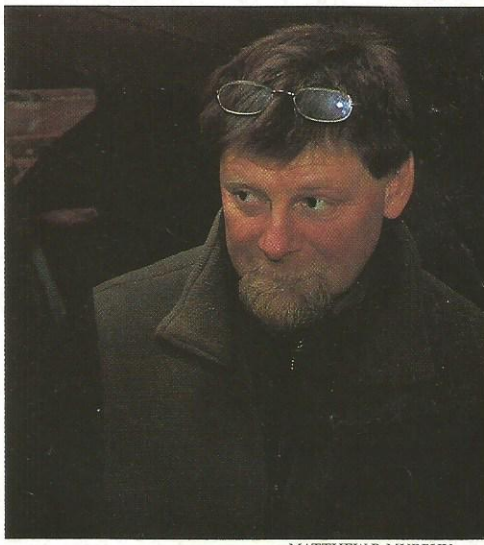
An Innovative Builder of Traditional Boats

BENJAMIN MENDLOWITZ

In building the John Alden–designed schooner HERON, Twig Bower (right) employed a variety of jigs and machines that saved time while providing a superb level of fit in the structural joinery. Frames and backbone are of angelique; planking of angelique (from the keel to the turn of the bilge) and wana.



MATTHEW P. MURPHY

Twig Bower and the schooner HERON

by Matthew P. Murphy

Nigel "Twig" Bower tells the story of the time a new worker arrived at his Camden, Maine, boatshop, hired to help with the construction of Twig's Alden-designed schooner, HERON. There was something different about the Bower shop, and the new guy registered this fact when he asked Twig if there was a bench where he could set up his hand tools: chisels, planes, saws, spokeshave, drawknife. "There really isn't," Twig, his expression suddenly amused at the memory, recalls replying. "We do everything with routers and shapers."

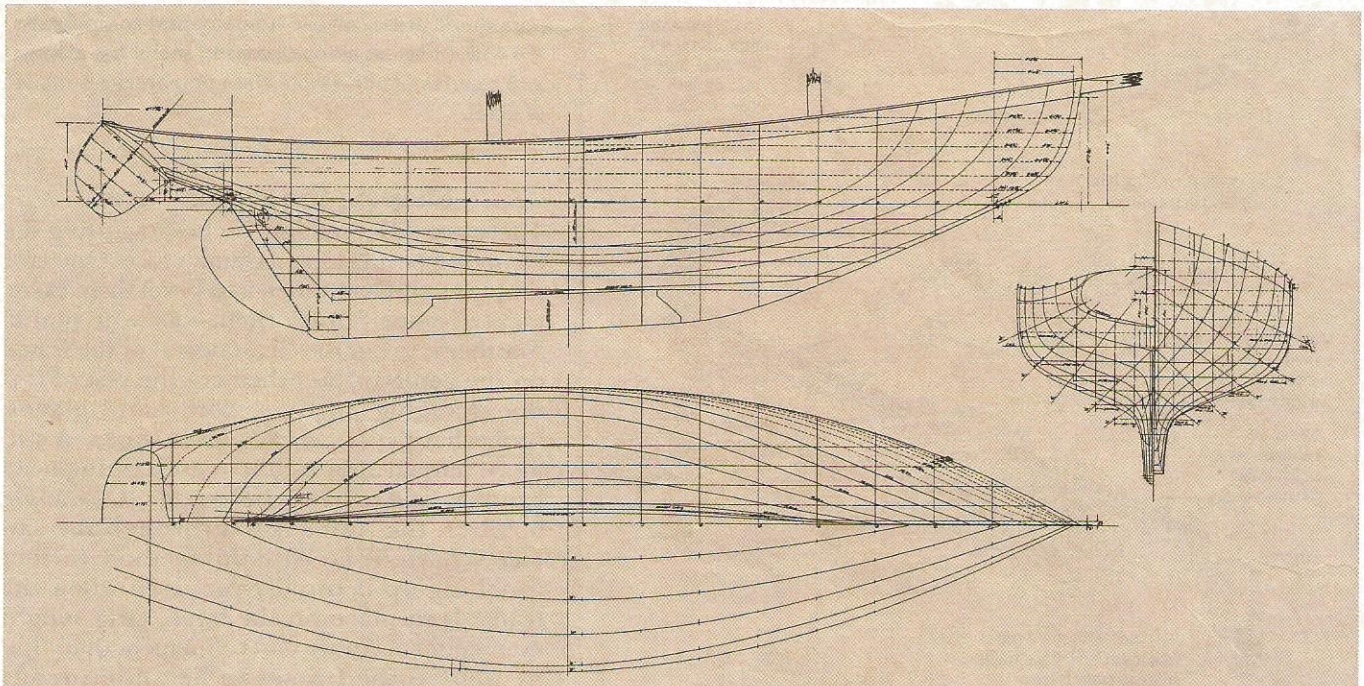
When one examines certain elements of Twig's life—built his own house in Maine; builds and rebuilds plank-on-frame wooden boats; spent his youth hitchhiking and sailing—it would be easy to rush to the conclusion that this man is rooted in the past, believing that the principal processes of wooden boat building laid down so long ago are today unalterable. Such a conclusion would not only be wrong, but it would also overlook the essential nature of Twig Bower.

"He is an innovative builder of traditional boats," Sam Manning told me, carefully measuring his words. Sam, the renowned marine illustrator, is a neighbor of Twig's, and we were en route to the builder's shop to discuss the elements of HERON's construction—elements that add up to a structure whose joinery not only rivals that of fine furniture, but was also remarkably efficient to execute.

HERON was only half planked in January 2003, yet she was sailing the following July. "Tuck to topsails in eight months!" Twig likes to say. In the following, he shares some of the processes—some of his own invention—that contributed to the efficiencies of HERON's construction.

Computer Lofting

HERON's lines were computer lofted on Mylar film. Lofting—the process of drawing a boat's shape full size—is the first step of construction. It verifies that the lines are fair, and it yields full-sized patterns for the hull's myriad pieces. Choosing to loft the boat by computer was vitally important to the project's efficiency. "Just making up the battens to loft a boat that size—and getting the floor and all the rest of it set up—you can spend a thousand dollars pretty quickly," notes Twig. The Alden office, he says, "was able to loft the whole boat for a thousand bucks," which put the project "way ahead" at an early stage. The financing of HERON's construction was tight, and Twig was ever aware of the need to "reverse the cash flow." While the boat was being lofted, he was able to work on a paying job—part of a phased rebuilding of the 47′ (LOD) Crosby schooner OLAD.



JOHN G. ALDEN, INC.

The first step in the efficient construction of HERON was to ask the Alden design office for full-sized computer-generated lines printed on Mylar film. Although a fair amount of manual lofting was still required, having the principal information on Mylar saved the builder substantial time.

