



The springboards are used in stiff breezes when a two man crew is aboard.

SPLINTER

A Sailing "Toothpick"

The sport of fast sailing takes on a new meaning in this slender sloop. A raisable bulb fin makes the boat very stable, and easy to beach.

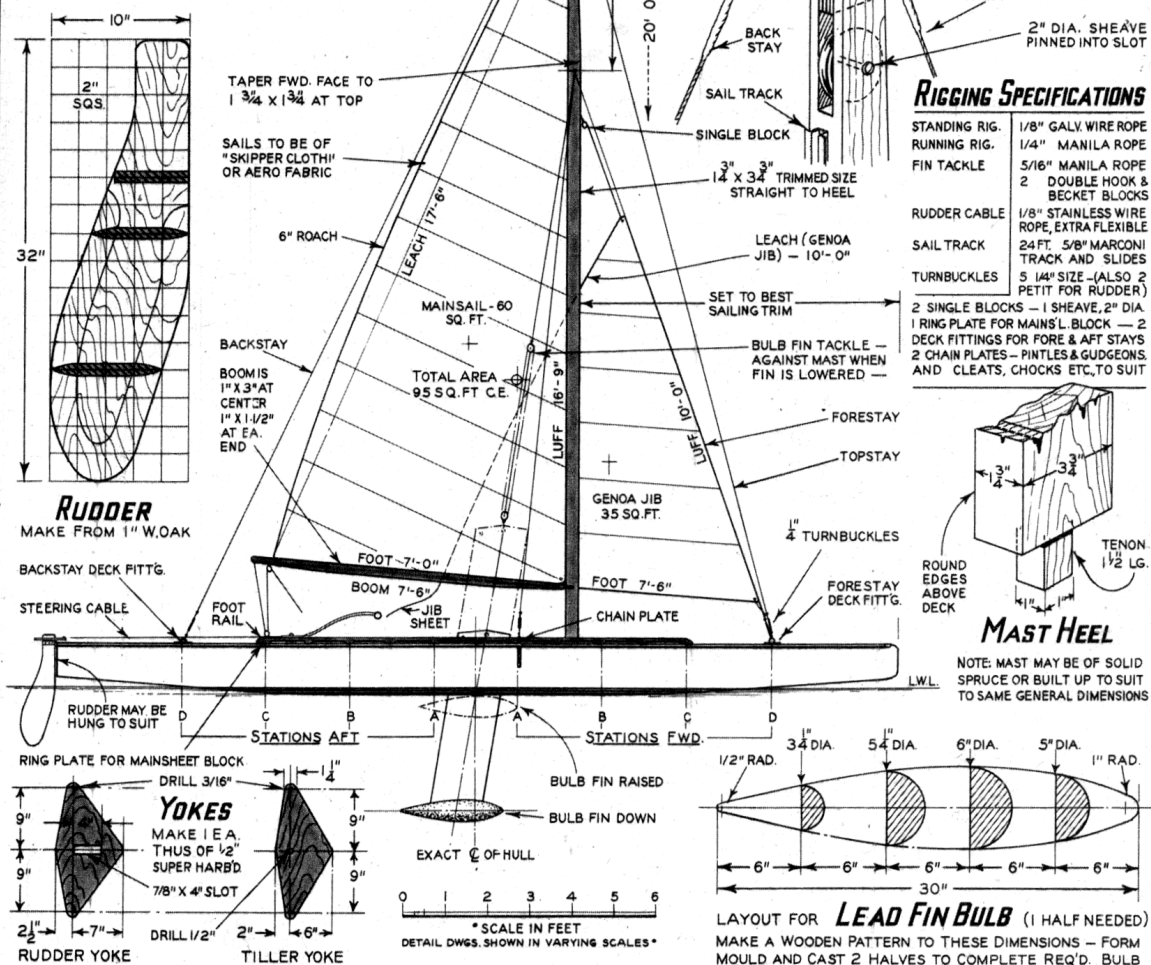
THE past year has seen the advent of sailing boats of long, narrow proportions which are wonderfully fast and furnish very exciting sport. While most of the "toothpick" designs have been fitted with fixed and weighted fins, the design which we present here utilizes a principle employed by some of the old-time French racing canoes.

