

HOW TO BUILD SEA SCOUT

No showroom skiff, this 15-footer will respond ably in just about any kind of water and weather. Plenty of seagoing sense has gone into this sturdy design

BY ROGERS WINTER

THE ROUGH-WATER ABILITY of the average small utility boat is enough to make a preacher cuss and angels weep. Far too often, newspapers carry stories about people upsetting in outboard-powered skiffs and drowning. Often the accidents are caused by carelessness, but more often they are the result of a combination of high wind, rough water and boats so lacking in seaworthiness that they would be safe for use only on small millponds.

An otherwise properly designed outboard skiff can be fast in smooth water, but get out into a good chop and she will just about pound her bottom out. Let the water get a little rougher and she will plunge down the face of a wave, burying her nose and throwing up ten feet of spray.

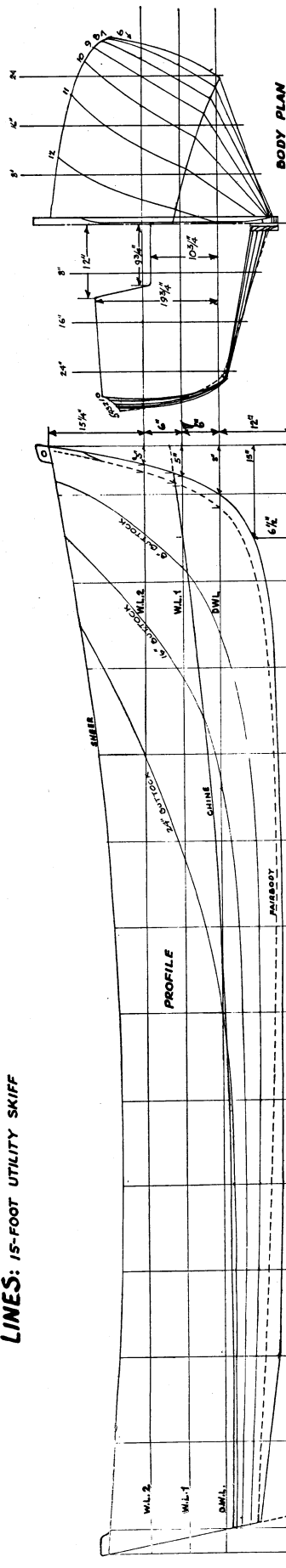
There are many bodies of water where roughness is the rule and not the exception—Long Island Sound, Barnegat Bay, the Delaware, the Chesapeake, the big sounds of the Carolinas and Georgia, the Great Lakes, Puget Sound, Mississippi Sound, the Gulf of Mexico and many

others. To the sailor who lives on these waters, possession of a good outboard skiff is on a par with having an affable wife who is also a good cook. You don't part with either—at any price.

A couple of years ago, this designer built a utility skiff designed expressly for rough-water use. He has used it on fishing trips as far as ten miles out into the Gulf of Mexico, trolling for king mackerel with an 18-hp outboard on the stern. Many have been the times on these trips when some astonished boatman has surged alongside with 50 to 100 hp astride his transom and offered immediate rescue. The offers were always politely declined, usually because the rescuing boat was not so safe as the one about to be rescued.

Despite encountering some fairly rough seas and high winds, the designer has yet to see this boat take a drop of water over the gunwales, except that blown in by the wind. He can also troll all day on 12 gallons of gas, whereas those owning boats with big motors need a federal

LINES: 15-FOOT UTILITY SKIFF



GENERAL CHARACTERISTICS	
L.O.A.	15'-0"
L.W.L.	14'-0"
BEAM AT SHEER	5'-0"
BEAM AT WATERLINE	4'-4"
DRAFT TO FAIRBODY	8"
DRAFT, MAXIMUM	9"
DISPLACEMENT, LADEN, S.W., LBS. (A.M.L.)	960
BLOCK COEFFICIENT	.351
PRISMATIC COEFFICIENT	.721
FINESS COEFFICIENT	.40
ASPECT RATIO	3.8
SPEED-BEAM RATIO, STANDARD (30 H.P.)	3.84
S.M., TRAVERSE, STATIC, FEET	14.0
S.M., LONGITUDINAL, STATIC, FEET	80
MOMENT TO TRIM 1" FT. LBS.	234
POUNDS PER 1" IMMERSION	11
SPEED, ESTIMATED, 10 H.P., M.P.H.	13
" " " 18 H.P. "	28
" " " 25 H.P. "	31
" " " 30 H.P. "	40
MAXIMUM SAFE H.P., D.B.C.	