Twig requested that the Alden office loft the long lines and each frame. The lofting of the boat's backbone, the ballast casting, and the rabbet consumed several weeks of Twig's own handwork. Still, he is unequivocal in his praise for the computer-lofting process: "Without a doubt, it still saves a lot of time." Most of the saved time was in the boat's frames, which were to be laminated. To accomplish this, an accurate sectional shape would be required for each of the 55 frame pairs. "That's quite a bit of work," notes Twig of drawing the shape of each frame by hand. Assured of the computer's accuracy by the Alden office, Twig says that he "was pretty convinced that I could trust these lines. I was really looking to be able to just take laminated pieces off the lofting and put 'em through the shaper to bevel them [see below] and stand them up."

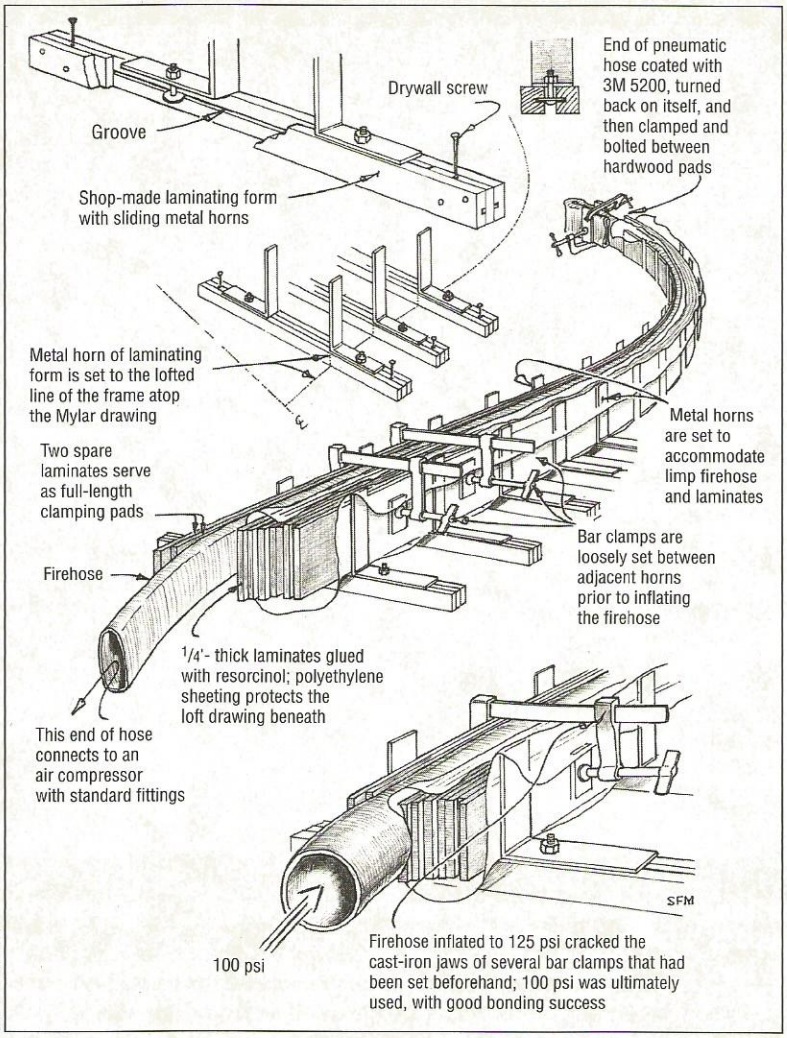
Laminated Frames

HERON's frames are laminated of white oak glued with Aerodux 500 resorcinol (see WB No. 147) and clamped in a pneumatic press. The first step in efficiently making these was to order already-milled ¼" laminates, rather than mill all of this stock in the shop. Twig bristles at the thought of the labor and mess that would be involved in doing the milling on site.

After Twig had resolved to laminate the frames, a visitor to the shop suggested that he consider a pneumatic clamping system. The usual approach to laminating frames would involve applying glue to all of the faying surfaces of the laminates, and then clamping them to a form with bar clamps. Unlike epoxy, which is gap-filling, resorcinol requires wood-to-wood mating. This, in the laminating of frames, calls for lots of pressure, evenly applied—which in turn calls for as many clamps as possible...or, a firehose.

Imagine a blood-pressure cuff, the Velcro-fastened band the doctor wraps around your upper arm during a checkup. It's always a bit shocking to realize how much force the thing exerts when its inflation is halted just short of discomfort. The pneumatic frame-laminating press works on the same principle. The cuff is replaced with a length of firehose which, rather than being wrapped and Velcro-fastened around an arm, is laid flat along the side of a glued-up frame. A few sacrificial laminates lie along the side of the firehose opposite the frame, serving as a full-length clamping pad. The whole thing, looking like a firehose sandwich, with thick-sliced bread on one side and thin-sliced on the other, is bent to formers of steel angle iron and lightly clamped in place over the lofted frame. The firehose, plugged at one end by rolling it over on itself and clamping it tightly between wooden blocks, and equipped with a pipe fitting that allows connection of an air hose at the other end, is inflated by an air compressor. Twig figures the resulting force on each individual bar clamp at around 2,400 lbs, but an empirical observation provides a better illustration of the inflated firehose's clamping power: Several of those heavy bar clamps that held the frame-and-firehose sandwich to the forms actually tore, like cardboard, along the slot where the clamp's bar slides through the lower jaws. Try doing that by turning a screw clamp by hand!

With the whole affair tented and heated to about 80°F, the glue cured in a couple of hours, making way for several frames to be made in a single day. Frame pairs were laminated as single double-wide pieces, and then ripped into two identical twins.



SAM MANNING

HERON's frames were laminated in a shop-built pneumatic press, whose fundamental components are a firehose, an air compressor, many bar clamps, and a series of adjustable clamping brackets made of steel.

The pneumatic press requires great caution: On one occasion early in the frame-making phase, when Twig was experimenting with a glued and hose-clamped wooden plug in the end of the hose, the plug let go, blowing a hole through the shop wall.

The frames were made directly on top of the lofting. The laminating form consisted of angle brackets that could be slid into position along the frame's curve, and then firmly dogged in place with drywall screws. This procedure revealed another great benefit of computer lofting: replaceability. When setting up for making frames, Twig accidentally spilled water on the Mylars, ruining that copy of the lofted lines. A simple phone call yielded a clean duplicate.

How good are the glue bonds in these frames? If a fire test means anything, they are very good. Twig burned offcuts in the shop's woodstove, and notes that, even when these were reduced to embers, the laminates remained tightly joined. And there is a belt to go with these suspenders: The laminates are captured at the frame heels (see "Dovetailed Frame Heels..." below), then with through-fastenings at two bilge stringers, and finally at the sheer clamp. Delamination is not a worry.

The curves of the frames were exact matches of those on the lofting, though the frame faces still required beveling on both sides so that the hull planking and ceiling planking would lie tightly to them. But how to accomplish this efficiently?

