"BLUE BILL" A 13-Foot Combination Kayak-Canoe

Craft Print Project No. 80



Outdoor folks who need an ultra lightweight portable boat should not find it difficult to make this combination of kayak and canoe.

Uses: Extremely wide adaptation to various uses. May be used as duck boat, canoe, kayak, outboard kayak. Is adapted to sheltered waters. May be paddled or propelled with outboard motors from 1 to 6 hp.
LENGTH: 13 ft. 6 in.
BEAM: 3 ft. 2 in.
DEPTH: 12 in.
WEIGHT Complete: 75 lbs.
SEATING CAPACITY: 3 persons.
CONSTRUCTION: Wood frame canvas covered.
TYPE: Flat bottom, knuckle joints.

COMBINING the features of both kayak and canoe, "Blue Bill" is offered to those out-of-doors men who hunt or the sportsmen who need an ultra lightweight portable boat for use upon any waters. Besides being usable for building a double-end paddling model, a few changes permit the plans to be used for making a canoe that will accommodate outboard motors up to 6 hp. for swift, speedy transportation on any stream or waterway.

Weighing only 75 lbs. complete, "Blue Bill" is easily transported atop an auto anywhere. All details of "Blue Bill" have been simplified for easy fabrication and the construction cost is within reach of everyone's pocketbook.

MATERIAL LIST

Parts	Pieces	Finished Dimensions
Keel	1	3/4" x 1 3/4" x 14'
Chines	2	3/4" x 3/4" x 14'
Sheer and Bilge Battens	8	1/2" x 1" x 14'
Bottom Battens	2	3/4" x 3/4" x 12'
Deck Battens	4	1/2" x 3/4" x 12'
Inside Coaming	2	3/8" x 1 1/2" x 8'
Outside Coaming	2	1/4" x 2" x 8'
Side Deck Support	1	3/4" x 1 1/2" x 8'
Deck Beams	1	3/4" x 12" x 48"
Floor Boards	3	3/8" x 6" x 8'
Frames (Marine plywood)	1	3/4" x 12" x 6'
Stems (Marine plywood)	1	3/4" x 12" x 48"
Raised Canoe Bow Sections	1	1/2" x 4" x 8'
Mouldings	2	1/2" x 3/4" x 14'
Form	1	1 3/4" x 5 3/4"

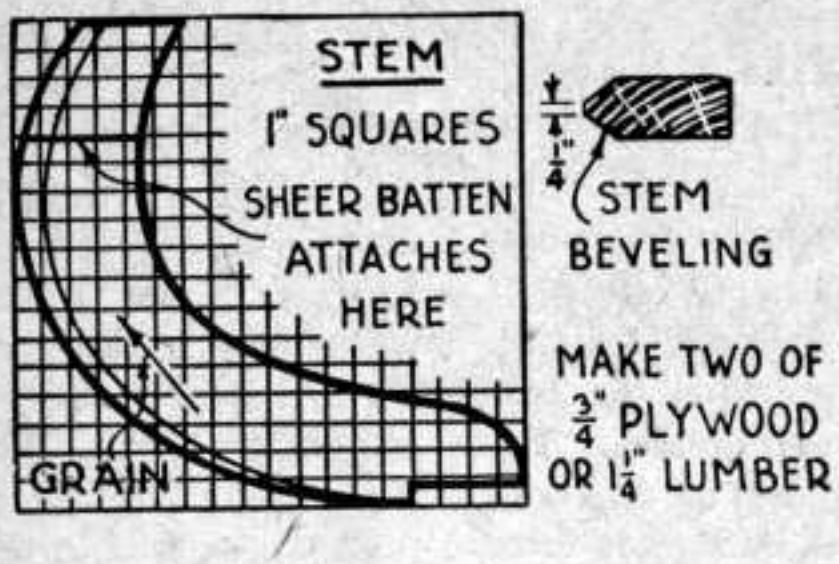
Kinds of Wood: Spruce, fir, cedar, cypress, white pine, redwood, yellow pine. Make form from rough lumber.