NOTE: DO NOT SCALE FROM THIS SHEET WHICH IS AN INK TRACING OF THE PENCIL DRAWING. SCALING SHOULD ONLY BE DONE ON FULL SIZE DRAWING.

"SEA SCOUT"

DESIGNER, **ROGERS WINTER, S.S.C.D.**
 911 WEST COLLEGE DRIVE
 PERRY, FLA.
 SHEET 1 OF 4
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subsidy to keep abreast of the gas-company bills.

After the boat had given two years of satisfactory use, the only modification in the original design thought desirable was a slight widening of the stern at the waterline to get more planing ability for use with 25- to 40-hp motors.

Sea Scout is the result of this modification. A general-purpose utility skiff for rough-water use, the boat is 15' overall, with all the interior space left open for maximum room when fishing. The craft is V-bottom, with seam-batten planking. The V in the bottom is fairly deep aft for maximum control in following seas, with a sharp entrance for easy riding and prevention of pounding. With a wide flare forward and a rounded configuration at the waterline, the hull picks up buoyancy rapidly when waves are encountered, making for maximum sea-keeping ability and dryness.

Speeds possible with various horsepower are given on Sheet 1 of the plans. These are conservative figures, based on full loads and the somewhat conservative standards of the Society of Small Craft Designers, Inc. You can expect to better them, particularly if you are running lightly loaded.

Planking is in strakes, applied over seam battens for maximum hull strength and ease of construction. Contrary to popular belief, this type of planking is as easy to apply as plywood or easier, once the knack of spiling planks to shape is learned. In fitting solid plywood sheets, you often need the help of several friends to hold them in place, and this usually results in long delays during construction while enough friends are lined up for the job at hand. With seam-batten planking, on the other hand, one man can do the work, and one or two planking strakes can be applied in an afternoon or on a weekend. Getting the boat completed is thus a far easier task.

Boat construction divides itself logically into several easy steps. The first is to determine what kinds of lumber are available in the particular locality where the boat is to be built and what kind is to be used where in the boat. Suitable boat lumber can seldom be purchased from the average lumberyard, so some scouting around may be necessary before a suitable supply is located; and, even then, you may have to order it from a distance. Ask around the waterfront; people who make their livelihoods with boats generally know where to buy boat lumber, or know someone else who does.

To make this step easier for the amateur, a List of Materials is incorporated into this article. In it, several different kinds of lumber are specified for each part of the boat. They are listed in order of preference—the main idea being to produce as light a hull as possible, for maximum speed and maximum ease of handling when it is put onto or taken off a trailer.

The list of materials and fastenings also serves another purpose, in that anyone planning to build *Sea Scout* can use it to obtain cost estimates. As a rough calculation, it is thought that all materials can be bought for less than \$250, depending on the locality. You will have to put your own value on your labor. Working in your spare time, if you are a good carpenter and have a good supply of labor-saving tools available, you can probably complete the hull in three months.

Finances examined and lumber and fastenings lined up, it is time to proceed to the second step. This is called lofting the lines, which means simply that the lines as shown on Sheet 1 of the drawings are drawn out full scale. This is one of the most important steps in building a pretty little boat instead of an awkward, unfair hulk, and it is a step that is most often neglected by amateurs—to their subsequent sorrow.

Important as it is, lofting is a fairly simple job. The easiest way to go about it is to buy a 4'-wide sheet of marine plywood $\frac{3}{8}$ " thick and 16' long. Since a good part of this sheet can be used for planking the transom after its preliminary job is done, it is suggested that it be mahogany-faced, to make a nice varnished transom.

From scrap material, construct three sawhorses about 30" high, and lay the plywood sheet across them. Then obtain some heavy paper that can be laid over the plywood and used to draw out the lines. The paper generally used is builder's paper, obtainable from any building-supply house. It is ordinarily used for insulation on the sides of houses, but can be admirably converted to the nobler purpose of boatbuilding.

You need two sheets, one 4'x16' for the Profile and Plan drawings and another 4'x6' for the Body Plan. Fasten the long sheet to the plywood by means of masking tape, so that it will not slip at just the wrong moment.

Another piece of equipment vital to lofting is a flexible batten about 16½' long. You will have to make your own—you can't buy one. Take a piece of 1" lumber the proper length and rip off a $\frac{3}{8}$ " strip. Planed

smooth, this is your batten, which is used to draw the long, sweeping curves necessary to reproduce the lines.