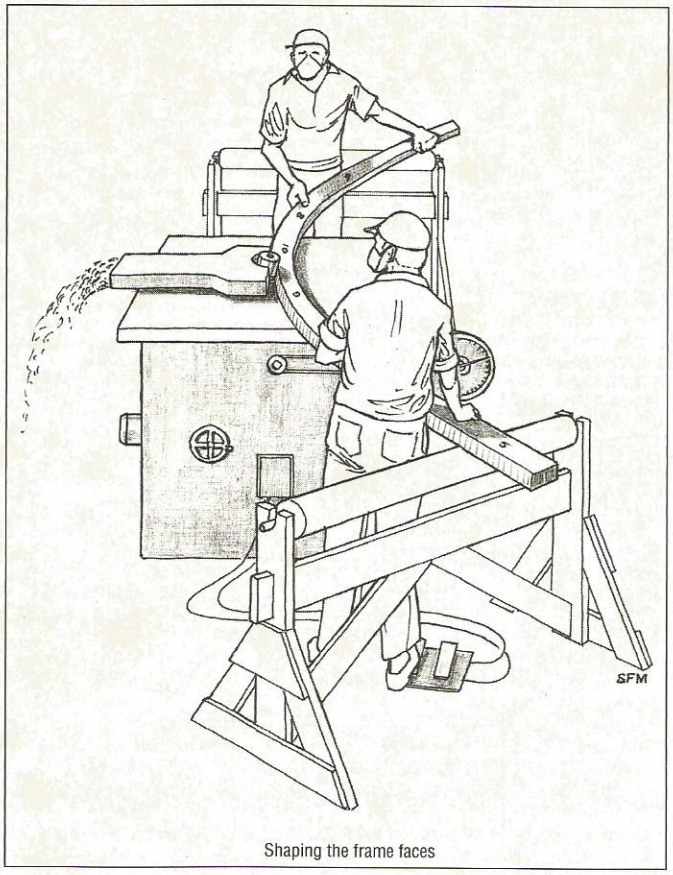
Shaping the Frame Faces

There are different approaches to cutting the changing bevel along a frame's face. One is to simply set up the frames, and bevel them incrementally—or "dub" them—as you plank. Another is to cut the "least bevel" of the frame on the bandsaw, and then cut the rest of it—the changing portion—with hand planes, spokeshave, adze, or whatever works. A still more refined approach is to use a tilting-head bandsaw, and to have a helper adjust the angle of tilt as the frame is fed through the saw (see WB No. 124). With this method, further touching-up is usually required when the frame is in place on the boat. Twig sought even better accuracy and refinement than this; he wanted the frames to be all-but-ready to plank once they were set up on the keel. To achieve this, he adapted the bandsawn changing-bevel approach for the shaper. This yielded smooth, accurate inner and outer faces on the frames.

Twig's shaper has a tilting arbor which, when the machine was fresh out of the box, was controlled by a hand crank. He replaced this hand crank with a slow-turning, geared-down, and reversible electric motor controlled by foot pedals. The shaper bit was a carbide-tipped straight-cutting one, with a roller bearing on the bottom. The cutter's angle of tilt was registered in degrees on an accurate gauge that Twig built onto the machine. The amount of bevel to be cut on the frame was noted at various points along the curve, and the piece was fed slowly and steadily through the machine. While one person fed, a helper adjusted the amount of bevel by operating the foot pedals. With practice, and by the builders anticipating the amount of change in the bevel as they fed a piece through the shaper, this technique yielded frames whose machined faces required little—in many cases no—further work before planking.

Dovetailed Frame Heels and Backbone Timber Joints

One day, during the first winter of HERON's construction, Twig Bower stood back, looked up at the boat, and remarked a bit incredulously, "There's only half a box of screws holding this whole structure together!" Where there typically might have been bolts or screws, Twig had instead used machined dovetail joints. The remarkably tight fits and strength of these connections might lead one to immediately conclude that an inordinate amount of labor was invested in them. In truth, an inordinate amount of thought was invested in them up front, but once the processes were established and the jigs made and fine-tuned, these precise fits were accomplished much more rapidly than hand-cut ones.



SAM MANNING

Shaping the frame faces

Both the inner and outer faces of HERON's frames had to be beveled to accept planking. This was accomplished by running the pieces through a shaper—one whose tilting head could be adjusted while the frame was fed past it.

And, Twig is convinced that the machined fits exceed the accuracy of what he can accomplish by hand.

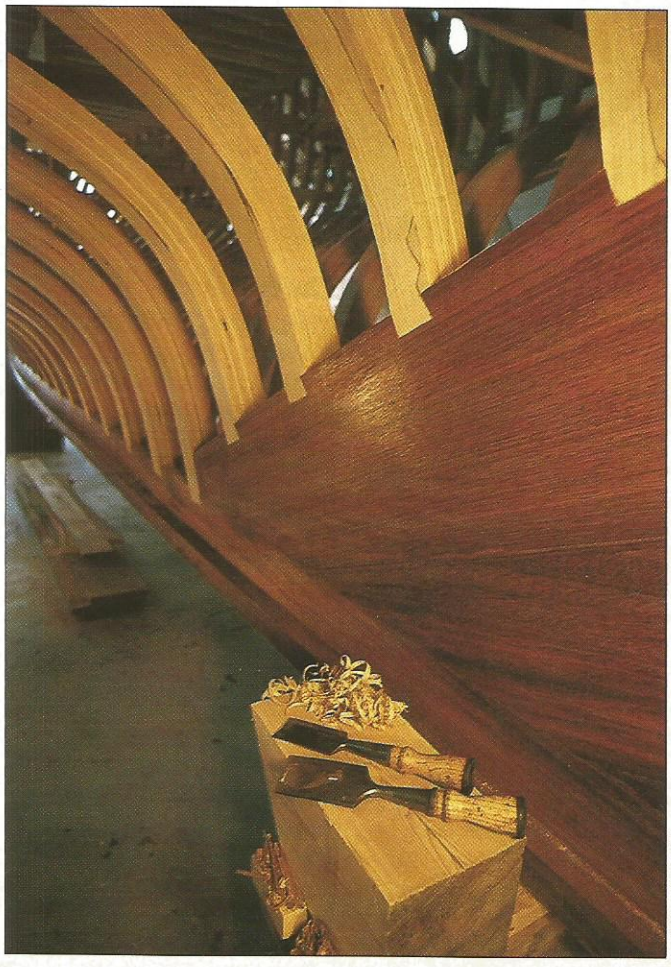
HERON's frame heels are joined to the keel with dovetails. This concept is not a new one; in fact, the 1928 schooner OLAD, whose rebuilding Twig had recently completed, had half-dovetails in this location. One can presume, however, that these were hand cut. Twig's plan was to cut his with a jig-guided router.

If a frame, with its lower end simply squared off, were stood in its correct position on the wood keel, its lower end would not fit tightly to the top of the wood keel; for a tight fit, a compound bevel is required on the heel of the frame. As is usual, Twig lifted the marks for this cut from the lofting and transferred them to the frame. But, to accommodate the dovetail, the marks for the compound bevel were slid down the frame by the depth of the dovetail. Twig then simply made the cut with a circular saw, marked the soon-to-be cut dovetail on the frame's end, and turned to the router and a shop-made jig to cut it.

