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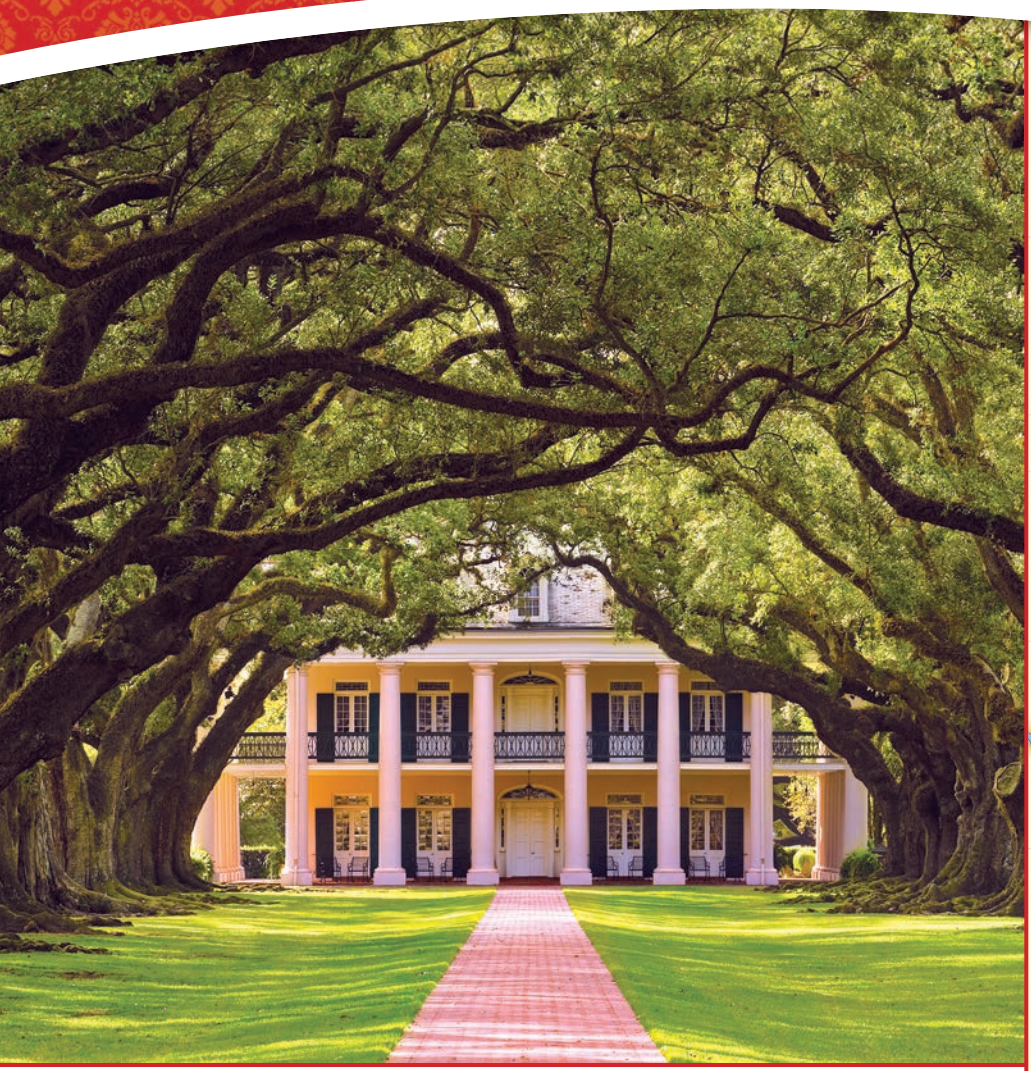

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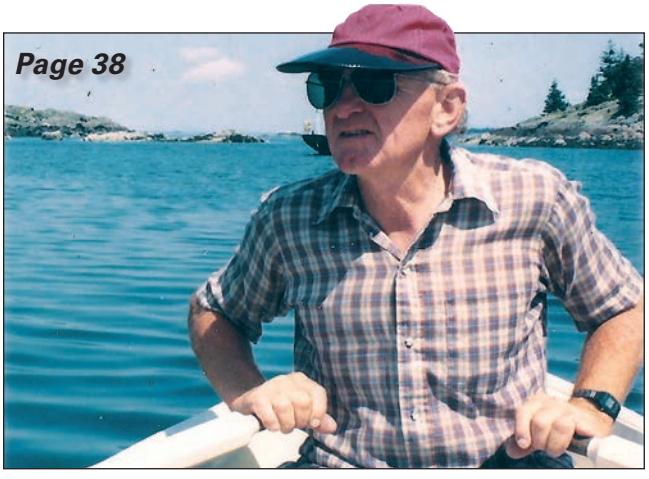
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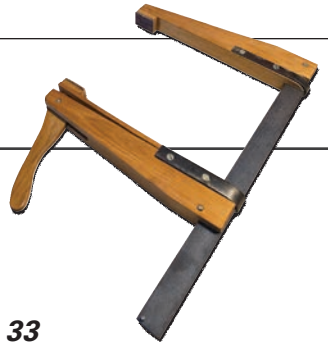

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DEPARTMENTS

READER SERVICES

TEAR-OUT SUPPLEMENT Pages 16/17

Getting Started in Boats:
Putting Your Boat to Bed *Jan Adkins*

Cover: Graham McKay, director of Lowell's Boat Shop in Amesbury, Massachusetts, takes a break from sea trials in a newly launched 16′ Amesbury Skiff. Graham and his crew built the boat for a how-to-build series beginning with this issue.