You will need a shorter batten to draw the curves of the Body Plan. Make it $\frac{3}{8}$ " square, so that it can be used also to draw in the thickness of the planking a little later.

Reproducing the lines full size is done from the measurements given in the offsets. These are given in feet, inches and eighths of inches, to the outside of the planking. For example, read 4-6-3 as 4'6 $\frac{3}{8}$ ". Use one long edge of the plywood as a base line, just as the base line is shown on Sheet 1. Erect perpendiculars at the station lines as given, and draw in the waterlines at the proper heights by snapping a chalk line across the paper. You can then make the lines permanent with a pencil, using a piece of 1" lumber as a straightedge.

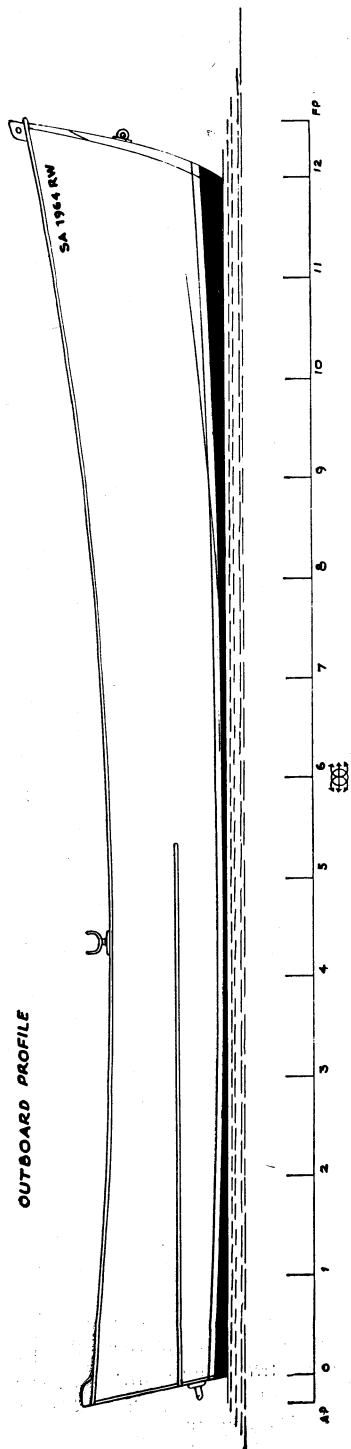
In lofting the lines, remember that each intersection of lines in the three views, Profile, Plan and Body Plan, must correspond exactly in each view. When the points on a line—the sheer, for example—are plotted out, bend the long batten through the points, and hold it in place with small finishing nails tacked into the plywood alongside the batten or by means of weights. Get down close to the plywood and sight along the batten. If it does not run true and fair, without any wobbles or breaks in the curve, you will have to release it at the point where it is out of line and let the batten spring into a fair curve. This is done for all curved lines. You should be able to hit the points you have plotted out within $\frac{1}{8}$ ", since every effort was made to make the offsets accurate—contracted lines being used for this purpose.

It is worthwhile to take a good deal of time to get the lofting done properly. By so doing, you can solve most of your building problems on paper and not on the boat itself, where a mistake can be extremely costly.

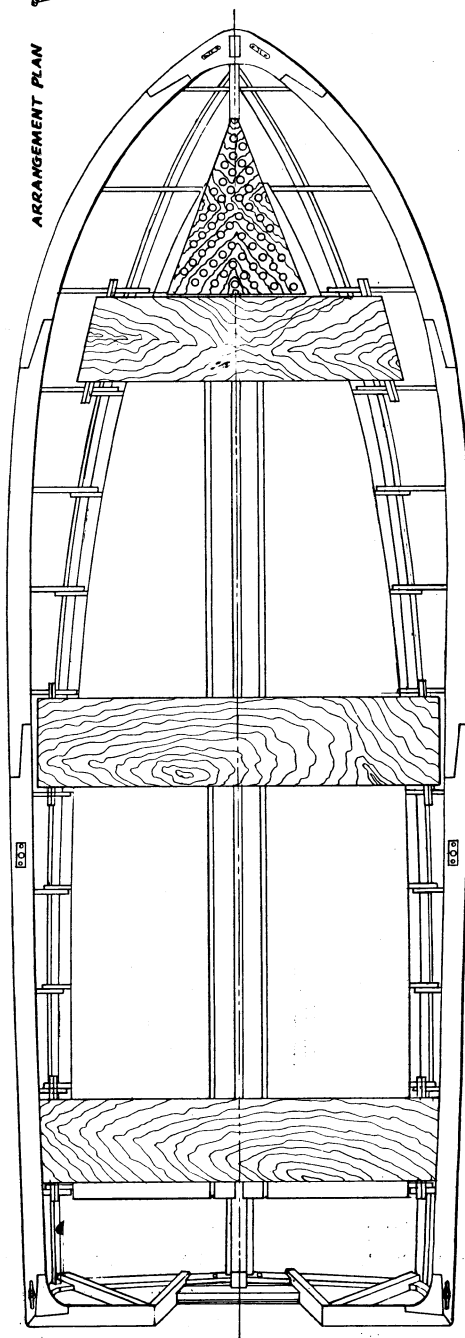
One method of approaching the problem of lofting is to draw out the Body Plan first on the small sheet of paper, and then do the Profile and Plan views. This is okay, provided you make sure to check the dimensions on the Body Plan against your full-size drawings of the Plan and Profile, which control fairness.