The jig is best described in concert with Sam Manning's drawing on page 96, which illustrates a similar process for fitting deckbeams to a carlin. It consists of a plywood "table" with an ample cutout in it to accommodate the business end of the router. Two ears are fixed at 90° to the table's base; these are for clamping the jig to the frame's sides, which is done once the top of the table is set flush to the cutoff end of the frame. Then the router, equipped with a dovetail-cutting bit, is run by either side of the frame heel, controlled by a guide that bears against the straight edge of the jig's plywood table. This edge-bearing guide is equipped with a micro-adjustment knob, so Twig was able to "sneak up" on his marked-out dovetails, rather than attempt a finished cut in a single pass.

If you followed the above, then the process of cutting the dovetail sockets in the keel timber will easily fall into place: a similar jig, without the clamping ears, is clamped against the keel's surface, and the same bit used to cut the dovetail "pins" in the frame heels cuts these sockets in the keel timber. Anyone familiar with router work will realize that there's still a bit of cleanup to be done by hand, for the two corners of the sockets will be left with a radius that will require squaring up with a chisel.

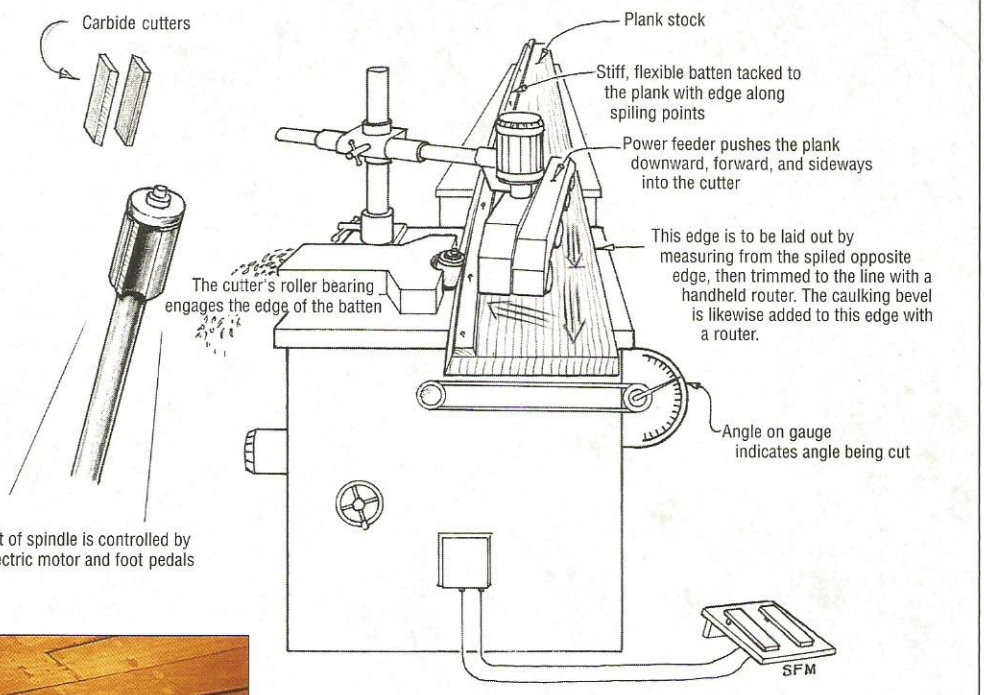
The backbone timbers and deadwood rely on similar connections. Sliding dovetails, for example, connect the sternpost to the keel. The knees in this assembly are likewise held with sliding dovetails cut across the joint. "I could take these posts out right now," said Twig of some of the props supporting the backbone structure and frames early in the project. "I don't want to, but I could. And I bet none of this would move."



ALISON LANGLEY

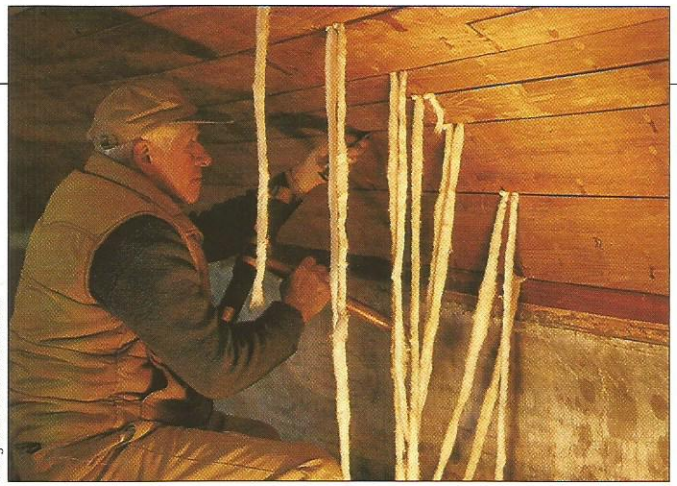
The heels of HERON's laminated frames were socketed into the keel timber with tight-fitting dovetail joints. To cut these by hand would have been time consuming; a router and two jigs made the process fast and accurate.

The rough-cut planks were trimmed to their exact dimensions and beveled in one pass through the tilting-head shaper. The caulking bevel was then cut with a router run along the square edge of the stationary plank, before hanging.



SAM MANNING

***Below*—Upon hanging, the machine-cut planks were ready for the skilled hands of veteran caulker John Maritato.**



BENJAMIN MENDLOWITZ

Shaper-Cut Plank Bevels

In order for plank edges to fit together tightly, they must be beveled; in order for them to be caulked, there must be a V-shaped seam between them—about ⅛″ wide on the hull's exterior, and tapering away to nothing about two-thirds deep in the seam. Hand-planing these changing bevels to a good fit is one of the great joys of wooden boat building, but it is also one of its more time-consuming and repetitive processes—especially on a boat of HERON's size, which has 24 planks per side.

To save time, Twig again turned to the shaper. He adapted the setup used for the frames, retaining the motorized tilting arbor and the accurate gauge that indicates the amount of bevel being cut. But for the long, gradual curves of the planks, he was able to use a power feeder.

Spiling—the process of determining a plank's shape (see WB No. 176)—yields a series of points on the plank stock's edge. When these points are connected on a new plank, the resulting curve should mate precisely against the neighboring plank. A common procedure is to cut to the line with a bandsaw or circular saw as close as one dares, and then to trim to that line with a plane; many shops now accomplish the trimming with a router or shaper, yielding a properly shaped but square-edged plank. The aforementioned beveling typically takes place at a long bench equipped with multiple vises to hold the plank on edge. The angles of bevel, recorded on a board, would constantly be checked and rechecked until satisfactory.

After rough-cutting it with a circular saw, Twig cut the plank's proper curve and its bevel in a single pass through the shaper. A stiff, flexible batten tacked to the plank, its edge intersecting the spiling points, provided a surface for the cutter's roller bearing to guide against. The amount of bevel, in degrees, was recorded incrementally along the plank. The plank began its journey past the shaper's cutter outdoors: it was fed into the shop through a small door cut into the end of the building, propelled past the cutter by the power feeder and held against it by fingerboards. As with the frame faces, the cutter head was tilted according to the bevels recorded on the plank stock—except that in this case the changes were more gradual and the resulting cuts flawless.