The first step in the construction is to build the frames and bulkheads. They are all made in pairs. Both ends of the boat are substantially the same as far as shape is concerned. The frames are built of spruce and plywood with all corners square. Notches are cut for the sheer strips, the chines and the keel. While spruce is specified and is undoubtedly the best material for this work, almost any other wood that the builder wants to use will be acceptable, if it is strong and light. The edges of all of the frames are bound with a strip of 1/2" x 6" Super-Harbord nailed to the wood at frequent intervals and further secured with Miracle Adhesive. Bulkheads are made in the same manner as the frames except that their entire surface is covered with Super-Harbord.

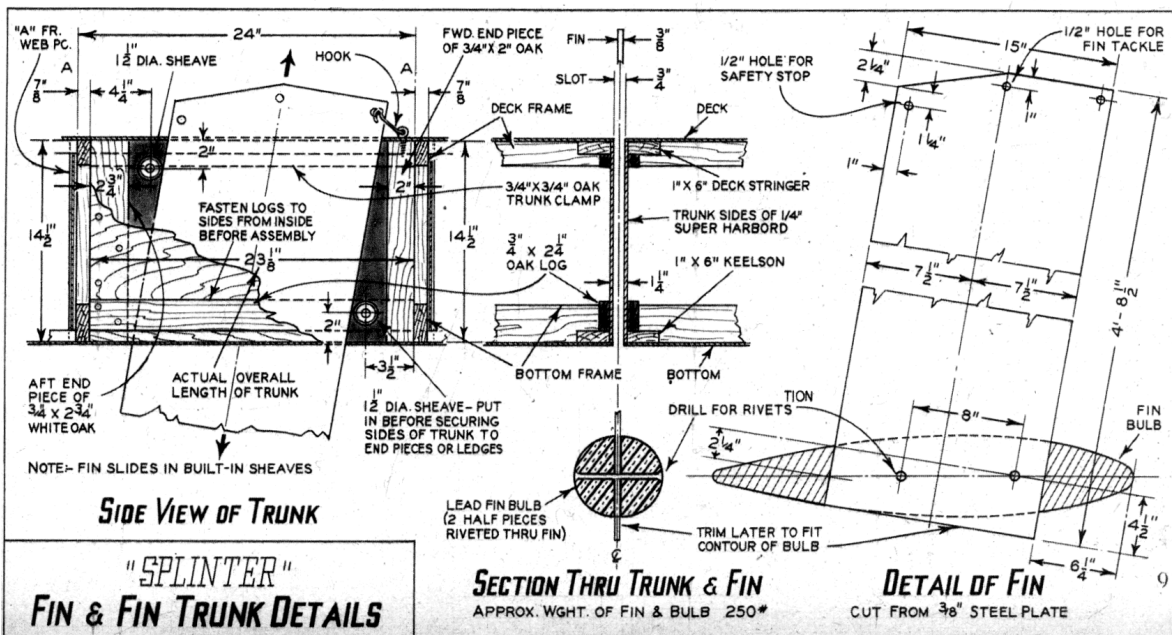
The bow piece is made from a block of white pine as shown and rabbeted to receive the planking. The stern piece is similarly made of white oak. The framing is now ready for assembly. Frames and bulkheads are spaced along a line drawn on a wooden floor or platform. The platform frame may be of rough lumber if the surface is straight.

