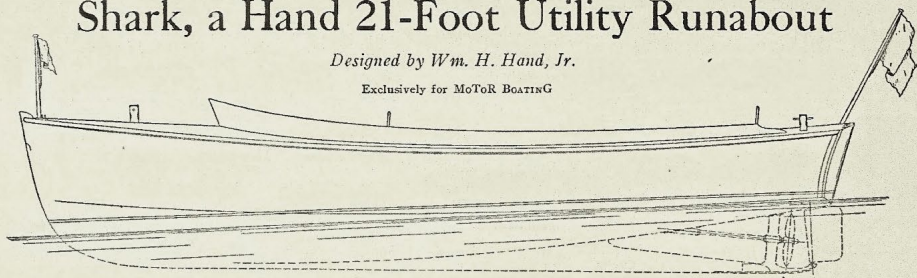


# Shark, a Hand 21-Foot Utility Runabout

Designed by Wm. H. Hand, Jr.

Exclusively for MoToR BOATING



Outboard profile of Shark, a Hand all-purpose runabout

THE last runabout in the series of Hand plans published in MoToR BOATING is presented herewith. Only twenty-one feet long but combining in a small space all of the conveniences and utility of a larger boat. The arrangement is well planned and provides a pair of individual seats forward at the steering position. Additional seats in the after end of the cockpit will accommodate five or six more people and adapt the boat to ferry service and other utilitarian purposes. The motive power is one of the simple little 9 to 12 h.p. Universal motors. It is capable of driving this boat at a sufficiently rapid rate to comply with all reasonable requirements for speed. This boat is within the range of construction by the amateur builder and a brief description of the processes to be followed might be in order.

The first operation is as usual the drawing of the lines to full size. Stations are spaced 2 feet, 7½ inches apart and moulds should be made at each of these stations. The drawings show only one-half of the mould and it is, of course, necessary to complete both sides in order to get the full section at any point. The next job in order is

the keel. It is gotten out of a piece of white oak and moulded to the shape required by the drawings. The various moulds are erected along the keel in their proper positions and securely fastened and stayed.

The stem is cut from a piece of natural crook hackmatack and securely bolted to the keel member. The joints should be very carefully fitted so that there is no play whatever. The bevel and rabbet for the planking are cut on both the keel and stem. Prepare a fid to guide you for the proper depth of rabbet. Another hackmatack knee is used at the stern to take the transom. This is prepared from a double thickness of white cedar bent to shape and not exceeding ⅝ inches in total thickness.

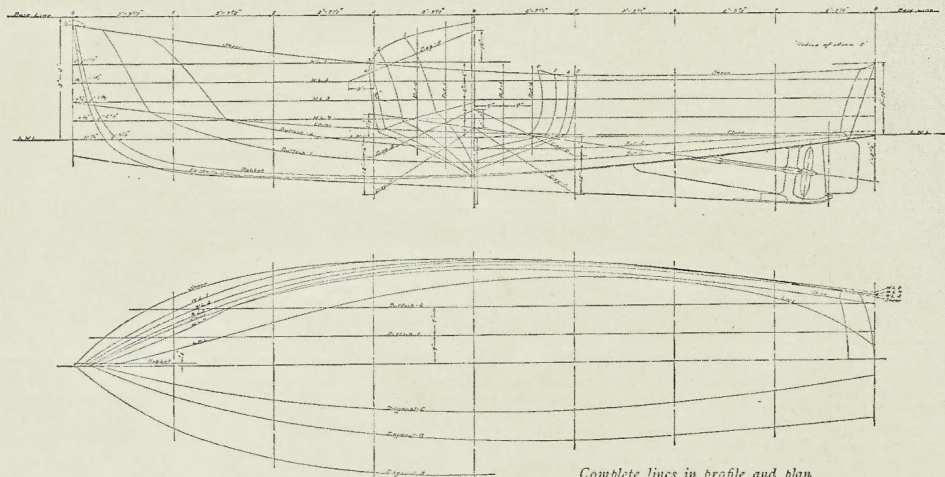
When all is in readiness for the beginning of the work the keel should be laid on a smooth floor and rigidly supported. The bottom of the keel is accurately located at the proper distances above the base line as determined by the table of offsets. The moulds are then placed and the transom can be added. It is essential that the moulds be erected absolutely plumb, and after they are in place the waterline should be carefully checked to see that they are all truly in

One desiring a smart little runabout suitable for use around the summer home, lake or camp, should find this design interesting.