On the plank's opposite edge, Twig cut close to the line with a circular saw, and then used a router equipped with a straight-cutting bit to trim to the line; the router, like the shaper, was guided by a roller-bearing running against a batten, but in this case the tool moved while the plank remained stationary (these were big, heavy planks, and carrying them outside and turning them around for another pass through the shaper would have been inefficient). He then changed from a straight-cutting router bit to a slightly tapered one and, repeating the previous procedure, cut a caulking bevel along the plank's square edge. (On a previous boat, VELA, Twig used a custom-ground bit to cut the plank bevel and the caulking bevel on the shaper in a single pass.) The shaper-and-router setup yielded ready-to-hang planks.

Continues on page 75

BENJAMIN MENDLOWITZ

ALISON LANGLEY

HERON's rigging details are a blend of modern and traditional: the gaff foresail, set on mast hoops, carries full battens. Pedestal steering puts all charter passengers in front of the skipper, and provides a home for electronics.

Sailing HERON

One day last September, I joined Twig Bower and Bonnie Schmidt on one of their regular daysails in HERON out of Rockport. My expectations were high; for years their rebuilt 1946 Philip Rhodes–designed 40′ sloop, SHANTIH II, has been a pleasant fixture on this part of Penobscot Bay, beautifully sailed and trimmed with grinning passengers. I knew the couple valued their new Alden–designed schooner's performance nearly as much as her classic good looks, and wasn't surprised at the various ways they'd tweaked the original design to improve the former without messing up the latter.

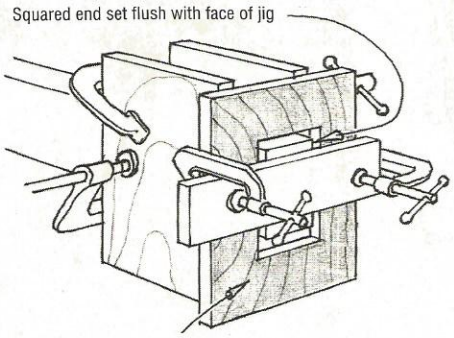
For instance, HERON's standing rig was vastly simplified over the original: doubled lower shrouds on the main replace running backstays, a jumper, and a triatic; the concentrated strain of the fixed backstay on the boomkin was ameliorated with a dolphin striker. The rig is thus cleaner than the original, tacking is easier, and there's unobstructed space for a fisherman topsail (which doesn't exist yet, except as a gleam in Twig's eye). Also, the schooner's steering system, instead of being a clunky fisherman-type worm gear housed in a seat box, is a sensitive Lewmar unit with a pedestal wheel; located well aft in the cockpit, it is better for chartering comfort and visibility than a worm drive, and the pedestal is the perfect home for electronics.

Most striking about HERON's rig is the way her main and fore are as fully battened as possible (the fore's battens are not quite full-length because the parrel beads can't take the pressure). Bower and Schmidt had gone to a fully battened main on SHANTIH II with good results, and were also encouraged in this direction by Alden's current chief naval architect, Niels Helleberg—who also encouraged, for better sail shape, the elimination of sail slides along the foot of both the main and fore. Bonnie and Twig got a chance to test the concept of fully battened sails, as the battens arrived in stages after the sails themselves. Bower says the battenless HERON dawdled to windward; the main battens helped, but it was the fore battens that really added power and balance.

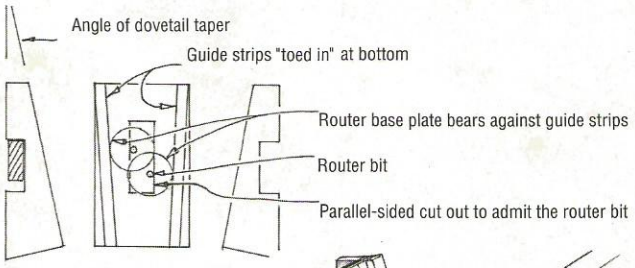
The power and balance, not to mention the quiet of full battens, were certainly evident the afternoon we headed out onto a Penobscot Bay that was lumpy with the remains of an offshore storm. HERON took the seas in stride, graceful as her namesake on a soar, needing only minimal instruction as she carried her way through tacks, and showing an amazing ability to climb to windward at speed. I was reminded of Helleberg's comment at the launching that this was "the best version yet" of the design, which had perhaps been Alden's favorite. He briefly owned one of the first ones, ROGUE, built in 1929, and bought another, ABENAKI, for his retirement; he took second in the 1950 Bermuda race with her.

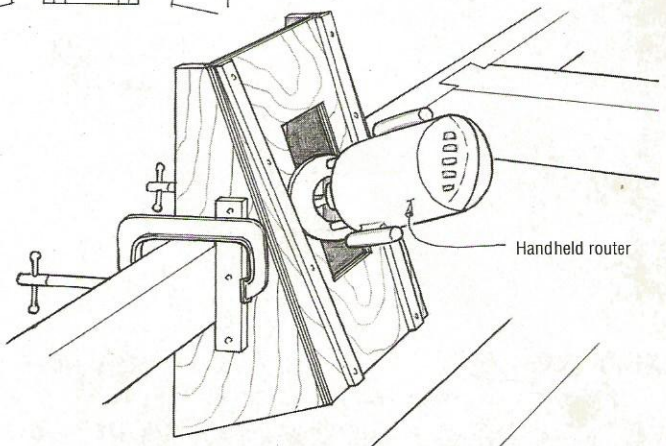
As HERON carried her 20 tons across the bay as lightly as a ballerina, I figuratively kicked off my local-boat-guy shoes to experience the moment from the perspective of my fellow passengers. Wow! Imagine knowing nothing about battens or Alden schooners or the coast of Maine, just spending a few bucks and finding yourself in the embrace of this amazing boat and her masters. Of all Twig and Bonnie's remarkable creations, the most precious ones might be the memories they create while sailing almost every summer day. *—Ben Ellison*

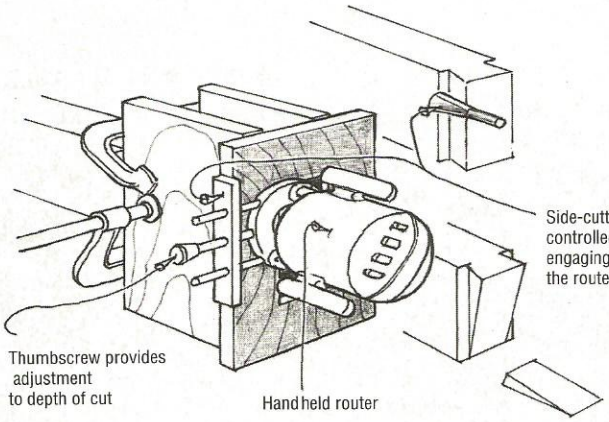
SAM MANNING



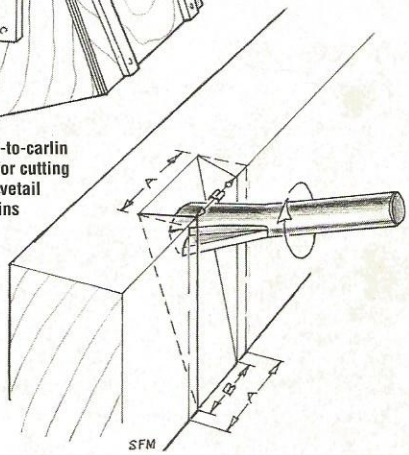
Router jig positioned for cutting dovetail on a square beam end



