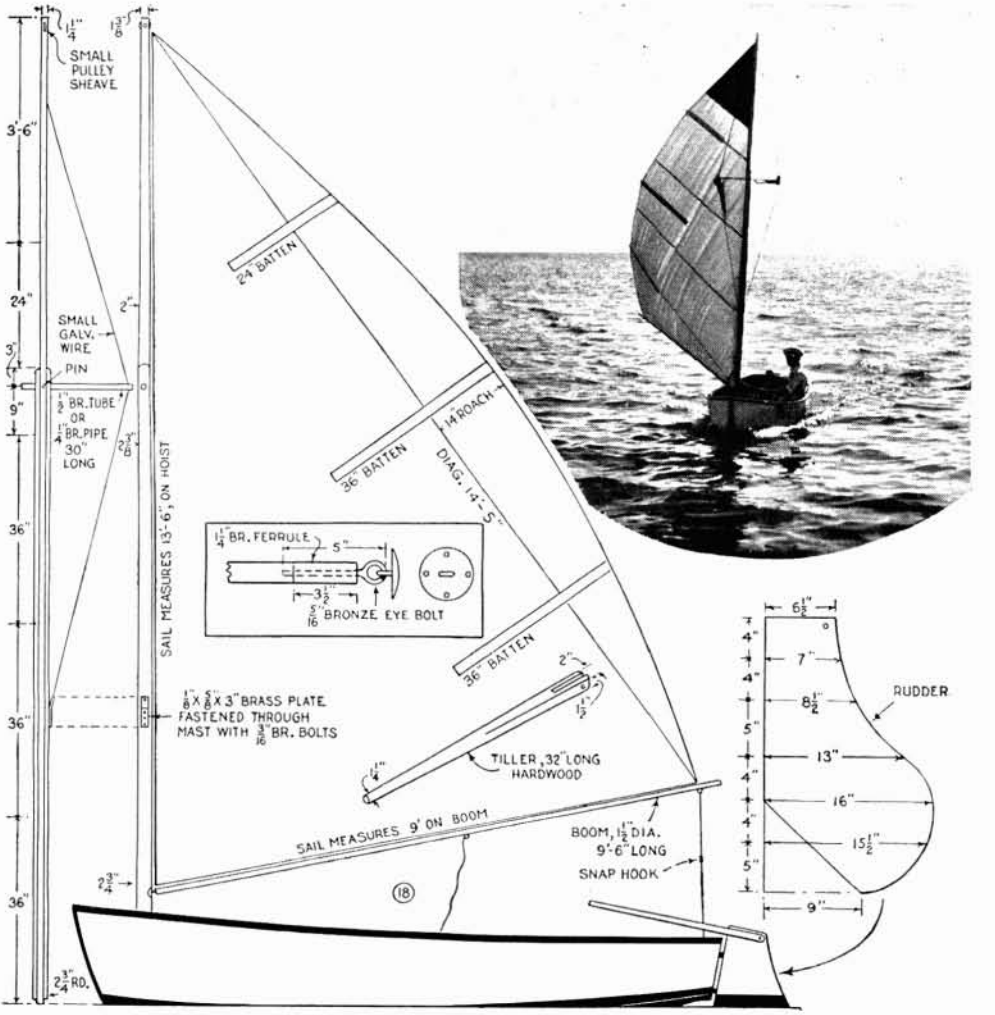
This done, the boat is turned over and the centerboard installed. Make up the centerboard well or casing as in Fig. 15. The oak king posts are fastened to the casing with 1½-in. No. 8 flat-head brass screws, spaced 1½ in. apart. The case should fit snugly against the bottom of the boat, and should be notched out at the after end to fit over the No. 2 frame. A



3/4-in. slot is cut in the boat bottom along the centerline as in Fig. 11, the slot being the same length as the opening in the casing. The slot is covered with a gasket made of heavy muslin and coated with marine glue to insure a water-tight joint. The casing is fastened to the bottom with 2-in. screws placed 2½ in. apart. The iron centerboard, Fig. 17, has a 3/4-in. hole drilled 3 in. up from the bottom edge and 3 in. in from the side as shown. A hole is bored in the centercase with an 11/16-in. bit and the pin used to pivot the board is a 3/8-in. pipe nipple, 3 in. long, with a lock nut on each end. By placing a small gasket or piece of cotton behind the lock nut and tightening it, there will be no chance for a leak at this point. A piece of jack chain is used to raise and lower the board, a pin made of 1/4-in. brass rod being slipped through the chain to act as a stop.