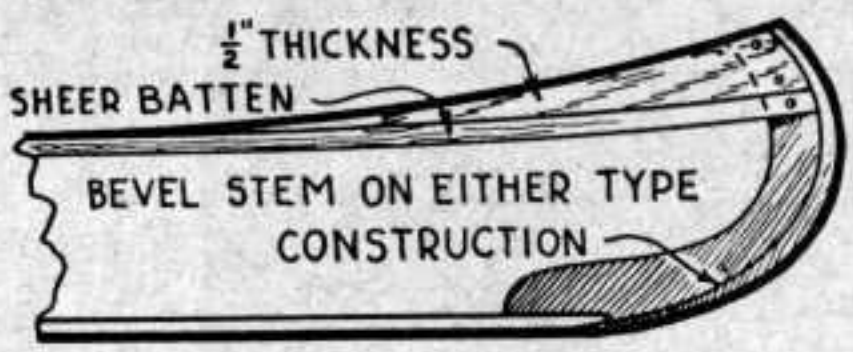
FASTENINGS AND OTHER MATERIALS

1 Gro. 1" No. 8 f.h. screws. Cadmium plated, brass, or galvanized.
1 Gro. 1 1/2" No. 8 f.h. screws. Cadmium plated, brass, or galvanized.
1 Gro. 1 3/4" No. 8 f.h. screws. Cadmium plated, brass, or galvanized.
2 Ozs. 1/4" tacks.
2 Gals. Airplane wing dope.
1 Lb. Casein glue.
1 Qt. Enamel.
15 Yds. 30" canvas, 8 or 10-oz.

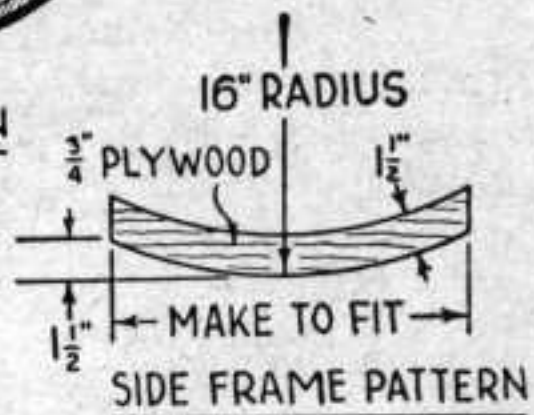
At the outset, either of the two models (paddling or outboard) must be selected. With the type selected, the form is sawed to shape as indicated upon the plans and notched for frames. Mount this form upon legs similar to a sawhorse at a convenient working height. If the outboard model is constructed, let the form extend straight out 6' 8" aft of No. 5 frame position. As all frames are the same for the outboard model aft of No. 5, make four additional No. 5 frames and one transom piece as shown. For the paddling model, make one No. 5 frame and two of every other as all frames forward and aft from amidships are alike. To facilitate construction of frames draw full-size paper patterns of frames from No. 1 to No. 5, lay frame material upon patterns, prick outline through, saw to shape, and laying the frame parts upon the patterns so as to conform to outline, daub joints with glue and fasten with 1 1/2" No. 8 f.h. screws.

With all frames made, assemble on form upside down and proceed to attach keel to center of bottom frame cross members with two 1 3/4" No. 8 f.h. screws to each joint. First drill and