Sea Scout is built upside down. Two methods of doing this are available to amateurs. If a wooden floor wide enough and long enough is available, the boat can be built on this floor. (See sketch.) When using this method, it is necessary to draw a builder's base line about a foot or

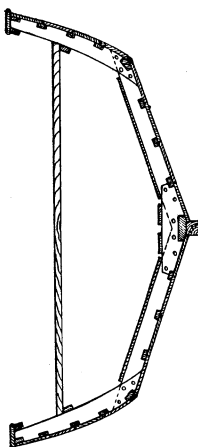
OUTBOARD PROFILE



ARRANGEMENT PLAN



MIDSHIPS
LOOKING AFT



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18 inches above the sheer line on the loftings. When the frames are subsequently taken off, they are extended sufficiently to meet and are cut off at this line.

If a concrete floor is the only thing available (a carport, for example), it will be necessary to build a jig similar to that in the sketch on Sheet 4. The jig should be strongly constructed of two-by-sixes, and the parallel stringers should be fastened to the uprights with $\frac{1}{2}$ " bolts with washers. The bolts fit into notches in the uprights and allow the stringers to be set absolutely level fore and aft and athwartship.

After the lines are lofted, checked, rechecked and checked again, draw in the outlines of the keel, keelson, floor timbers, planking and side and bottom frames, as well as quarter knees, stern knee, sternpost, breasthook, gunwale caps and so on, much as in the Inboard Profile and Typical Construction drawings. Because the section lines in the Body Plan aft of amidships fall almost on top of one another, you might find it useful to make separate drawings of each section for clarity.

The next step is what is known as taking off. You can accomplish this most easily by buying a roll of heavy or extra-heavy draftsman's tracing vellum and using this to trace the outlines of each part of the boat. The outlines can then be cut out with scissors and stuck to the lumber with small pieces of masking tape to serve as templates for the saw cuts. If the templates are plainly marked, several can be stuck to one piece of lumber, making for economy of lumber and labor.

Since we have now arrived at the point at which we are cutting up lumber, let's digress momentarily and discuss the subject.

The lumber sizes given on the drawings are net sizes, which means that few, if any, sizes will conform to commercially available lumber. To get properly sized lumber to build *Sea Scout*, considerable planing is necessary. This can be a big problem for an amateur. Sometimes the outlet from which the lumber is purchased can do this dressing down. Often it can't, in which case a little ingenuity is necessary. Contact the industrial-arts instructor at your local high school. Perhaps he can help. If he can't, find yourself a cabinet shop with a planer and get the work done there. Charges will be nominal.

A point to note in buying and processing lumber is that the List of Materials gives the dimensions of every individual piece necessary to construction of the boat. You can

effect worthwhile savings by combining the various sizes into longer lengths and wider widths and then ripping the lumber to suit.

The next step is to assemble the frames and the transom. The transom figures have been expanded, so when the transom is cut out and assembled, leave an extra $\frac{1}{8}$ " all around to allow for beveling later. Also, remember that the frames forward take a very sharp bevel and that the *inside* of the frames here must also be beveled to accommodate the clamps. Allow a little extra for this purpose on the inside of the frames.

Assemble the frames and transom by laying them out on the full-size drawings of the Body Plan, and glue and fasten them together.

Best glue to use is epoxy glue. Unfortunately, for some strange reason, epoxy glue is hard to come by in some localities. A thoroughly satisfactory brand is Epoxy No. NP428, made by the Miracle Adhesives Corp., 250 Pettit Ave., Bellmore, N.Y. You can order from the company direct by mail.