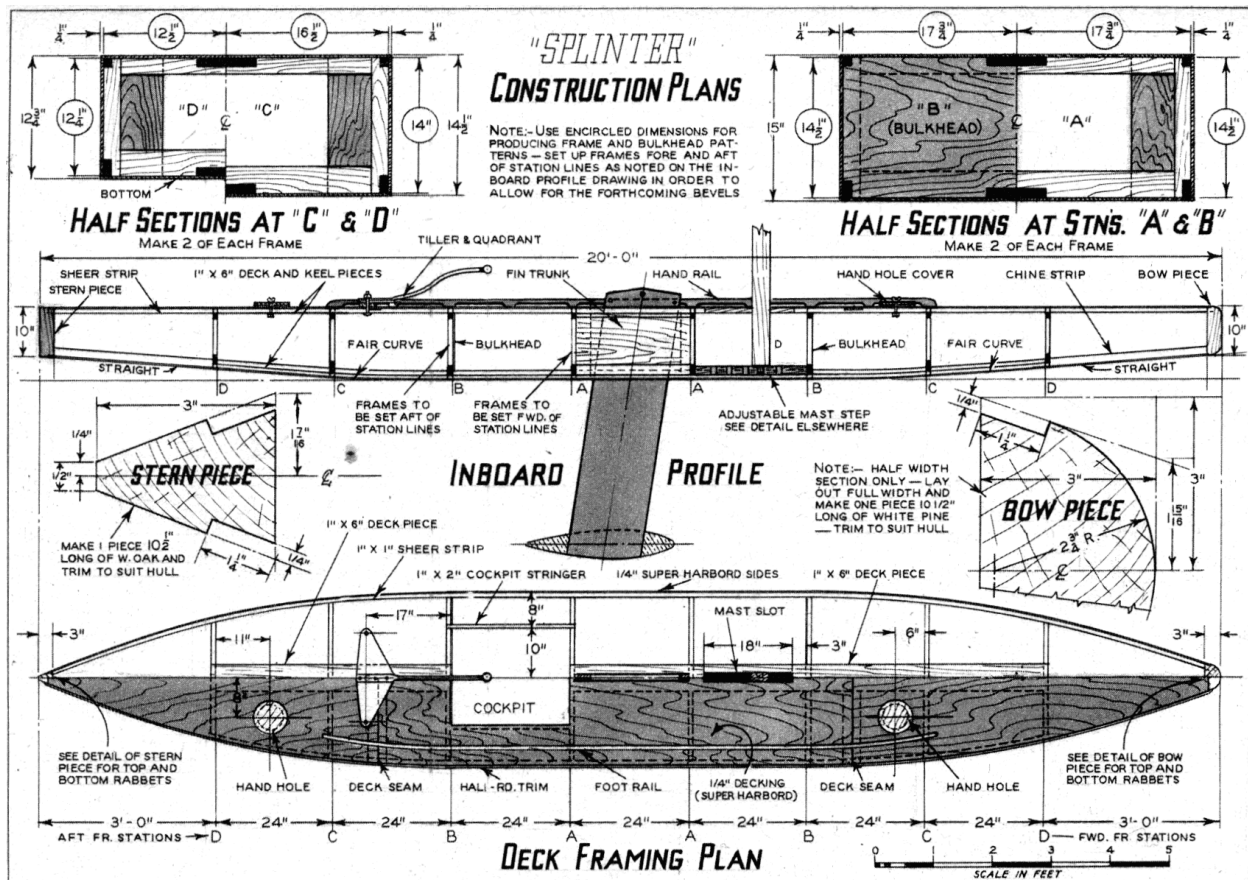
"SPLINTER"

SAIL PLAN & RIGGING DETAILS



Although the sail area is comparatively small, the modern rig and long, narrow, shallow hull make *Splinter* a fast stepper. Watertight bulkheads fore and aft render the hull unsinkable despite the steel and lead fin. Trunk for the latter should be bedded down in canvas and marine glue or a special waterproof adhesive (see text).





The mast moves in a slot through the deck, resting in a step with five mortises, making it possible to adjust the rig for best trim. Note simplicity of framing, an easy construction job for even a beginner.

Chines and sheers may now be bent in. In assembling the frame carefully bevel all of the edges as required paying particular attention to the watertight bulkheads so that no leaks will occur at these points.

Split the 10' sheets of 1/4" Super-Harbord in half lengthwise, and temporarily fasten them along the sides of the frame with one edge resting on the floor. This edge will be the sheer line, as the boat is built upside down. The chine line is marked on the sheet and the plywood removed and sawn to this line. An efficient butt is made a little ahead or behind midship, depending on where the edge of one 10' sheet will fall. The excess from the other sheet is used to form the butt block. The latter is generously smeared with marine glue and fastened with 3/4" copper tacks clinched on the inside. Small holes should be drilled for the tacks, and if an old flat iron is held on the inside before driving, they will turn themselves back into the plywood. The skin is fastened to chine and sheer with 3/4" No. 8 brass screws, spaced on 3" centers. The bottom sheets are laid in like manner, starting with a 6' sheet, following with an 8' sheet and ending with another 6' sheet. This is done to stagger the joints so the boat will not have a weak spot. Chines must have been planed down so that the sheets lay flat all along their length. The bottom is finally planed even with the sides, and the boat can be removed from the floor and turned over.