The described motor, though small, will drive the boat at a good clip, and be very economical with the present high cost of gasoline.

The divided forward seats and auto steerer provide a convenience not usually found in a runabout of this type, and the cockpit provides ample room for ferrying to and from camp, fishing, or any use a small boat might be put to.

WM. H. HAND, JR.



Complete lines in profile and plan

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Stations	0	1	2	3	4	5	6	7	8
Sheer	0-2-4	0-7-2	0-11-6	1-3-2	1-5-6	1-7-0	1-7-4	1-7-0	1-5-3
Chine	2-3-1	2-7-1	2-10-1	3-0-2	3-1-3	3-2-2	3-2-4	3-2-3	3-1-6
Buttock-2		1-0-2	3-0-1	3-4-4	3-6-3	3-6-4	3-5-2	3-3-3	3-1-3
Buttock-1		2-9-6	3-6-6	3-10-0	3-10-6	3-10-0	3-8-0	3-5-2	3-2-4
Rabbit		3-10-5	4-1-7	4-3-1	4-2-7	4-1-2	3-10-4	3-7-0	3-3-1
Fairbody	3-8-0	4-0-4	4-3-1	4-4-0	4-3-2	4-1-4	3-10-6	3-7-1	3-3-2
Heel		4-1-2	4-3-5	Straight			5-0-1		
Sheer		1-9-6	2-5-6	2-8-2	2-9-0	2-8-0	2-5-4	2-1-1	1-7-7
W.L. 1		1-5-2	2-3-7						
W.L. 2		1-3-1	2-1-6	2-7-0	2-8-5	2-8-0	2-5-4	2-1-2	1-8-4
W.L. 3		1-1-2	2-0-0	2-6-1	2-8-1	2-7-5	2-5-1	2-1-4	1-9-2
W.L. 4		0-9-6	1-10-4	2-4-6	2-7-1	2-6-5	2-4-3	2-0-7	1-8-4
L.W.L.		0-5-0	1-1-4	1-9-0	2-1-4	2-3-1	2-1-2	1-7-7	0-4-1
Chine		1-0-1	1-10-2	2-3-7	2-5-6	2-4-7	2-2-3	1-10-3	1-5-4
Rabbit	Filler	sided	1 3/4	swelled to 2 3/8			at shaft hole		
Diagonal-A		1-7-7	2-5-6	2-10-4	2-11-4				
Diagonal-B		0-9-6	1-5-4	1-10-0	2-0-3	2-1-6	1-11-4	1-9-1	1-6-4
Diagonal-C		0-5-5	0-11-0	1-2-1	1-3-4	1-3-1	1-1-1	0-9-5	0-5-1

Table of offsets for Shark, a 21-foot Hand runabout. Note—All dimensions given in feet, inches and eighths to the outside of planking. All heights given below base line

Apron: Of clear straight grained tough Georgia pine, in single lengths, 2x4 1/2 inches, bent to form, and securely fastened through floors on heels of frames. To be fastened to keel with 1 1/2-inch galvanized bolts spaced one between each pair of frames. Floors on heel of frames to be fastened through both apron and keel with 1/2-inch galvanized bolts. Stem and apron to be riveted with 5/16-inch bolts.

Stem: To be of natural crook hackmatack, sided 1 3/4 inches and moulded as indicated. To be rabbeted for planking and bearded to carry out all lines of same above L. W. L. except at head, which is to be finished square as indicated. To be fitted with a 3/8-inch brass stem band, extending 18 inches below L. W. L. and over top of head. Same to be neatly filed to show as narrow face as practical at and near L. W. L.