The cross member of No. 2 frame is now removed and the seat, Fig. 16, put in place. The seat fits over the lower end of the casing and notches into the uprights of the No. 2 frame on each side. This joint beneath the seat must be water-tight as it is near the level of the water on the outside. A cap of 3/8-in. material, 3 in. wide, is bent over the curved portion of the casing.

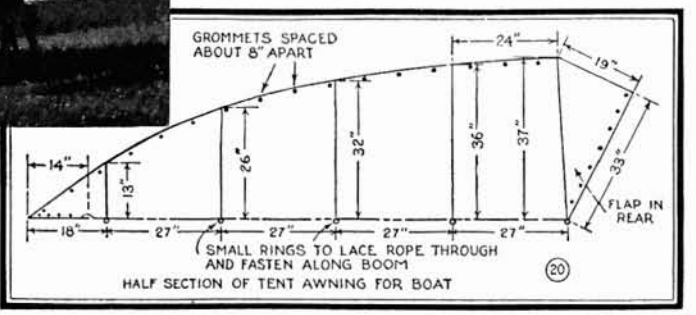
The breast hook, Fig. 14, is made of two pieces of wood with the grain running at right angles. The mast partner, cut from 1½-in. material, is fastened through the sides with 2-in. screws. Now screw the stern knees in place and put the inner clamps in position, Fig. 16. The knees are fastened with 2-in. No. 8 flat-head brass screws and the inner clamps with 1½-in. No. 8 screws. Between the sides and the clamps, the filler blocks, Fig. 16, must be placed. These are made of 1½-in. material, 2 in. long with the exception of those



between No. 2 and No. 3 frames, which are 6 in. long and drilled for the oarlock sockets. The boat is now turned over and the keel and skeg put in place as in Fig. 8. When these pieces are made to fit they are fastened from the inside with 1½-in. and 2-in. screws. Before fastening the skeg (forward), the cutwater is shaped up to fit in its proper position. When the cutwater fits perfectly, you calk the ends of the sides and fasten the cutwater in place permanently, which is done with 10-d galvanized finishing nails spaced 3 in. apart. The cutwater is trimmed with ⅜-in. half-oval brass, which extends from the top edge of the boat to about halfway down the skeg. Finally, the molding, Fig. 9, is fastened in place with 1-in. No. 6 screws spaced 10 in. apart. Use 1½-in. screws through molding at both stem and stern. Bore two ¼-in. holes in the stern knees and put in ¼-in. cotton rope for the traveler. Finally, the rudder is made up as in Fig. 18, and attached with rudder irons to the stern. The lower edges of the rudder are slightly tapered to prevent dragging.

The mast, Fig. 18, is quite simple to make by using one 1¼ by 3 in. by 16-ft. piece of cypress and two pieces of ¾ by 3 in. by 10 ft. Casein glue is used to assemble these parts. With a table saw set at a 45° angle you can rip off the corners up to the 10-ft. mark. This will give you an eight-sided section that can be rounded easily

the skeg. Two upright deck blocks are placed one on each side of the mast on the mast partner. One of these pulleys is used to hoist the sail and the other takes care of the top'n lift. Cleats are attached to the sides of the centercase. A tent cover, Figs. 19 and 20, is quite simple to make and is a protection to the boat and occupants when making short cruises. The edges are held down by a series of screw eyes spaced 8 in. apart just beneath the molding.



