

# Storm Petrel

16' 4" x 5' 2"
----------------

I define seaworthiness as the ability to keep the sea in all weather in reasonable safety. Design and construction are only part of it. Quality of handling and gear are, if anything, more important. I admit to being skeptical about the possibility of designing a foolproof boat. If politicians and bureaucrats set out to produce one, the first thing that would happen is that boats would become more expensive without being much safer. When making boats expensive didn't get results, their use would be restricted, and we'd all end up locked in padded cells, where we'd be quite safe.

However that may be, what the designer *can* do about seaworthiness is to lay out the boat in such a way that it can roll over and over, be totally submerged, and end up right-side-up without a disastrous amount of water inside. He can also do a good deal to help the builder make it strong enough to withstand these things.

*Storm Petrel* is supposed to be the absolute minimum seaworthy boat. The overall dimensions are somewhat misleading, because more than four feet of the bow is just shrouding to protect the flat bow transom of a 12-foot scow. The *real* boat, the watertight part, is a 6½-foot decked-in refuge chamber with a 5½-foot cockpit running aft to sit on. Inside, there's just enough height to roll over if you're not too wide in the shoulders or hips (18 inches), with three feet under the hatch to allow upright seating on the bottom of the hull. There's no room for any amount of supplies; she wasn't meant for long passages. The idea is that if she got caught by bad weather offshore, she could do the corked-bottle act, protecting one or two people from the storm for a few hours or even a few days. I don't think there are many designs with that capability that can be built complete from eight 4-foot-by-8-foot sheets of ¾-inch plywood and little else.





there's weight in the wind. Contrarily, she could be thought of as a low-powered outboard skiff with an auxiliary rig to stretch her range and get her home when she has engine trouble. The hull shape and keel type are not the kind that would reward a very powerful sail plan.

In spite of its modest performance—maybe partly because of it—I think one could become very fond of a boat like this. For the materials and labor involved, she's remarkably able and roomy, both for family outings and for children to practice solo cruising. Incidentally, she's a very good-looking boat, to my eye.

## PRELIMINARY SPECIFICATIONS

1. Deck plywood with centerline butt and one thwartship butt as diagramed; these and all butt straps are  $\frac{3}{8}$ " x 4".

2. Deck edge fastening frame laminated or sawn to finish  $\frac{3}{4}$ " x  $1\frac{1}{2}$ ".

3. Deck longitudinal girders  $\frac{3}{4}$ " x  $2\frac{1}{2}$ " x 11' 10".

4. Cleats inside transom (to take deck and well sides)  $1\frac{1}{2}$ " square.

5. Hatch beams  $\frac{3}{4}$ " x  $1\frac{1}{2}$ ".

6. Footwell sides plywood, with  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " fastening frame at ends and bottom on outboard sides; cut to diagram, fair up, and attach to underside of deck.

7. Midship bulkhead plywood to diagram;  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " fastening frame; attach to deck and well sides.

8. Forward bulkhead plywood to diagram;  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " fastening frame at sides and top;  $1\frac{1}{2}$ " x  $2\frac{1}{2}$ " at bottom; attach to underside of deck and brace plumb square with deck.

9. Transom plywood to diagram;  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " fastening frame and  $\frac{3}{4}$ " padding for motor about as shown; optionally, a drain hole near bottom to let water out of footwell—this should have a tight plug if used.

10. Hull sides plywood in three sections each as diagramed; assemble flat, with top edges forming a dead straight line, and spring around deck edges with lower edges flush with bottoms of bulkheads and transom; secure to deck and bulkhead edges and to each other at stem.

11. Stem beveled to diagram from  $1\frac{1}{2}$ "-square stock.

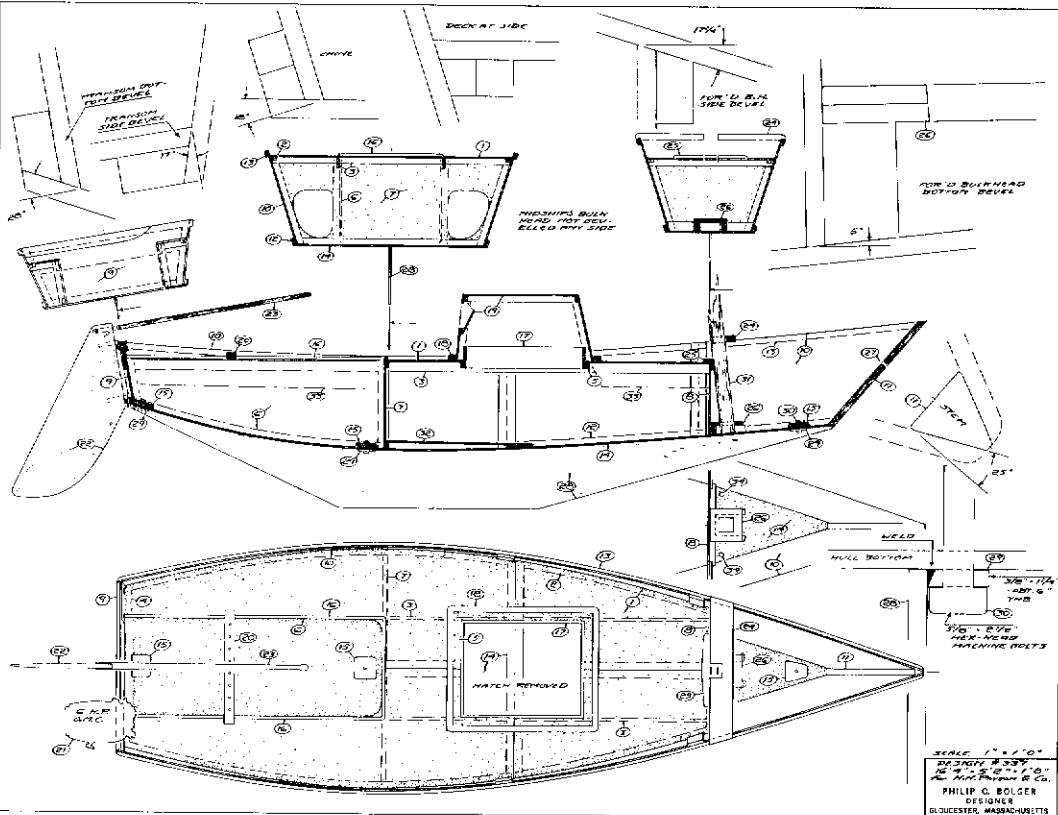
12. Chine logs in two courses as shown (to help take the sharp bend aft) to finish  $\frac{3}{4}$ " x  $1\frac{1}{2}$ ".