Resorcinol (Elmer's) glue is also satisfactory, although hard to mix properly. As a last resort, you can use plastic resin glue.

In addition to the glue, use three screws of the proper length and size where the side and bottom frames join and also three screws on each side of the center line to fasten the floor timbers to the frames. A screw is the proper size when it will go almost all the way through both pieces of lumber to be fastened.

The transom is assembled with only one layer of plywood planking. The final layer is put into place, with marine glue between the layers, as one of the final steps in the assembly—when the planking on the sides has been completed. Fasten it with $\frac{1}{2}$ " screws, countersunk slightly and puttied.

If the frames are to be erected on a jig, they must be assembled with a cross spall on each frame, with the top edge of the cross spall coming exactly on the setup line as shown in the drawings. The method is explained in a sketch on Sheet 4. Examination of this sketch and the position of the setup line as shown on the other drawings will indicate that if this system is used, all the frames will automatically come together at the proper height when they are erected on the jig.

If the boat is to be built on a shop floor, the frames are extended to a builder's base line, as explained previously, but they are still assembled with a cross spall, for strength and rigidity. The only difference is that

the cross spall does not have to come at any particular height.

Whether the boat is erected on a jig or on the shop floor, it is necessary that a center line be marked on the floor. The frames are centered on this line by means of a plumb bob and are erected at right angles according to the station lines shown on the drawings. Check each frame three ways: (1) Is it on the center line? (2) Is it straight up and down (determined with a level)? and (3) Is it at exactly right angles to the center line (checked with a framing square)? If the frame meets all these checks, it is securely fastened in place and braced.

The station lines are marked with a pencil on the jig or on the shop floor. Distance between the stations is shown on Sheet 1.

The *side frames* are placed *forward* of the station lines from Station 6 forward, with the floor timbers also forward, and *aft* of the station lines from amidships aft. This is to allow for the bevels on the frames. Study of the Inboard Profile will make for complete understanding of this.

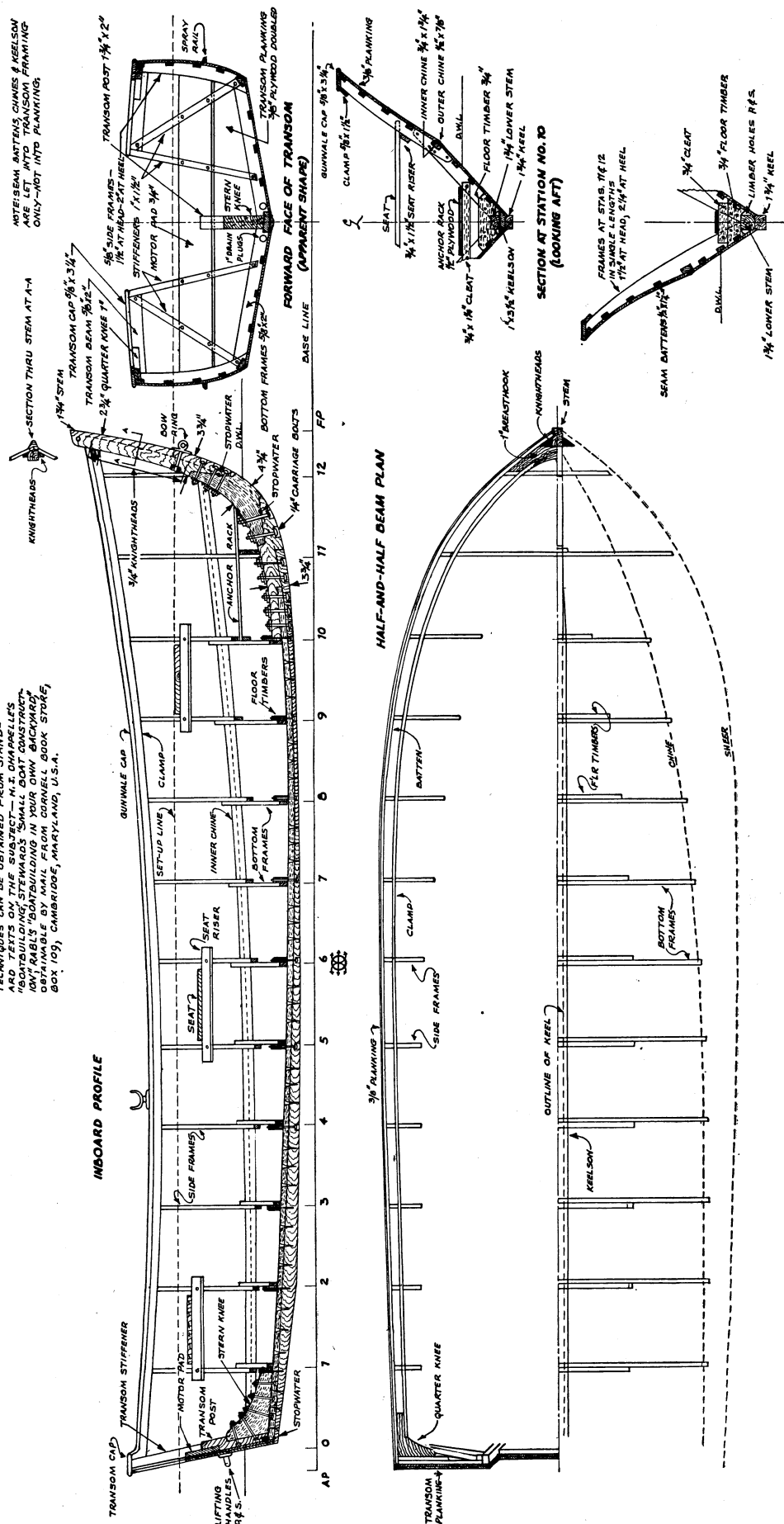
If a jig is used for assembly, the cross spalls are fastened to the stringers with short lengths of 2"x2" stock. Fasten them firmly, preferably with screws, as they will undergo considerable strain when the planking is applied.

