

Building the Shellback Dinghy: Part I

by Eric Dow
Photographs by Sherry Streeter

An easy lesson in lapstrake-plywood construction

In 1984, we asked Joel White, Brooklin's resident naval architect and boatbuilder, to design for us a simple, seaworthy, beautiful plywood tender, the result of which was the Nutshell Pram in two versions. So highly successful was the Nutshell Pram in concept and construction that we simply put aside any thoughts of developing the ideas further. Fortunately, however, Joel White could not resist experimenting further himself, and he proceeded to design a skiff-bowed boat, built exactly the same way, and a bit longer overall, for those who might need or want such a boat. It was a solid, if quiet, success, and a number of boats have been built in Brooklin and elsewhere.

As a modern, all-around small boat, or an easily cared-for tender, we think the Shellback would be pretty hard to improve upon. A skilled builder can construct the sailing version in about 100 hours from scratch, and a kit version is available which goes together in considerably less time. As a teaching tool, the

Shellback provides an education in the fine points of sailing, rowing, and sculling for sailors of all ages, her standing lug rig easily dropped altogether if the winds come on too strong. She is not easily adapted to outboard power, primarily because the weight of the motor throws her fine hull out of trim, but she rows well enough to provide plenty of efficiency and speed, even with a load. Finally, she can be decorated with as much or as little varnish as you like, and she lends herself to a variety of paint schemes. Her removable seats and single 'midship frame make her interior uncluttered and easy to clean or refinish. She is distinctive enough in appearance to attract admiration at every turn, a unique blend of traditional design and modern wood construction. If you choose to embark on the construction of a Shellback, we think you'll find the entire experience thoroughly gratifying, especially with Eric guiding your way.

—Jon Wilson

Materials List

Bottom from one sheet (4 x 10') of 1/2" (12mm) mahogany plywood (SNBCC, Bruynzeel, or equal in quality). Rudder blade, daggerboard, and trunk sides will come out of the remainder of this sheet.

Side planks from two sheets (4 x 12') of 1/4" (6.5mm) mahogany plywood (SNBCC, Bruynzeel, or equal). Rudder and tiller cheek pieces will come from remainder.

Stem from 14 pieces 1/8 x 1 3/4 x 42" fir or mahogany strips to laminate as shown. Finished siding to be 7/8".

'Midship frame from enough 1/8 x 1/8" fir or mahogany strips to laminate as shown. Finished siding to be 7/8".

Transom from 3/4" (18mm) mahogany plywood as above. Requires piece 18 x 36".

Seats from 38", 40", and 50" long pieces of 1 x 8" cedar or pine.

Guardrails from two pieces 5/8 x 1 1/4" oak or mahogany, 12' long. Inwales (optional) from oak or mahogany 1/2 x 1/2 x 12".

Knees and breasthook from enough 7/8 x 6" mahogany to make four knees and two breasthook pieces.

Seat support blocks from 1 1/2" x 2 1/2" x 5' mahogany.

Keel/skeg from 7/8" x 5" x 10' mahogany.

Daggerboard trunk logs from one piece 1 1/8 x 1 3/4 x 27" mahogany.

Daggerboard trunk posts from one piece 9/16 x 1 x 25" mahogany.

Maststep from one piece 1 1/2 x 3 1/2 x 6" oak or mahogany.

Tiller from one piece 7/8 x 3 x 42" mahogany or oak.

Spars:

Mast from one piece 3" x 3" x 10' spruce; may be glued up from two pieces of 2 x 4" clear spruce.

Boom from one piece 1 3/4 x 1 3/4 x 10' spruce.

Yard from one piece 1 3/4 x 1 1/2 x 9' spruce.

Oars: One pair 7 1/2' spruce or ash oars.

Oarlocks and sockets.

Rudder hangers: One set suitable hardware, available from: The WoodenBoat Store or The Anchorage.

Painter from at least 15' of 3/8" Dacron rope.

Halyard, sheet, and traveler from about 55' of 1/4" Dacron rope.

Two 3/4" round brass thimbles or small blocks, three small bronze or stainless eye straps,

one #1 bronze snaphook.

Belaying pin: 5" long, from oak, locust, or bronze.

Epoxy glue.

Paint and sandpaper.

Chafing strip: 1/2" half-oval brass; about 12 1/2' needed.

Fastenings: all bronze

Wood screws: 3/4" #8 FHWS plank to guardrails; 1" #8 FHWS plank to transom, stem, and frame; 1" and 1 1/4" #10 FHWS bottom to keel; 2" #12 FHWS seats to support blocks; 3/4" #6 FHWS chafing strip to keel and stem; 1 1/2" #10 FHWS transom to knees; assorted screws as needed.

Machine screws: One 1/4 x 4" bottom to keel; six #10 x 1" rudder hanger to transom; sixteen #10 x 1 1/4" oarlock sockets to guardrail; two 1/4 x 2 1/2" maststep to bottom.