by hand with a small plane. The portion above the 10-ft. mark can be left as it is. At a point 3 in. below the 10-ft. mark a ½-in. hole is bored through the mast to take the spreader, which is a ½-in. brass tube, 30 in. long. A small brass pin through the tube and mast holds the spreader in place. Small holes are drilled in the ends of the tube for the galvanized rigging wire which can be of single strand. It is fastened to the mast 5 ft. above the spreader and 5 ft. below. A ⅝-in. mast track starting 10 in. below the top sheave extends 12 ft. down the mast. Details of the gooseneck are shown in Fig. 18. The boom is tapered to 1¼ in. and a ferrule is slipped over the end, extending 3½ in. back.

When the mast is made up and all the fittings are in place, you install it in the boat. Bore a hole through the mast partner, Fig. 13, and allow the mast to go through until it reaches the step, which is made of 1½-in. material placed in the bow as far up as possible. Do not nail or fasten it in position until you have set the mast plumb. Scribe a line around the squared end of the mast and another outlining the location of the step on the bottom. Then cut a rectangular socket in the step into which the foot of the mast fits snugly. Fasten the step with 1½-in. and 2-in. screws through the bottom and into

MATERIAL LIST

2 pcs. ½ x 18 in. x 12 ft. (or equivalent in narrow widths)	side pieces
1 pc. ⅝ x 6 in. x 10 ft.	chines
1 pc. ¾ x 6 in. x 10 ft.	bottom center plank
4 pcs. ½ x 6 in. x 10 ft.	(2 each side)
2 pcs. ½ x 8 in. x 8 ft.	(1 each side)
6 pcs. ½ x 1¼ in. x 10 ft.	battens
2 pcs. ½ x 1½ in. x 10 ft. 6 in.	inner clamps
1 pc. ¾ x 14 in. x 6 ft.	sides of centercase
1 pc. ¾ x 2 x 26 in.	king posts
1 pc. ¼-in. iron	for centerboard
1 pc. ¾ x 14 x 30 in.	rudder
1 pc. 1¼ x 2½ x 30 in.	tiller
1 pc. ¾ x 14 x 38 in.	transom
1 pc. 1½ x 8 x 20 in.	mast partner
1 pc. ¾ x 10 in. x 4 ft.	seat
1 pc. ¾ x 10 in. x 12 ft.	frames and crosspieces
1 pc. ½ x 3 in. x 12 ft.	oak molding
1 pc. 1½ x 8 in. x 1 ft.	mast step
2 pcs. 1½ x 4 in. x 1 ft.	stern knees
1 pc. 1½ x 8 in. x 4 ft.	skeg and keel
1 pc. 2 x 8 x 24 in.	stem and cutwater
1 pc. pine ¾ x 8 in. x 12 ft.	building board
1 pc. 1¼ x 3 in. x 16 ft.	mast
2 pcs. ¾ x 3 in. x 10 ft.	mast
1 pc. 2 x 2 in. x 10 ft.	boom

Hardware

2 gross 1½-in. No. 8 flat-head brass screws
½ gross 2-in. No. 8 flat-head brass screws
5 gross 1¼-in. No. 6 flat-head brass screws
1½ lbs. of 1¼-in. copper nails (if battens are used)
½ lb. copper tacks, ⅞-in. (if lap joint is used)
1 sheave for top of mast
2 swivel pulleys for sheet line
2 deck blocks for halyard and top'n lift
1 flat deck block for top'n lift
75 ft. ¼-in. cotton rope for lines and rope traveler
½ pint, C-quality marine glue
¼ lb. casein glue
Brass and brass volts for guy-wire attachments
3 ft. ⅜-in. half-oval brass for bow trim
25 ft. galv. wire
⅜-in. brass tubing, 30 in. long
2 ft. jack chain for centerboard lift

Woods generally used for small-boat construction are: Spruce or oak for frame; pine or oak for the stem, and mahogany, cedar or cypress for planking. Knees, mast steps, inwales and other small parts either visible or subject to strain—oak or mahogany.