After the frames are erected, the keelson, keel, stem, stern knee and transom are put into position and fastened in place, as shown in the drawings, with glue, screws, carriage bolts and drifts. If possible, drill the holes through the floor timbers for the carriage bolts and drifts with a drill press before erecting the frames. Make them $\frac{1}{32}$ " undersize, and tap the bolts or drifts home with a hammer. Before the keelson and keel are fastened in place, be sure they are beveled correctly and that the stem is beveled and rabbeted and has the stopwaters in place.

If you have never done it before, rabbeting the stem may loom as a complicated piece of work. Don't be alarmed—it isn't. Study the sketch on Sheet 4. Use the $\frac{3}{8}$ " batten and a $\frac{3}{8}$ " chisel, and cut notches every 6" along the stem to fit the batten. The angle at which the batten fits into the stem varies all along the stem's length. The correct angle can be obtained from the lofted Plan, if you have done a proper job of lofting. Study the angle at which each waterline meets the half breadth of the stem, and make your angles accordingly, using a carpenter's bevel. After all the notches are cut, cut out

ADDITIONAL INFORMATION ON BOATBUILDING
 MAY BE OBTAINED FROM THE FOLLOWING
 "BOATBUILDING STEWARDS" SMALL BOAT CONSTRUCTION
 OBTAINABLE BY MAIL FROM CORNELL BOOK STORE,
 BOX 109, ITHACA, NEW YORK, U.S.A.

INTERSEAM BATTENS, CHINES & KEELSON
 ARE LET INTO TRANSOM FRAMING
 ONLY - NOT INTO PLANKING.



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the wood between, and the rabbet is complete.

It is now time to cut the notches for the seam battens and the chines. A backsaw and a veneer saw are extremely useful here, as are a wood rasp and a Sureform file. The notches take a bevel at each frame, so work slowly and carefully, getting the battens in fairly, with an even sweep from stem to stern. Use one long screw at each frame and two at stem and transom. The outer chines are now put on, after the inner chine is beveled, with glue and screws. The outer chine is beveled to whatever extent is necessary to accommodate the planking. It is suggested that pieces about 5' long be used for these outer chines, as pieces this length can be beveled more easily. Along the forward frames, the outer chines will have hardly any bevel, whereas they have quite a lot at the stern.

Box the chines and battens into the stem, flat with the rabbet, and fasten with glue and screws. After this is done, install the knightheads as shown. They are essential, because the planking near the sheer comes into the stem at an acute angle and you must have something to which the planking screws can be fastened. Use glue on the knightheads, as well as countersunk screws.

It is now necessary to go all over the framed-up and battened boat with drawknife, spokeshave and plane, beveling and fairing up everything according to the battens and chines, in order that the planking will everywhere rest securely and firmly.

Next comes the planking, a job which, when done for the first time, seems to confound nearly all amateurs, especially when spiling is necessary. Don't let this bother you. It confounded this designer, too, the first time he had to do it.