13. Clamps bent around assembled sides,  $\frac{3}{4}$ " x  $1\frac{1}{2}$ "; no edge set.

14. Bottom plywood fitted to sides as bent; one butt; take pains with glue and fastenings along chine joint, especially in way of cuddy.

15. Backing blocks for keel bolts about  $\frac{7}{8}$ " x  $5\frac{1}{2}$ " x  $5\frac{1}{2}$ ".

16. Footwell lip  $\frac{3}{4}$ " square.



17. Inner hatch coaming  $\frac{3}{4}$ " x  $5\frac{1}{2}$ ".

18. Outer hatch coaming  $1\frac{1}{2}$ " square.

19. Hatch plywood to diagrams; 6" square vent opening on after side with water trap inside as shown; may have one or more clear plastic deadlights; must have latches and/or lashings to secure effectively both from within and from outside.

20. Tiller thwart  $1\frac{1}{2}$ " x  $2\frac{1}{2}$ " with holes for two pins to hold tiller.

21. Outboard motor, either side as preferred; reinforce transom as necessary for weight and power; three to six h.p. suggested.

22. Rudder three courses of plywood to finish  $1\frac{1}{8}$ "; fair off to  $\frac{3}{8}$ " edge and round off, on underwater edges; stock pintles and gudgeons, or four eye-bolts and a rod through all; if pintles are used, make the lower one at least 1" longer than the upper one.

23. Tiller from  $1$ " x  $1\frac{1}{2}$ " x  $4'0$ ";  $\frac{1}{4}$ " x  $1$ " x  $1'3$ " stainless straps to take  $\frac{1}{4}$ " bolt through rudderhead.

24. Mast partner thwart  $1\frac{1}{2}$ " x  $5\frac{1}{2}$ " with slot on after side to take the mast.

25. Cleat on top of deck from  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " x 1'6", to bear against after side of mast when stepped.

26. Mast step double  $\frac{3}{8}$ " x 8"-square plywood, mounted on bottom frame of bulkhead and on  $1\frac{1}{2}$ " x  $2\frac{1}{4}$ " cleats fastened from bottom.

27. Hole for painter about  $\frac{3}{4}$ " diameter, well rounded off at each end.

28. Keel  $\frac{3}{4}$ " steel, dimensions as given to weight about 170 pounds; best galvanized or zinc-sprayed; second best, sandblasted and epoxy-coated.

29. Welded tabs (or welded or bolted angle irons) to take keel bolts  $\frac{3}{8}$ " x  $1\frac{1}{4}$ " x 6".

30. Stainless steel (preferably) machine bolts  $\frac{5}{8}$ " x  $2\frac{1}{2}$ " hex-head (may be smaller and still be strong enough); drill for bolts close enough to fin side so the bolt heads, outside, can't turn.

31. Mast  $3\frac{1}{2}$ " square at partner, round above; taper as noted; about  $\frac{3}{4}$ " halyard hole and score both sides to form a dumb sheave at head.

32. Cuddy floorboards: use whatever is left of the eighth sheet of plywood; lay in two sections, with seam fore and aft for sponging bilge.

33. Urethane foam buoyancy blocks, to total about 5 cubic feet aft and 3 cubic feet forward, chocked and/or battened under deck about as shown; with this amount and location of foam, the boat will be stable enough to be sailed completely flooded.

34. Forward well scuppers 1" diameter (this well is free-flooding).

35. Scupper clamshells as shown, or stock metal types, opening aft.

36. Yard 16'0" overall,  $1\frac{1}{2}$ "-square fir; stiffener  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " on forward (top) side starting about 3'6" from heel, 8'0" long; halyard and mast; loop about as shown.

37. Boom 12'1" overall,  $1\frac{1}{2}$ " square; lash luff and foot of sail to yard and boom with separate ties, not a lacing.

38. Heel guy  $\frac{1}{4}$ " Dacron, fast to end of boom, led back around mast and forward again to cleat on side of boom.

39. Sheet  $\frac{1}{4}$ " nylon, spliced around boom; lead straight to hand for trial; later put a cleat for it where handy, such as on bulkhead low down.