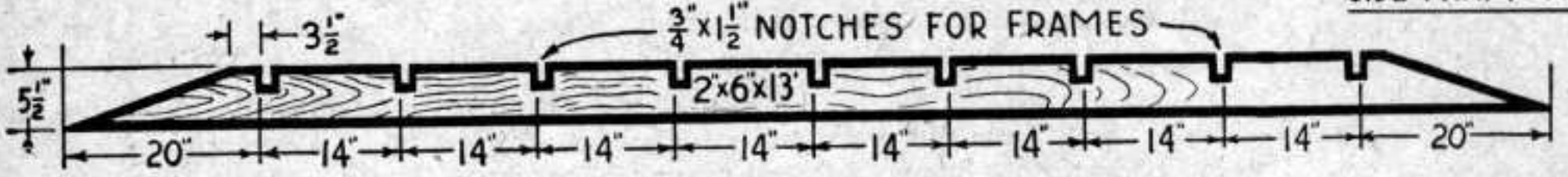




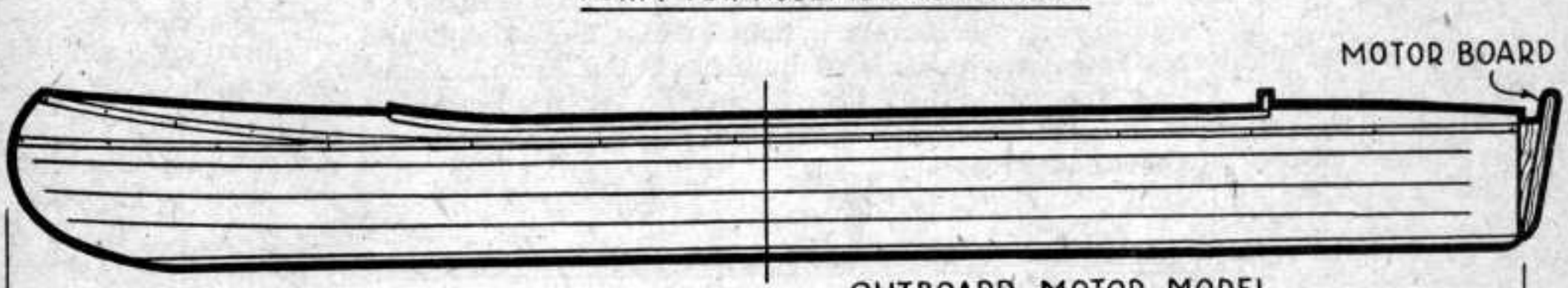
CANOE BOW CONSTRUCTION



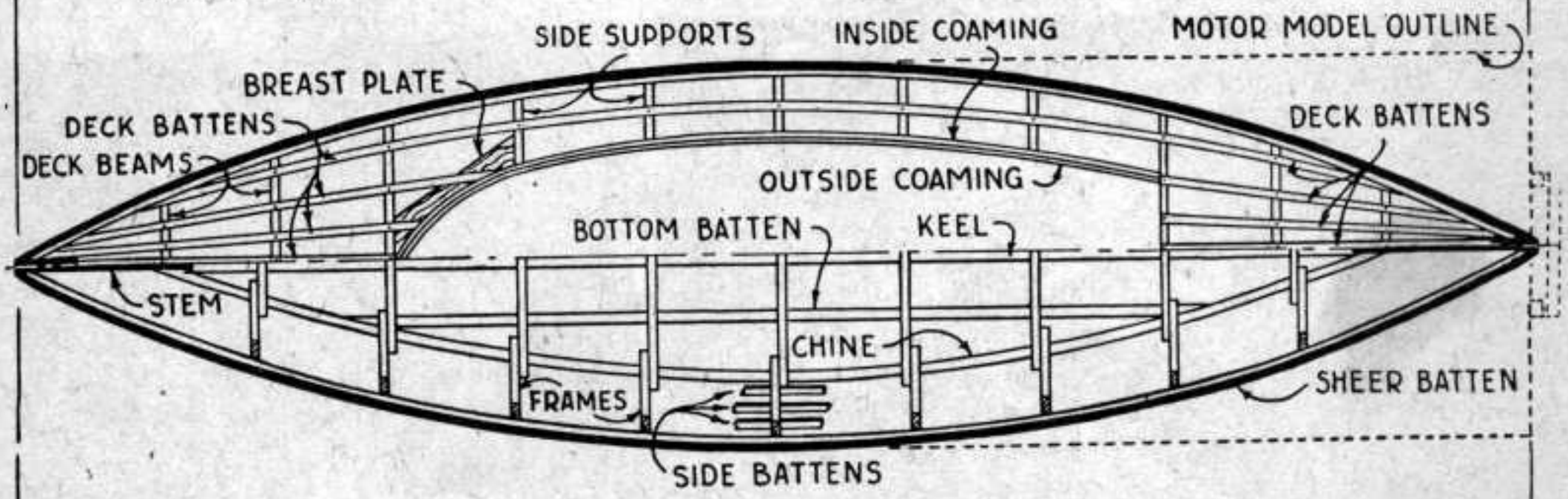
SIDE FRAME PATTERN

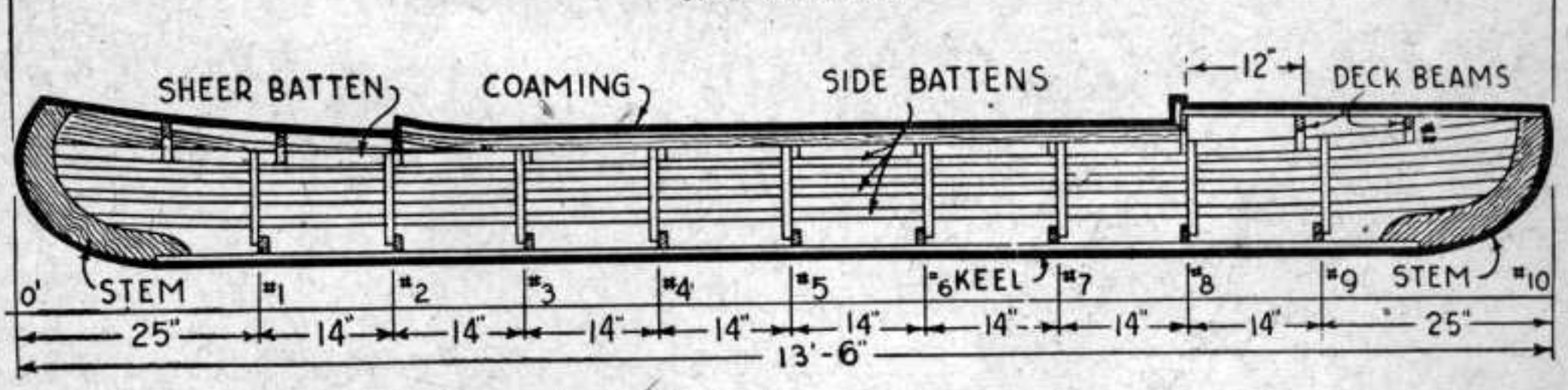


FORM FOR ASSEMBLING FRAMES

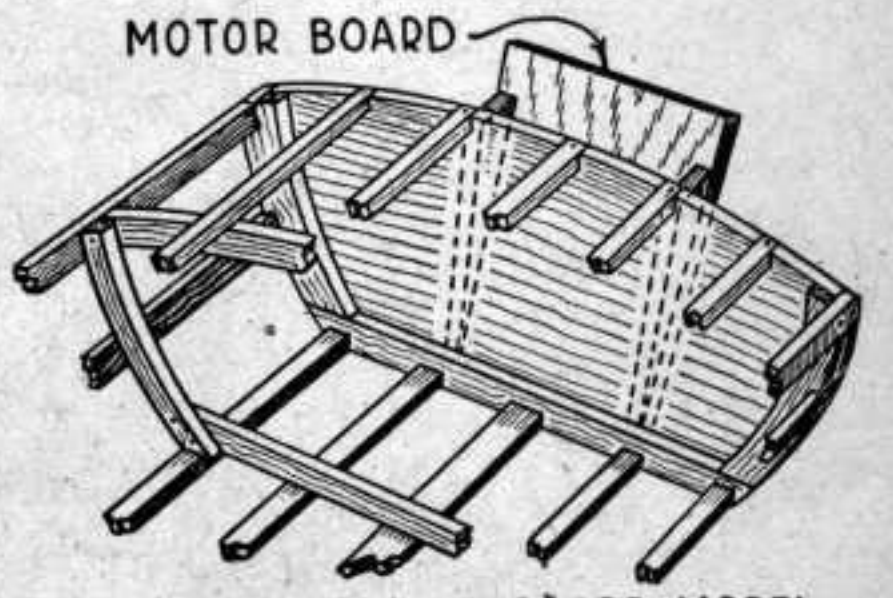


OUTBOARD MOTOR MODEL





countersink for all fastenings. A coating of casein glue wherever possible on joints will strengthen things considerably. The stems are sawed to shape and notched for the keel to which they are attached with two 1½" f.h. screws. The ¾" x ¾" chines are now clamped in place at No. 5 frame, simultaneously bent both forward and aft and screw fastened with one 1¾" No. 8 f.h. screw to each joint. Trim chine ends to fit against stem and keel joint and fasten similarly at both ends of framework. At this point it is necessary to trim all edges of side frames to conform with sweep of side battens to be attached. A light batten laid around frames will



TRANSOM OF OUTBOARD MODEL

indicate the correct bevel.

The ½" x 1" sheer battens are attached to frames with one 1½" No. 8 f.h. screw to each joint. Start amidships and work towards each end aligning and attaching sheer battens as work progresses. The ½" x 1" side battens are next distributed equally between sheer batten and chines and similarly fastened, beveling ends of battens to fit sides of stems about one inch back from outer stem edge. This edge of stem is later beveled off so canvas fits nicely at this point.