Because planking looms as such a problem, an effort has been made to explain spiling by means of sketches on Sheet 4. Spiling, however, is not something that can be easily explained on paper, either by drawings or in words. Experience is the best teacher, so study the sketches, read up on the subject, get a pretty good idea of what you are trying to do—and fall right to work. Just remember, when spiling, that the compass must remain at the same opening all the time, otherwise your spiling will be all off. Therefore, don't drop it on the floor. Your spiling board should be very flexible, and it should not be edge-set when bent into place.

You will, perhaps, ruin the first two or three planks you spile, but you will learn quickly, since the

method is essentially simple. After that you will have no problems.

Along the keel, keelson and stem, the planking is set in bedding compound. Use enough so that it squeezes out all around when the planks are screwed into place. Bedding compound is spread all along the seam battens as well, and each plank is pulled up tight against its neighbor through the use of wedges and C-clamps as shown in the sketch.

When fastening the garboard strakes of planking (alongside the keel), you will find that they require considerable twisting. You may have to soften them by soaking for two or three days, boiling the ends, steaming or wrapping them in rags and pouring on hot water. The same problem may be encountered in the sheer strakes, which take quite a bend forward.

When you run into a problem like this, the best solution is to resort to the moaning chair—something that is found around all good boat shops. This is a special chair set off to one side where you can sit and contemplate the problem, reflect on the possible ancestry of the designer, wet your tonsils with you know what and eventually decide that, since you are this far along anyway, you will go ahead and finish the boat.

When the planking is completed, all open seams are filled with a mixture of sawdust and glue, and when this hardens, the outside is planed smooth and sanded. You can best tell when the planking is smooth by running your hand over it.

If you plan to carry the boat on a trailer, you will find that the bouncing around it gets on the road tends to open the seams a bit and cause leaks. The best preventive measure is to tape the seams now with 2" fiber-glass tape and resin. After the resin has set up hard, feather the edges of the tape with a sander.

The boat can now be cut loose from the jig or floor and turned over, the interior (seats, risers, quarter knees, breasthook and clamps) installed and the cross spalls removed. The breasthook is fastened with a carriage bolt through the stem, with the head counterbored and plugged, and also fastened with long screws through the planking on the sides. The quarter knees are fastened with long screws.

You have now arrived at the painting stage. The first step in this is to give the entire inside and outside of the boat two coats of wood preservative to prevent rot. Don't apply this beforehand if you are going to fiber-glass the seams, as it is oily, and fiber-glass resin won't stick to oily wood.

When the wood preservative is dry, paint your boat with a good grade of marine paint. Don't use house paint. It won't last. You can do better things with your money, such as throwing it out the window into the rain. Give the inside two coats and the topsides three coats. If the boat is not to remain in the water all the time, use a hard racing finish (three coats) on the bottom; if it is to remain in the water, use antifouling paint on the bottom, applying the final coat just before the boat goes into the water.

Color schemes can be anything the builder wishes, but a good one is red bottom, white topsides, varnished transom and gunwale cap, with a black breaker stripe between the bottom and topsides. Interior can be light green or gray.

Floorboards can be either slatted or solid. If you are going to use the boat for fishing, make them solid. There is nothing that stinks worse than a small fish or crab that has slipped down under the floorboards where it can't be reached and removed.

Painting finished, install the bow ring, and run a 3/4" aluminum, stainless-steel or bronze oval strip down the front of the stem and under the boat about three feet.

As a final touch, install some plastic or aluminum tubular rod holders inboard near the seats. Also install a couple of Phi-f-fff drain plugs in the drains in the bottom of the transom, to make the boat self-bailing when underway. These plugs are made by Tempo Products Corp., Cleveland, Ohio, and can be bought at most marine-supply firms.

If you are using the boat by yourself, with as large a motor as 30 hp, you may find that it will assume an adverse planing angle. The cure for this is a set of Trim Tabs, also made by Tempo Products.

If you are to use a larger motor, don't omit the gunwale caps. They are an important longitudinal-strength member.

At this point, you are ready for a successful test of a boat that will be safe, able and fast and that if properly maintained will last a lifetime.

Large-scale (1 1/2"-to-1') blueprints are available at \$8 per set. Send check or money order to Rogers Winter, c/o SPORTS AFIELD Boatbuilding Annual, 959 Eighth Ave., New York, N.Y. 10019. Foreign buyers please remit in New York or San Francisco funds at par. If airmail shipment of plans is desired, add \$1 for the United States and Canada, \$2.50 for England and continental Europe, \$4.00 for Australia, New Zealand and southwest Pacific areas.