Stern: To be double planked of white cedar, total thickness 5/8 inch, bent on a 5-foot radius, reinforced by center kees as indicated, with reinforcing oak cleats at sides for side plank fastenings as indicated. Also to have intermediate cleats 3/4x1 1/2 inches white oak, spaced in each half of stern as shown.

Frames: All frames to be of white oak stem bent, spaced 7 1/2 inches on centers. Those under motor beds 7 1/2x1 1/4 inches, all others 7x1 inch. Heels of frames to be boxed into apron. All floor timbers to be sided the same as frames and carefully fitted on top of frames and to be securely fastened to keel with 1/2-inch galvanized bolts, fitted with nuts and washers. Frames to have the required filler pieces of white pine above and below chines as shown in cross section plans. Frames to be fastened to chines with 1/2-inch copper wire nails and where the bottom edge of side planking and the top edge of bottom planking join the chines, there will be a 1/2-inch copper wire nail through planking, chine and frame. All copper fastenings to be properly riveted over copper burrs. There will be suitable limbers under all floors to lead bilge water to pump.

Chines: To be of Georgia pine in two parts as indicated by plan. Both parts to run full length of hull. Inner member to be 1x3 inches, set as shown and properly beveled to receive planking and securely riveted through all frames.

Outer member to be 1x1 1/2 inches beveled to form square caulking seam, fastened securely through inner member and frames with copper nails as above mentioned.

Clamps: Of selected Georgia pine, 7/8x2 1/2 inches set as shown, to support decking

alongside of cockpit and securely fastened to heads of frames. To be reinforced in way of cockpit by indicated Georgia pine filler piece or shelf clamp to form backing for cockpit curb fastenings.

Deck Beams: To be of oak sawn to form, sided 5/8 inch and moulded 1 3/4 inches, spaced as shown with ends set into clamp and securely fastened to same.

Motor Beds: To be of 1 3/4-inch oak or Georgia pine set and bolted in accordance with plan. All parts to be carefully fitted together and securely riveted through frames and floors. Motor a 9-12 h.p. Universal, to be bolted to beds with galvanized bolts extending through fore and aft members with nuts and washers on under side.

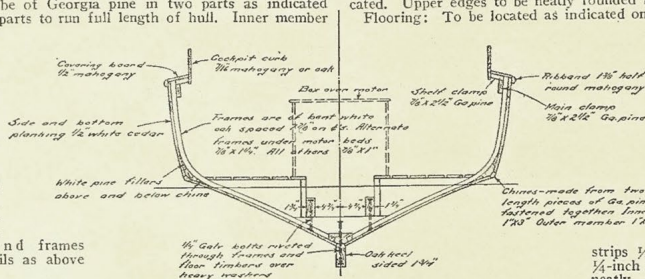
Frame in General: All exposed edges of clamps, frames, chines, deck beams, etc., to be neatly finished with chamfered edges. All parts to be very carefully fitted to bear evenly and very securely fastened in the usual manner.

Planking: The hull will be planked with white cedar to finish not less than 1/2 inch. To be fastened with No. 12 copper wire nails riveted over copper burrs. Heads of all outside fastenings to be properly countersunk and bunged.

Decking: To be of 1/2x3-inch matched white pine laid fore and aft in the usual manner, and fastened into deck beams with 1 1/2-inch galvanized wire nails, with heads let in. Deck to be planed perfectly smooth, heads of nails covered with putty and entire deck to be covered with 8-oz. duck in single piece, laid in shellac or marine glue, and ironed down into place with hot flat irons. Edges to be hauled down over outer edge of deck, and neatly tacked with wire tacks will be covered by ribband rail when in position. Inner edge finished in the same manner. Decking to be of 7/16-inch mahogany or oak fitted as indicated, and fastened in place with 1 1/4-inch No. 8 oval head brass screws. Each side to be in single piece with fore end neatly and securely fastened with angle brass plate as indicated. Upper edges to be neatly rounded in the usual manner.

Flooring: To be located as indicated on floor beams of oak 1x1 1/2 inches securely fastened to frames, with two struts or supports under each beam. Removable box to be fitted as indicated over motor.