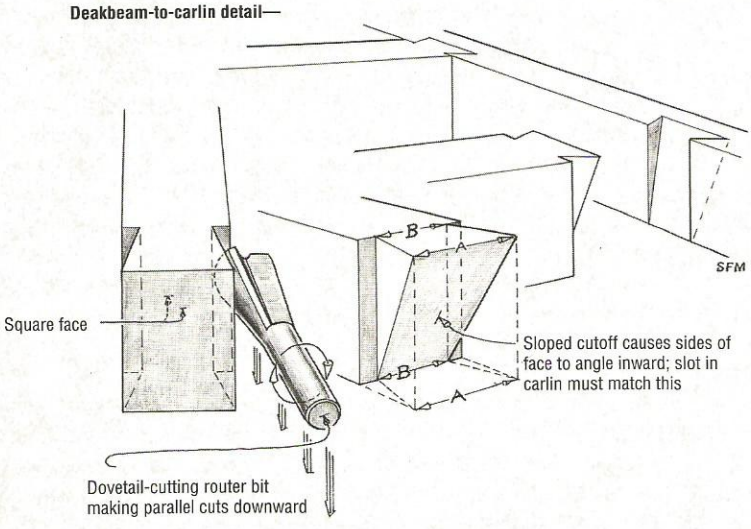


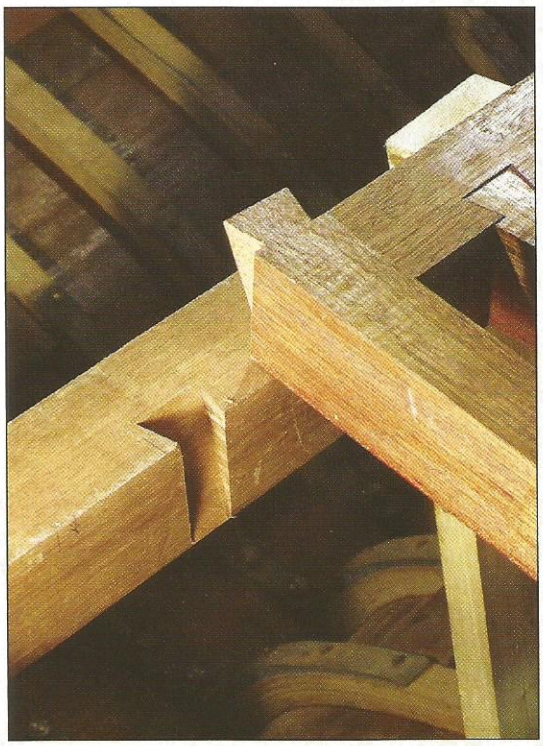


Deckbeam-to-carlin router jig for cutting sloping dovetail in the carlins



Deakbeam-to-carlin detail—





JEFF HAINES

In the same manner as her frame-heel-to-timber-keel connections, HERON's beam ends are dovetailed into her carlins. Further locking things in place, the outboard ends are notched over a ridge in the sheer clamp (not shown).

Continues from page 72

Dovetailed Beam Ends

This one is a bit of a mind-bender. It took Twig a week or two to puzzle over the angles and jig requirements to get this process to function properly. But, when it finally did, it provided a fast and elegant method of socketing the ends of deckbeams into the carlins.

One common approach to the beam-to-carlin joint is a tapered notch in the carlin. There's nothing wrong with this time-tested notch, but, drawing on his experience with the frame heels, Twig reasoned that he could substitute stronger sliding dovetails here and, with jigs in hand, cut the joints fast.

Again, Sam Manning's drawing will help where words fall short. Note that the dovetail is cut deeper into the carlin at the top of the joint than at the bottom; a straight dovetail, like that used in the keel, was out of the question: the beam would simply fall right through it, and the strength of the carlin would be compromised by the deep socket. Tapering the joint from top to bottom solved these problems, but introduced another.

Picture the dovetail-cutting bit. By definition, it is wider at its bottom than at its top. To taper the slot in the carlin, the wider bottom of the cutter is drawn toward the wood's surface as it travels down its cut. If the router's guide is not "toed in" a bit at the bottom of the cut, then the joint will widen as the cutter travels down. The correct amount of toe-in resulted in a proper straight-sided joint, and Twig arrived at it by trial and error—and worked in a bit of overcorrection so that when the beam is driven home, the joint tightens up.

The dovetails on the beam ends—the pins—were simpler than the befuddling slots to mark and cut. The first step was to cut a compound bevel matching that of the carlin on the beam's inboard end. (The beams were left overly long; the sheerstrakes were not hung yet, so the outboard beam ends could be trimmed to length later.) Then, a dovetail jig similar to the one used for the frame heels guided the cutting of the joint. With this done, the beam was brought to the chop saw and the end cut to the angle of its tapered home in the clamp. Ideally, says Twig, the beams will stand about 1/16″ proud when they are set in place. A firm "tunk" with the mallet will seat them so their tops are flush with that of the rest of the deck frame.

Matthew P. Murphy is editor of WoodenBoat.

Twig, Bonnie, and HERON

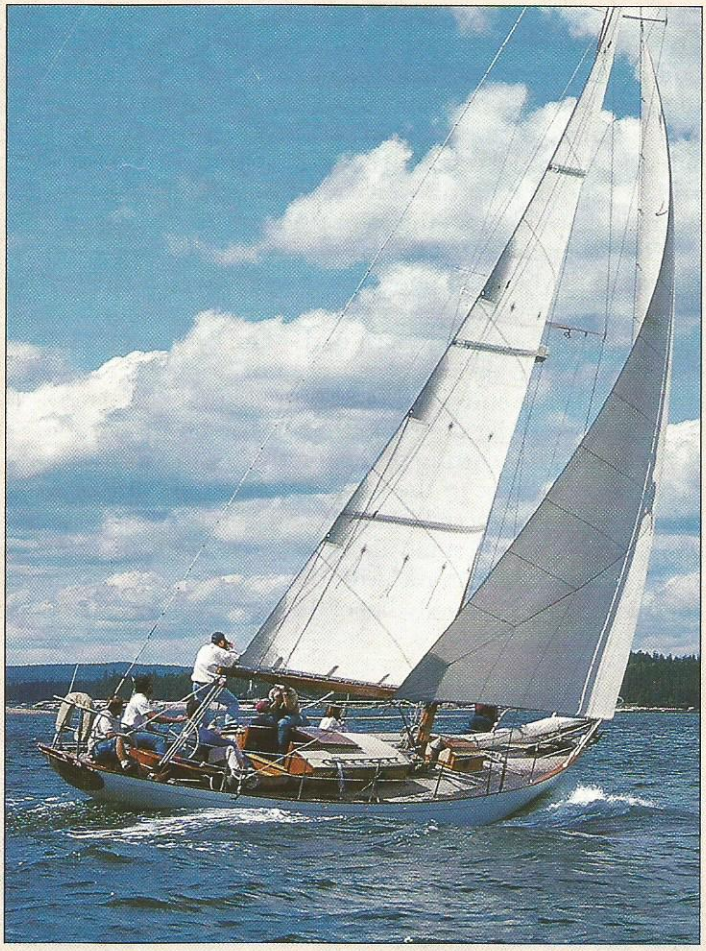
MATTHEW P. MURPHY

Twig Bower with his wife, Bonnie Schmidt, and daughters, Rachel (4) and Elissa (6).