With all battens attached, remove framework from form and complete interior construction. Saw the deck beams to shape and right here a selection of either canoe or kayak bow construction should be made. A canoe forward bow and kayak after bow looks well as in the original. Or, the ends may be identical. The raised bow of the canoe type is easily made by adding raised pieces to the sheer battens forward and attaching to

MASTER BOAT BUILDER

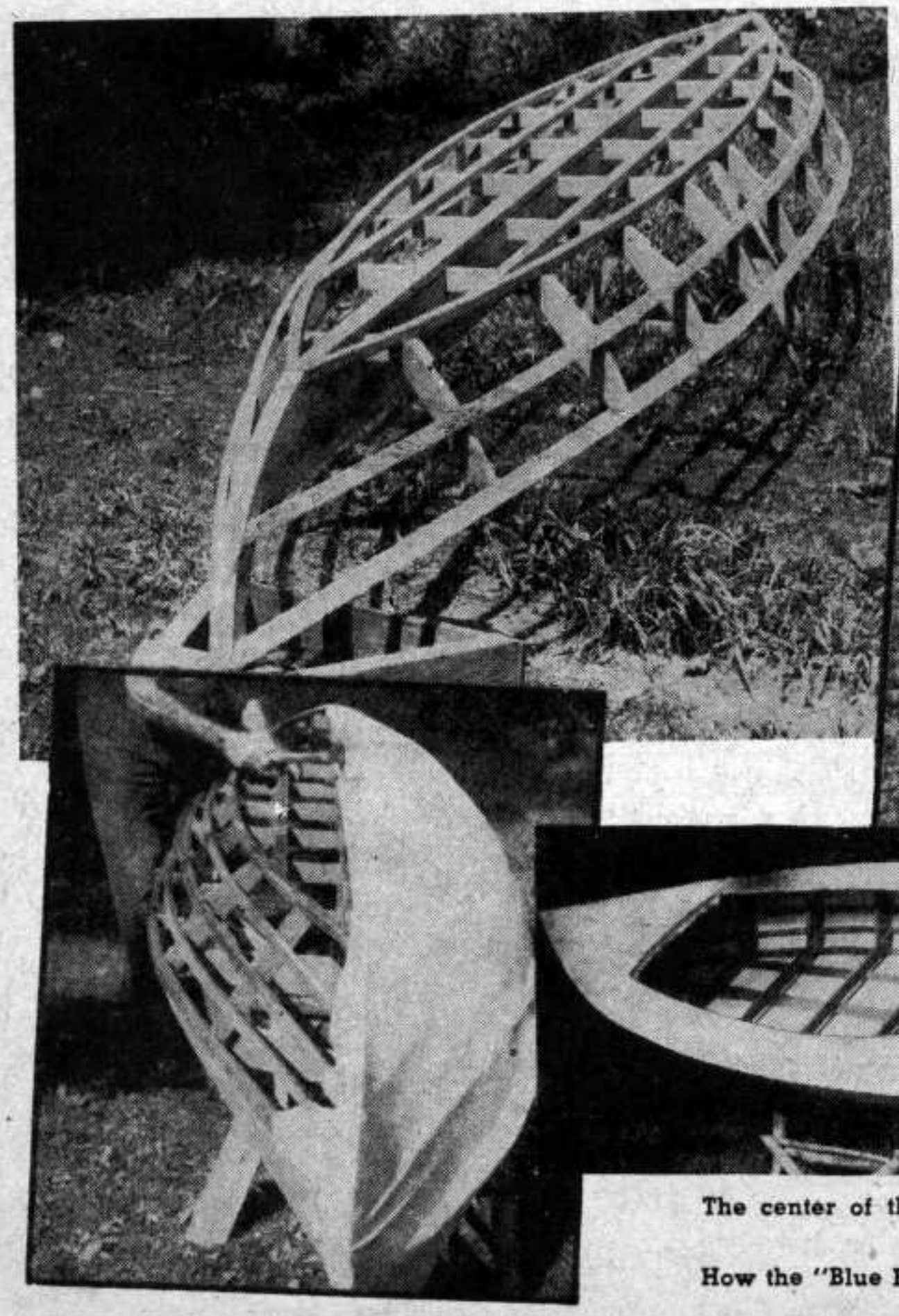


WILLIAM JACKSON

WILLIAM JACKSON, who designed most of the boats described and illustrated in this issue of the Boat Builder's Annual, may justly claim the title master boat builder. For twenty years he has designed and built more than 400 boats which are in use in every part of the world —on the Danube River, Nile River, Black Sea, Indian Ocean, Australia, Greenland, Borneo, and in Africa. Back from the wars, he is hard at work now on more boats at his home and boat plant at Bass Lake, Indiana. His great grandfather was a boat builder in Russia, his grandfather a boat builder in England, and his father a famous boat builder on the Atlantic Coast and Mexico and the Pacific Coast. Mr. Jackson has sailed in many waters, been marooned, shipwrecked, and won speedboat races.