HARDWARE REQUIREMENTS FOR EUROPEAN BUILDERS MAY BE FOUND IN CATALOG "4" OF SIMPSON-LAWRENCE, LTD., ST. ANDREWS SQUARE, GLASGOW G.1, SCOTLAND.

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"SEA SCOUT"	
DESIGNER	S.S.C.D.
ROGERS WINTER,	
911 WEST COLLEGE DRIVE	PERRY, FLA.
SHEET 4 OF 4	71-1-64

List of Materials		
Woods	Pieces	Size
Quarter-sawed white cedar (juniper), Philippine mahogany, cypress or Douglas fir		
Bottom planking	2	3/8" x 8" x 12'
" "	2	3/8" x 8" x 14'
" "	4	3/8" x 8" x 16'
Side "	8	3/8" x 8" x 16'
Quarter-sawed Philippine mahogany, white oak, Douglas fir or cypress		
Outer chines	32 lin. ft.	1/2" x 7/8"
Seam battens	2	1/2" x 1 1/4" x 12'
" "	2	1/2" x 1 1/4" x 14'
" "	10	1/2" x 1 1/4" x 16'
Clamps	2	5/8" x 1 1/4" x 16'
Seat risers	1	5/8" x 1 1/2" x 10'
Gunwale cap	1	5/8" x 4" x 3'
" "	2	5/8" x 6" x 6'
" "	2	5/8" x 6" x 8'
" "	2	5/8" x 8" x 4'
Inner chines	2	3/4" x 1 3/4" x 16'
Floor timbers	1	3/4" x 4" x 14'
Motor pad	1	3/4" x 6" x 8'
Transom stiffeners	1	1" x 1 1/2" x 8'
Keelson	1	1" x 3 1/2" x 16'
Transom post	1	1 3/4" x 2" x 2'
Stem and lower stem, stem knee	1	1 3/4" x 8" x 10'
Stern knee	1	1 3/4" x 8" x 2'
Keel	1	1 3/4" x 6" x 14'
Quarter-sawed spruce, Philip- pine mahogany, Douglas fir or white oak		
Frames	11	5/8" x 3" x 4'6"
" "	16	5/8" x 4" x 2'
" "	6	5/8" x 4" x 2'6"
" "	4	5/8" x 4" x 3'
Quarter-sawed Philippine mahogany, white pine or cypress		
Seats	1	3/4" x 12" x 10'
Quarter-sawed white pine, cypress or Douglas fir		
Floorboards	10	1/2" x 4" x 10'
(Note: Used only if slat-type floorboards are installed.)		
Marine plywood		
Transom planking	1	3/8" x 4' x 16'
Anchor rack	1	1/2" x 4' x 8'
Floorboards	1	1/4" x 4' x 16'
Fastenings	Quantity	
5/8" No. 6 flathead wood screws	4 gross	
3/4" No. 7 " " " "	2 gross	
1" No. 8 " " " "	3 gross	
1 1/4" No. 9 " " " "	3 gross	
1 1/2" No. 10 " " " "	1 1/2 gross	
2" No. 14 " " " "	1/2 gross	
1/4" x 4" bronze carriage bolts, with nuts and washers	7	
1/4" x 4 1/2" " " " " " "	8	
1/4" x 5" " " " " " "	3	
1/4" x 5 1/2" " " " " " "	1	
1/4" x 3" " " " " " "	3	
1/4" x 3 1/2" " " " " " "	7	
3/8" x 6" chrome bow ring	1	
Miscellaneous		
Oarlocks	1 pr.	
1" transom drain plugs	2	
1" Tempo Phi-f-fff automatic drain plugs	2	
Chrome lifting handles	2	
Epoxy glue	2 qts.	
Liquid marine glue	2 qts.	
Polyurethane bedding compound	3 qts.	
2" fiber-glass tape	180 ft.	
Polyester resin	3 qts.	
Marine paint and spar varnish	3 gal.	
Wood preservative	1 gal.	

NOTE: Woods and materials are listed in order of preference. All fastenings shall be silicon bronze, Monel or hot-dipped galvanized. No black iron fittings, house paint or roof cement allowed. Woods shall be air-dried to 15 percent moisture content and shall be completely free of knots, shakes, warps or winds, except that tight knots not over 1/2" will be allowed.

Sports Afield

THE AUTHORITATIVE MAGAZINE FOR SPORTSMEN

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