The slot is now cut for the fin trunk and the strip which will frame the deck forward and aft of the cockpit is installed. The trunk can next be made and installed, as shown. The sheaves should be placed before the side of the trunk is finally fastened, and all joints laid in Miracle Adhesive or marine glue. The mast step comes next, and its construction and installation is clearly shown in the drawings. The whole interior is then painted with aluminum paint. Lay the deck plywood, following the same procedure as on sides and bottom. As there is no way of painting the space inside the watertight compartments the sheets should be painted on their undersides before

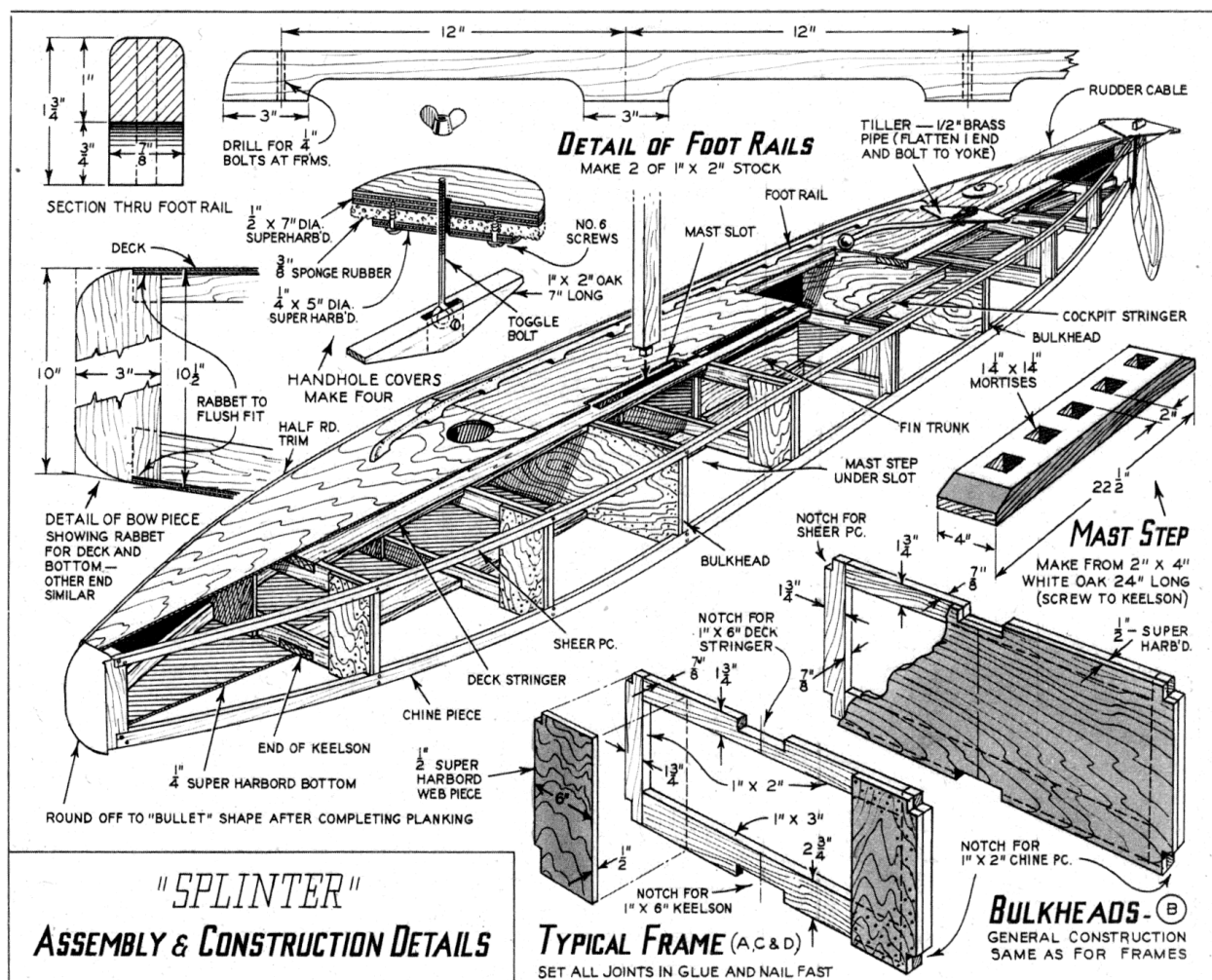
fastening. The cockpit is cut through the sheets of the deck. It is 20" wide and runs from frame "A" aft of midship to the aft watertight bulkhead. It is only large enough for the skipper to get his feet in, the crew riding the deck.

The sheer trim is applied and top and bottom of the bow piece are rounded off to form the bullet nose which makes this craft look distinctive. Deck gadgets are foot rail are placed as shown on the plans. The hole for the mast is cut as a slot from 3" forward of the trunk to 3" aft of the bulkhead. The mast can thus be moved along when tuning up the boat, to get the best balance.