Twig Bower grew up in the heart of England's steel and cutlery industry, the northern city of Sheffield, away from boats and talk of the sea. During his college years, he nearly became planted there—literally—when he was offered a salary by the coal board to complete his engineering degree and commit to a career in mines. "I realized that it really wasn't my cup of tea," he says of his decision to leave that opportunity behind and follow his youthful wanderlust. Soon after that decision he seized a chance to help deliver a trimaran partway around England. "I just wasn't the same after that," he says. "I was bitten.

"Coming from Sheffield," says Twig, "you definitely have a square head—a sort of tunnel-vision mentality towards building and producing." His eye for objects and his craving for travel led him to a cabinet shop—part of a woodworking cooperative—in Kiel, Germany, where he opened an antiques sales and repair business. Then the four-masted bark SEA CLOUD came to town. "I just lit up. I got the shakes," recalls Twig. "I was lucky enough to get on [board] and go from Kiel down to the Med and then across to the Caribbean." This was in the early 1980s, and Twig simply walked away from the antiques business, did more sailing, and eventually arrived in Camden, Maine, in the three-masted topsail schooner AQUILA MARINA. The place resonated with him, and he decided to stay and enroll for two years at the Apprenticeshop—then based in nearby Rockport.

While Twig Bower, the almost coal mine engineer, was wandering around in boats, his future wife, Bonnie Schmidt, was doing the same. Bonnie had grown up on a Wisconsin dairy farm, and, during her days at that state's La Crosse University, she met a fellow student who had sailed in the bark REGINA MARIS. He was then working for the American Sail Training Association and had an opportunity to sail aboard the U.S. Coast Guard training bark, EAGLE. Would Bonnie like to come along? "He didn't tell me...," she says of the singular nature of that experience. "He just said, 'Bring some clothes to



BENJAMIN MENDLOWITZ

Twig and Bonnie's first boat was the 40′ Rhodes 27 SHANTIH II, which the couple rebuilt entirely and have run as a charter boat for the past 10 years. That operation's success dictated the need for a larger boat.

go sailing in.'" After that trip they traveled to Maine, and Bonnie was smitten with the state. "I knew that's where I wanted to be. I was going to get there, but I didn't know how yet."

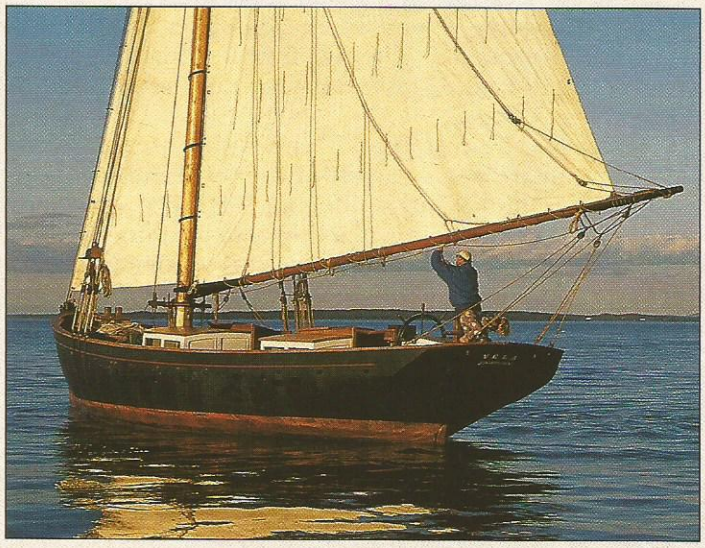
She became acquainted with Maine's windjammers, the fleet of historic passenger-carrying working vessels centered in Camden and Rockland, and sailed in several as galley crew or deckhand. By the end of her first season, she didn't want to stop sailing, and so hitchhiked to the Carribean, where she landed a sailing job in Bequia. This gave rise to her crewing on the 107′ steel schooner ASHANTI OF SABA (then MARIE PIERRE); when Bonnie signed on for that job, she didn't know until they were underway that the boat was bound for Italy. Upon arrival there, she hitchhiked to England and then flew to Maine, where she helped build rowing skiffs for the schooner LEWIS R. FRENCH; then she worked for a summer on the restoration of the schooner BOWDOIN. After that, she joined the research schooner WESTWARD and its college program as steward, sailing in the Caribbean and Bahamas. Returning to Maine after this full-immersion introduction to traditional sail, she promptly met and fell in love with Twig Bower, apprentice boatbuilder.

Following his apprentice program, Twig went to work for Sample's Shipyard in Boothbay for a little over a year, participating in the rebuilding of the three-masted schooner VICTORY CHIMES and a major refit of the 94′ Fife ketch SUMURUN. Through this experience, he "realized that I could set up on my own. I saw enough there to see how they operated." Investing his earnings in tools and equipment, Twig had an eye toward building a boat of his own. But he needed space. "Then," he said, "we started the Co-op."

The Carpenter's Co-op was Twig and Bonnie's initial venture in wooden boats. Twig describes it as "a place to pull off your own dream." They rented space in the barns and on the grounds of a sprawling former chicken farm, and sublet it to various individuals working on their own projects—"sharing the overhead and tools and knowledge. Nobody planned it," he says. "It just happened. There was a need for it—there were plenty of people around that had boats that wanted fixing."

At the Co-op, Twig and Bonnie accomplished the total rebuilding of their newly acquired, tired 40′ Rhodes sloop, SHANTIH II, which they have since chartered during the summer for the past 10 or so years. They also did many other repair and construction projects—including the total rebuilding of the 32′ Rhodes cutter WAGTAIL, the new construction (on original keels) of two Herreshoff 12½s, the rebuilding of a Quincy Adams 17 one-design, the phased rebuilding of the Crosby schooner OLAD, and, their largest project to that date, the building of the 50′ sloop VELA (see WB No. 127).