Tools

Claw hammer

Block plane

Smoothing plane

Spokeshave

Butt chisel, about 3/4"

Crosscut handsaw, fairly fine

Hacksaw

Tape or folding rule

Framing square

Combination square

Sliding bevel square

Spirit level

Set of twist drills in sizes to 1/4"

Countersink

Small electric drill with 1/4" or 3/8" chuck

C-clamps, about a dozen 4" to 6"

Sharpening stone for edge tools

Manual screwdriver—the type of your choice as long as its bit fits the screw slots

Pencils

Wood rasps

Mill file (for metal)

Putty knife

Scraper

Center punch

Optional tools that will make the job go more quickly

Bandsaw

Sabersaw

Electric drill press with 1/4" or 3/8" chuck

Variable-speed electric or cordless drills for drilling holes and driving screws; two will make the job go faster

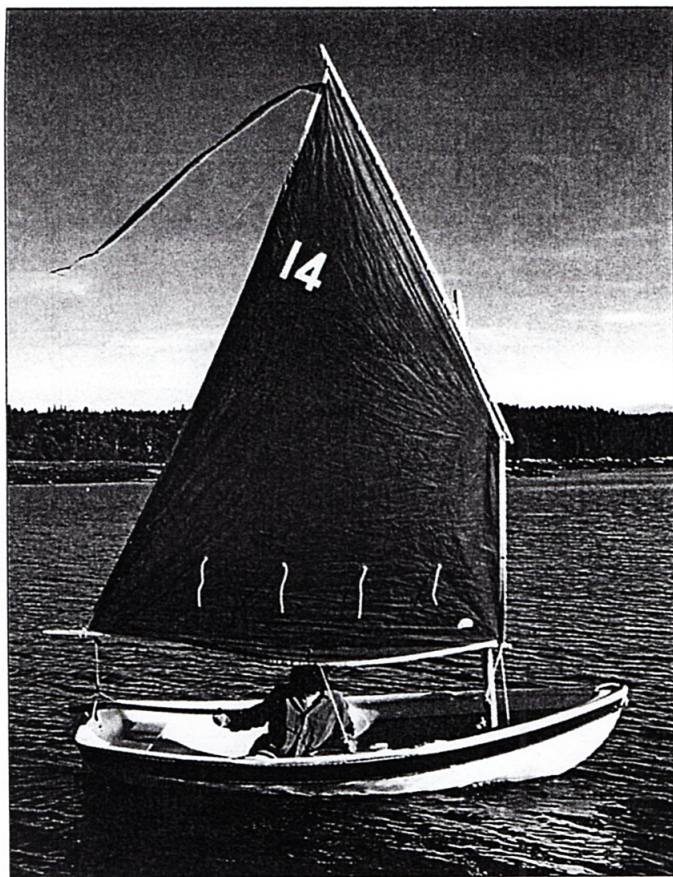
Regular and drywall bits for drill/screw gun

Portable electric plane

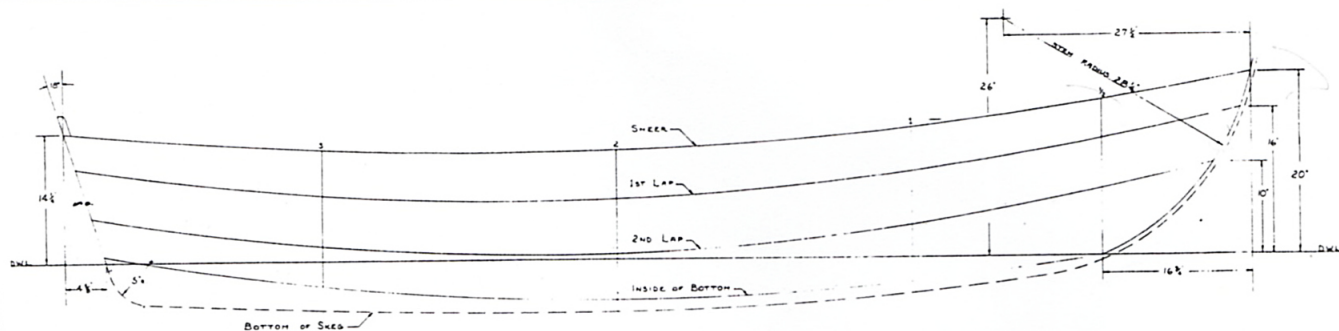
Bench grinder (for sharpening edge tools)

Combination taper drills/countersinks for the screw sizes used

The Shellback is a spirited sailing dinghy that also offers good performance under oars.



Lines and Offsets



Shellback Particulars

LOA 11'2"
Beam 4'5"
Draft 6'6" (dbup),
2'3" (db down)
Weight approx. 100lbs
Sail Area 56 sq ft

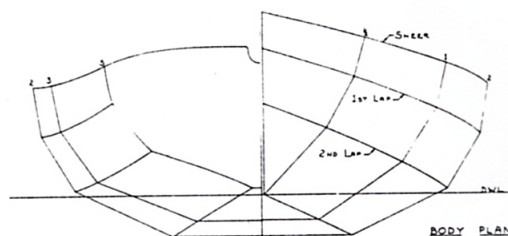


TABLE OF OFFSETS					
	1/2	1	2	3	OVER FACE TRANSOM
SHEER	17 1/2"	14 1/2"	12"	12 1/2"	14"
1 st LAP	12 3/4"	9 3/4"	6 3/4"	7 1/2"	10 1/2"
2 nd LAP	7 3/4"	3 3/4"	3 3/4"	1 1/2"	4 3/4"
BOTTOM	0"	-2 1/4"	-4 1/4"	-2 1/4"	1/2"
HALF SHEER	11 1/2"	20 3/4"	25 1/2"	23 1/2"	17 1/2"
1 st LAP	10 3/4"	19 3/4"	24 3/4"	22 3/4"	16 3/4"
2 nd LAP	7 3/4"	15 3/4"	20 3/4"	18 3/4"	2 1/4"
BOTTOM	1/2"	6 3/4"	10"	7 3/4"	1"

OFFSETS TO WARD OF PLANK AND BOTTOM, OUTSIDE OF TENSION FACE. THESE ARE CORRECTED OFFSETS TAKEN FROM HOLDS & PATTERNS. BASE IS DWL (DESIGNED WATER LINE). HEIGHTS ARE ABOVE BASE EXCEPT - INDICATED BELOW BASE.