See page 72

Photograph by Ali Goodwin

WoodenBoat (ISSN 0095–067X) is published bimonthly in January, March, May, July, September, and November in Brooklin, Maine, by WoodenBoat Publications, Inc., Jonathan A. Wilson, Chairman. Subscription offices are at **P.O. Box 16958, North Hollywood, CA 91615–6958; 1–800–877–5284** for U.S. and Canada. Overseas: 1–818–487–2084.

Subscription rate is $32.00 for one year (6 issues) in the U.S. and its possessions. Canadian subscription rate is $37.00, U.S. funds. Surface rate overseas is $45.00, U.S. funds per year. Periodical postage paid at Brooklin, ME 04616 and additional mailing offices. In Canada, periodical postage paid at Toronto, Ontario (Canadian periodical Agreement No. 40612608, GST Registration No. R127081008).

U.S. Postmaster: Please send Change of Address (form 3579) to P.O. Box 16958, North Hollywood, CA 91615–6958
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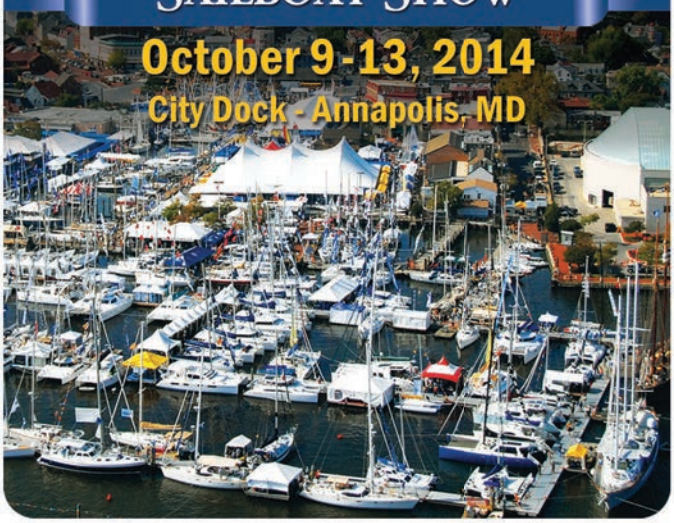

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CONTRIBUTIONS: Address all editorial communications to **Editor, *WoodenBoat*, P.O. Box 78, Brooklin, ME 04616–0078**. *WoodenBoat* is a largely reader-written magazine. Care is taken with unsolicited contributions, but we are not responsible for damage or loss.
PRINTED IN U.S.A.

A Cabin in the Woods. A Cabin on the Water

There's a bit of unintended symmetry in this issue, which we'll come to in just a moment. But first, a birthday to note: This issue marks 40 years of publishing *WoodenBoat* magazine.

Jon Wilson founded *WoodenBoat* in a cabin in the woods in Brooksville, Maine, in 1974. It was a primitive setup, by all accounts: The nearest telephone was nailed to a tree down the road, because the fledgling business could not afford to run the line to the cabin. There's a now-famous photo of a youthful Jon doing business on that phone on a snow-covered winter day, his face exuding a measure of optimism far out of proportion to a start-up magazine founded by an inexperienced publisher covering an apparently dying field.

In retrospect, however, there was good reason to be optimistic. The publisher quickly proved to have an innate instinct and infectious enthusiasm, and the industry proved to be not dead, but disjointed. The scattered wooden boat community responded to the magazine with a newfound vitality. Indeed, the magazine didn't revive wooden boat building so much as give voice to existing efforts. And these efforts gave rise to new efforts and innovations.

It turns out there were signs of life everywhere in 1974—not only with passionate and knowledgeable people in Maine such as Bill Page (see page 38), but also from the west coast of Norway to Tasmania; from Japan to South Africa. Within a decade, the magazine's circulation had grown to a previously unimagined number, the business was housed in a former seaside estate in nearby Brooklin, and there was a thriving store and a nascent boatbuilding school.

There's an unsung hero in this success: you, the reader. Scot Bell, manager of The WoodenBoat Store, once commented upon the profound trust a reader places in a magazine by paying in advance for a year's worth of yet-to-be-seen issues. You're trusting not only that the magazine will be there, but that the contents will remain consistent from issue to issue—without being predictable.

A startling number of our readers have been with us since the 1970s—many from the very beginning. We're rewarding this loyalty with a new section of our website only for our magazine subscribers. Three of our staff members—research associate Queene Foster, assistant editor Robin Jettinghoff, and web wizard Greg Summers, have been laboring for the past many months to create this section (at www.woodenboat.com). At present, it contains two instructional boatbuilding videos, five years of back issues of this magazine, the entire set of *Maritime Life & Traditions* (a magazine we published for several years in association with the French company Le Chasse Marée), and curated content from our library.