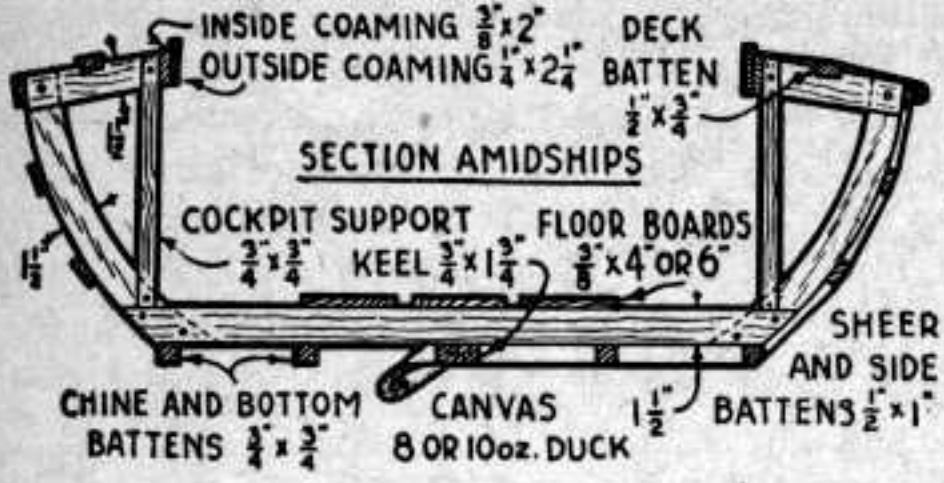
Framework is shown on form with part of side battens attached.

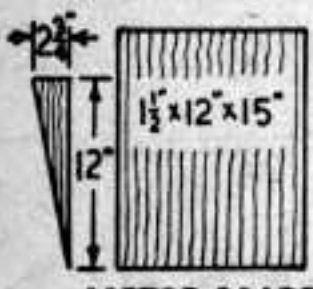
Deck construction of the "Blue Bill" is not difficult.



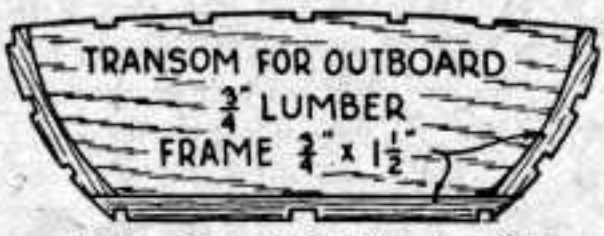
The center of the keel carries the seam when the boat is canvassed, one-half at a time.

How the "Blue Bill" looks when bottom and decks are convassed.