Flooring to be of selected white pine in strips 1/2x3 inches, set with 1/4-inch space between, with neatly chamfered upper edges run fore and aft in



Milship construction section at station No. 4

the usual manner. The center section to be removable parts of three or four planks cleated together and arranged to lift out. Flooring of same kind to be fitted in motor compartment with removable sections around engine to allow of getting at all parts below floor line level. Flooring to extend from station No. 1 to transom. To be fastened with brass screws.

**Bulkheads:** Main bulkhead to be of matched chamfered mahogany  $\frac{1}{2}$  x 3 inches set vertically in the usual manner and backed by indicated ties or beams. Bulkhead to be fastened with 1-inch oval head brass screws symmetrically arranged.

**Seats:** To be formed as indicated. Forward seats to be of the divided type. To be formed of 7/16-inch mahogany as shown. Rear seats formed as indicated with forward ends supported on 1 1/4-inch mahogany legs.

**Ribbands:** Indicated ribband rail to be mahogany 1 3/4 inch in half round section, fastened as indicated, with screws properly let in and bunged with bungs of same material as rail. Fore and aft ends to be neatly tapered and rounded.

**Bits:** Oak bitt  $2\frac{1}{2}$  x  $2\frac{1}{2}$  inches in fore deck and a pair of quarter bitts 2 x 2 inches to be neatly formed and fitted where indicated. Same to extend through deck and 1-inch reinforcing block set under deck and secured to beam, with heels securely fastened below in the usual manner. Heads to be fitted with 8 x 1/2-inch brass pins in the usual manner.

**Woodwork in General:** All parts of hull outside and all exposed surfaces inside to be carefully planed off smooth and thoroughly sandpapered to give a perfectly smooth finish. All work to be done to the satisfaction of the owner, and all details of hull woodwork to be complete in every respect. Work not herein specified but that is shown on the drawings or is manifestly necessary to complete the boat in a workmanlike manner to be done without extra charge.

#### *Metal Work*

**Rudder:** Rudder to be Hand pattern No. 305 fitted with rudder port and 10-inch quadrant. To be connected to steerer with 3/16-inch phosphor bronze wheel rope lead over suitable bronze sheaves.

**Stuffing Box:** To be Mechanical Devices Co. Pattern K. S. No. 1 bronze to fit shaft, fastened on apron with 1 1/4-inch No. 14 brass screws.

**Strut:** To be a bronze casting Hand pattern No. 472 properly babbitted to fit shaft, to include strut and skeg in one piece. To be fastened through apron with six 5/16-inch brass stove bolts, with nuts inside and countersunk heads in plate.

**Steerer:** A Hall steerer to be properly fitted where shown, connected with rudder quadrant by 3/16-inch diameter phosphor bronze tiller rope lead over specified deck sheaves and through brass fair leaders, set under deck and evenly spaced between sheaves on each side.

**Tank:** Gasoline tank to be seamless, tipped steel, 12 inches diameter by 24 inches long, set in a suitable strong spruce cradle, under deck as indicated. To be fitted with two swash plates and 2-inch filler plates piped to deck as shown.

**Flag Staff Sockets:** A pair of 3/4-inch flush type polished brass flag staff sockets to be fitted where indicated. A pair of 4-inch brass beveled bow chocks to be fitted on forward deck where indicated and a pair of 4-inch straight chocks on the stern.

**In General:** All details of metal work and hardware to be complete and all parts of polished brass. All fastenings not otherwise specified to be brass screws, and all inside joiner-work to be fastened with oval head brass screws.

#### *Painting*

Entire inside of hull, to be painted with DeVoe's tan deck paint. Outside, below painted water line, to be painted with one coat of red lead and two coats of best quality green bottom paint. Topsides to be painted with four coats of white lead, mixed with lamp black in sufficient quantity to give a light gray color. Decking to be painted with three coats of light tan deck paint. Bulkheads, seats, flooring, curbs, ribbands, and all other parts of hull to be finished with one coat of wood filler and three coats of spar varnish.