As the Co-op was morphing into a commercial boatshop, Bonnie and Twig were faced with increasingly unwelcome management demands. "We went through the whole thing—we got the shop up to snuff so we're OSHA approved," says Twig, "and we had contracts and we pulled them off." The growing shop had the capacity to undertake several large projects at once, but sustaining this clip was exacting a toll. "I was lured every summer onto the water to go sailing. And as soon as I went sailing I had little mutinies going on [in the shop]. People

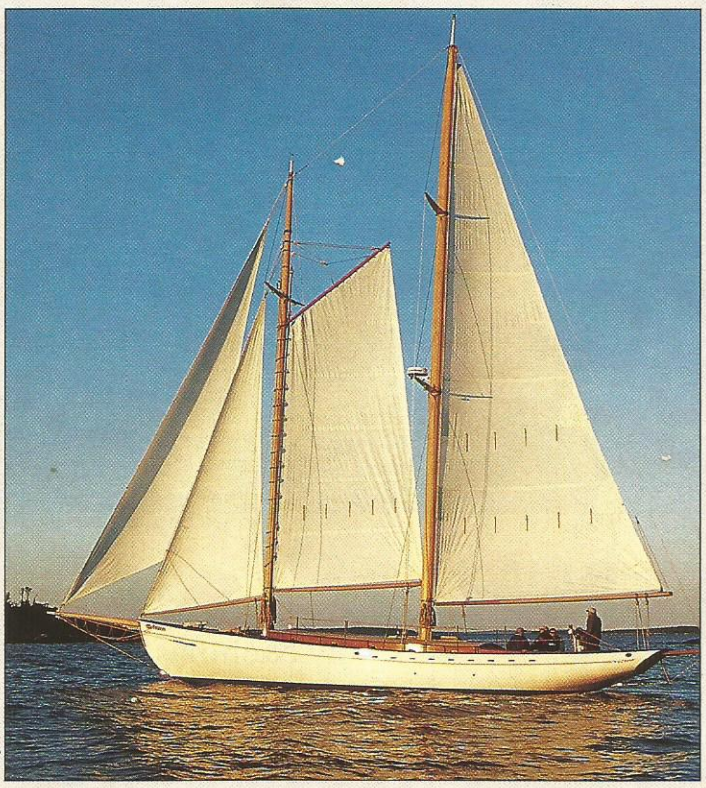


BENJAMIN MENDLOWITZ

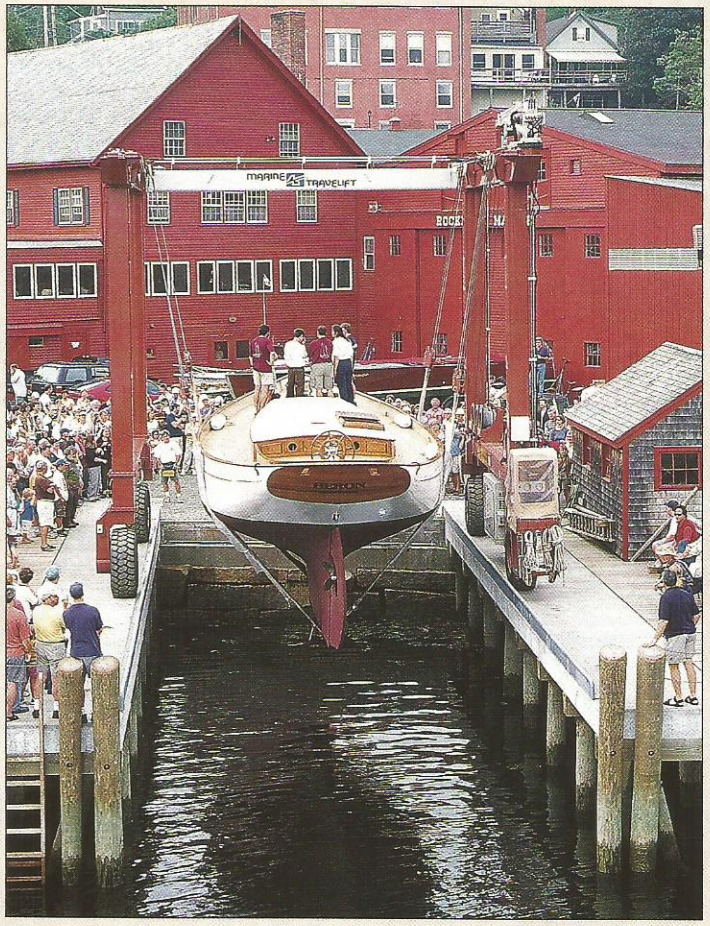
Among Bonnie and Twig's many projects was the construction of VELA, a 50′ sloop purpose-designed by Haddie Hawkins for the charter trade.

HERON Particulars

LOA	52′
Beam	14′
Draft	7′ 2″
Displacement	40,000 lbs
Sail area	1,360 sq ft (four lowers)
Fuel	104 gallons
Water	161 gallons
Designer	John G. Alden, Boston, Massachusetts



BENJAMIN MENDLOWITZ



ALISON LANGLEY

HERON was trucked from Twig's shop to nearby Rockport Marine for launching. Commissioned last summer with an incomplete interior, the boat sailed several day charters within weeks of her christening.

need motivating." He and Bonnie did not quit the business in frustration, but they did change its nature.

"I'm just doing it differently," says Twig of his response to the challenge of achieving balance. He built a new, smaller shop at his home. "We still have quite an operation." Instead of a ten-man crew, however, he maintains a shop of two or three individuals. "I'm always impressed," he continues, "by yards and people like Brooklin Boat Yard and Taylor Allen [Rockport Marine]"—nearby wooden boat building establishments that today have crews of around 50, and steady streams of projects. "They haven't got these wild dreams and ambitions and dumb ideas in their head."

Dumb ideas? The phrase, delivered with a wink, was a self-deprecating acknowledgment of the fact that Twig and Bonnie wanted to grow their charter business, and were more than willing to do so at the expense of growing the boatbuilding operation. "It's just so much more fun to take six people out on a picnic than run a crew of six carpenters, you know? It really is. And in the summertime it's nice to be out of the shop."

At the time of this epiphany, Bonnie was pregnant with their first of two daughters, Elissa and Rachel, who are now six and four, respectively. While dreaming of an eventual winter voyage to the Caribbean, they were also considering a boat of greater capacity than SHANTIH II in which to expand the charter business. TAR BABY, a schooner built to Alden design No. 390, was for sale, and upon seeing her for the first time, Twig recalls thinking "right away that that boat concept was about the right size. She's 50 foot...not too big to handle with just ourselves. We decided if we're going to run a business like this, we don't really want a boat [for which] we need to hire crew."

The couple eventually passed on TAR BABY. The schooner was built in 1928, and required substantial work to suit their purposes. However, they were sufficiently inspired by her to build their new boat, HERON, to her lines. "If we got an old boat," says Bonnie, "we'd have to spend a lot to get it to the point where we'd feel comfortable. We like to sail." (Both Bonnie and Twig are licensed captains; Bonnie ran SHANTIH II during much of HERON's construction—to "reverse the cash flow," laughs Twig.) "Building new," says Bonnie, gave the "freedom of mind to know you've got a good boat under you." —*MPM*

Today, Bonnie and Twig do business as The Wooden Boat Co.; their endeavors include new construction, repair, charter, and a small brokerage. The Wooden Boat Co., 212 Molyneaux Rd., Camden, ME, 04843; 207–236–8605; <www.woodenboatco.com>.