The rudder is made from 1" oak, with edges fined down very thin. The rudder yoke and tiller yokes are cut from 1/2" Super-Harbord to the shape shown. Mortise the rudder head through the yoke reinforce with two steel angles. Make the tiller from a piece of 1/2" dia. brass pipe with one end flattened. The brass should be heated to a cherry red and plunged in cold water to anneal it before the flattening is attempted. A metal or wooden ball on the forward end will dress it up a bit. The yokes are connected with 1/8" flexible wire rope with petit turnbuckles taking up the slack. The rudder is either hung on regulation pintles and gudgeons or on large screw eyes with a rod run between them.

Mast is a piece of 2"x4" spruce with edges rounded, or it may be made hollow if preferred. The boom is solid, tapered for a third of its length at each end (see drawing). Both mast and boom are equipped with 5/8" sail track.

The fin is 3/8" steel plate cut to the dimensions shown. The bulb looks complicated but will present no great difficulty. A pattern is first made. Every section through the pattern is a perfect



half circle. The pattern may be of wood or modeled in clay or plaster of Paris. After hardening, if moulded, it is given a coat of hard grease. If wood, it is shellacked and greased. A box is then made to enclose it and the pattern placed on a flat board.

Plaster of Paris or clay is moulded around it inside the box. After the mould has "set," the core is removed and the shell filled with molten lead and allowed to cool. As the cooling progresses a little more lead is added to make up the shrinkage. The whole casting is finally slicked off by wiping off the excess partly cooled metal with a wooden straight-edge. The fin is drilled and each half of the bulb is drilled to match it. Copper rods about 3/8" in diameter are forced through the holes and the ends bent over and driven down into the surface of the lead. The projecting ends of the bulb are bent together until they touch and clay placed at the bottom of the crack, which is then filled with molten lead. Give the fin several coats of red lead and when dry paint aluminum.

The boat is rigged with 1/8" stranded wire rope for all stays. The fin has a tackle rigged to the point where the shrouds attach to the mast so that it can be hoisted when the boat is brought ashore.

Bill of Materials, SPLINTER

LUMBER

Chines—2 pieces 1"x2"x20' 0" spruce (trimmed size, 7/8"x1 3/4").
 Sheers—2 pieces 1"x1"x20' 0" spruce (trimmed size, 7/8"x7/8").
 Keel and Deck Piece—2 pieces 1"x6"x14' 0" spruce.
 Frames—1 piece 1"x3"x18' 0" spruce, untrimmed.
 2 pieces 1"x2"x16' 0" spruce, untrimmed.
 Bow Piece—1 piece 3"x6"x12" w. pine (exact size).
 Stern Piece—1 piece 3"x3"x12" w. oak (exact size).
 Cockpit Strainers—1 piece 1"x2"x52" w. oak (trimmed size, 7/8"x1 3/4").
 Mould Trim—40 lineal feet 1" half round oak.
 Trunk—2 pieces 3/4"x3/4"x24" w. oak (exact size).
 1 piece 3/4"x2"x14 1/2" w. oak (exact size).
 1 piece 3/4"x2 3/4"x14 1/2" w. oak (exact size).
 2 pieces 3/4"x2 1/4"x24" w. oak (exact size).
 Mast—1 piece 2"x4"x20' 0" spruce, untrimmed.
 Boom—1 piece 1"x3"x8' 0" spruce untrimmed.
 Rudder—1 piece 1"x10"x3' 0" w. oak (exact size).
 Marine Plywood.
 Sides—2 pieces 36"x10' (split lengthways to use).
 Bottom and Deck—4 pieces 36"x6'—1/4" size.
 2 pieces 36"x8'—1/4" size.
 (Use waste for side, bottom and deck seams.)
 Frames—11 feet 1/2"x36" (split lengthways to use).
 Yokes—Use residue from frames; hand hole covers, etc., likewise.
 Also one piece 2"x4"x24" white oak for Mast Step.

HARDWARE

2 petit turnbuckles for 1/8" wire rope.
 5 turnbuckles, 1/4" size.
 2 deck fittings for fore and back stays.
 1 ring plate for mainsheet block.
 2 chain plates for shrouds.
 3—8' lengths of 5/8" sail track.
 4 single blocks to take 1/4" manila rope.
 2 double blocks for fin tackle.
 Rudder pintles and gudgeons as selected.
 Cleats and chocks as selected.
 2—1 1/2" dia. sheaves for trunk.
 Tiller—36" of 1/2" dia. brass pipe.