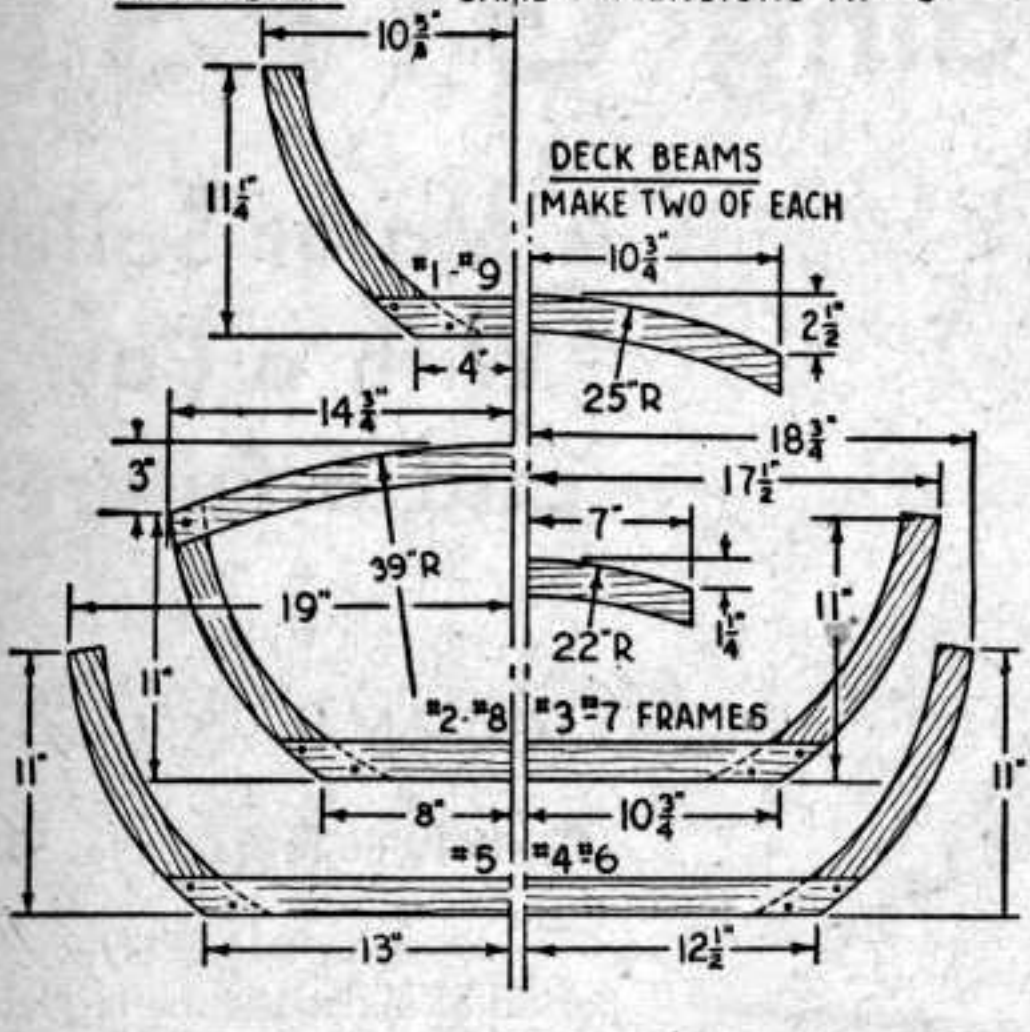




MOTOR BOARD



SAME DIMENSIONS AS #5



stem as shown. Same deck beams are used for either bow construction. Fasten deck beams to sheer battens at points shown and cut to fit side deck supports, fastening all pieces in place with 1½" No. 8 f.h. screws. The deck battens are notched into frame beams No. 2 and No. 8, while the ends towards each bow are simply butted against sheer battens. Bend the inner coaming in place and screw fasten with 1" No. 8 f.h. screws. At this point bevel the stem edges forward to conform to sweep of battens and with all constructional details finished.

Turn hull right side up and begin covering hull by tacking canvas evenly along the keel, stretching cloth towards bow and stern. Continue tacking along keel and commence stretching cloth towards sheer, pulling excess cloth over sheer batten and tacking. The cloth is pulled over the stem, tacked and trimmed. In this way each half of the hull is covered with the canvas meeting along the keel. With bottom and sides finished turn hull over and cover decks similarly. If necessary, piece cloth and later cover the joints with cloth tape.

The edges of canvas along the coaming are covered with the ¼" x 2" outer coaming which is screw fastened with 1" No. 8 f.h. screws. The edges along the sheer batten are concealed and

trimmed with the ½" x ¾" moulding which is also screw fastened in place with 1" No. 8 f.h. screws spaced about eight inches apart. The cloth along the stem edges is best covered with narrow strips of wood or brass bands.

As paint applied to canvas results only in a heavy, lifeless surface, the entire canvas covering must be doped with airplane dope which fills the canvas weave, tautens the cloth, and renders the whole waterproof. Apply three or four applications of the airplane dope to the canvas surface, allowing one-half-hour intervals for drying and sanding lightly. The final finish may be either pigment colors added to the dope or a coat of lacquer. Before applying paints or enamels to the doped surface allow hull to air a few days, then apply a coat of varnish and follow with one or two coats of porch or floor enamel.

The ⅜" x 4" floor boards are screw fastened with 1" No. 8 f.h. screws to the frames. A regular canoe paddle will propel the boat easily.

● Craft Print No. 80 in enlarged size for building the "Blue Bill" is available at 25¢ each. Address Craft Print Dept. B-48, SCIENCE AND MECHANICS, 49 East Superior St., Chicago 11, Ill.