There are also some updates within our printed pages—particularly a new department called Sketchbook, launched in the previous issue. It's a design department that brings to life the ideas of our readers. It works like this: Readers send us the broad specifications for a new boat, and our two Sketchbook designers, Laurie McGowan and Michael Schacht, develop the concept in lines, renderings, and a three-dimensional model published on our website. For this issue's installment, we asked Jon Wilson, on the occasion of the 40th anniversary, to specify his dream boat. Much to our delight and surprise, he specified a trailerable houseboat—a cabin on the water.

And therein lies the unintended symmetry. Forty years after Jon Wilson founded this magazine in a cabin in the woods in Brooksville, Maine, his dream boat is a simple cabin on the water—a wooden one, of course. Now that's consistency. And a surprise.

LETTERS

Johan Anker

Dear *WoodenBoat*,
The timing of the wonderful article on Johan Anker could not have been better. You see, as a young fellow I sailed on an R-boat named MARITA. That was in Nova Scotia. When I sailed on her, she was owned by local yachtsman Arthur Dechman, who had purchased her from a Mr. Bell from Halifax. She was a beautiful sailing boat, and we won lots of hardware with her. Unfortunately, she was sold to an overzealous and underexperienced ocean sailor who bought her for singlehanded ocean cruising—certainly not what she was intended for! On his initial voyage, the boat foundered partway to Bermuda. The sailor was saved, the boat lost, and in a way perhaps it was a fitting burial for MARITA.

Her background was unimportant to me as a kid, but I recently found out she was a Johan Anker–designed boat. I am interested in finding more about her and hopefully obtaining some lines from which to make a half hull.

Phil Rogers
via e-mail

Chasing the Tide

Bonjour,
I enjoyed Peter Neill's article about Bernard Cadoret. I was also amazed by the title.

In French, *marée* has two meanings: the first one is "tide," and the second one is "fresh fishing." There is a profession associated with the second meaning, *mareyeur*. A mareyeur is someone who collects fresh fish for trade. I think that the name of the boat type, *chasse marée*, relates to this profession. A *chasse marée* is a boat put into commission by a mareyeur to trade fresh fish.

I was very proud to read this article in *WoodenBoat*. Thank you!

Mika Dautrey
Perros-Guirec, France

Dear Editor,
I enjoyed your article re: Brest/Douarnenez and Bernard Cadoret since I have been at all the festivals since the first in 1986. The first was a bit strange since it was the Bastille holiday and all the banks and shops were closed. I managed to get the guys at the Abri de Marin to change some money to get lunch. They had organized a mobile bank to come down. I went there, and found one guy with a queue 50 yards long. The sweat was pouring out of him. I saw him later that night totally drunk.

The only places open were three bars on the harbor, and they made a fortune.

At the next festival, in 1988, so many boats and people turned up that all the toilets broke down except the one in the bar La Neptune, which I fixed with a split pin from the ship's stores. In 1992 the navy port in Brest opened to the public and boats for the first time ever. All these navy officers were walking about shaking their heads, but by dinnertime they were also as "cheerful" as the rest of us.

It has become more commercial as time has passed, but what the hell. These old boats cost money. I know, as I've just bought one—a copy of a Tancook schooner called BRUNHILDE, built in 1967.

Keep the magazine going. My bookshelves are not quite full yet.

Charles Smith
Shetland, United Kingdom

The Safety Tyranny

Dear Editor,
On page 13 of WB No. 239 stands a young lad in torn pajamas steering an open traditional boat with the "I know where I'm going" look in his eye. The scene is utterly delicious. The boy is not in a revolting plastic thing with enormous life jacket and crash helmet which are the minimum *de rigueur* of The Safety Tyranny in which children have their spirits broken if they get anywhere near the water in the U.K.

I learned to sail in 1949 on the uncharitable waters of the River Medway in an International dipping lug "1" (Arthur Ransome's AMAZON) which didn't even have buoyancy bags or other dreadful clobber, because Britain still had The Spirit which had won the war for freedom. At 72 I have sailed without an engine for 40 years in proper yachts, without ever wearing a life jacket, because I know where I'm going. I'm still here. Perhaps dinosaurs do live beyond their sell-by date?

Robert Stevenson said, "Better he breaks his neck than you break his Spirit." My Spirit is still very much unbroken—as that young lad's will always be for his proper start at the helm of life, while his confreres in the U.K. become Stevenson's "broken Spirits."

Michael Burn
Yacht SHEILA

We agree with Mr. Burn's general sentiment regarding the value of traditional seamanship to youth. However, we're also avid proponents of the judicious use of life jackets and positive buoyancy in small boats. Crash helmets are another matter.

—Eds.

Steam in Place

Dear *WoodenBoat*,
I was interested to read of the steam-in-place technique used by Louis Sauzedde (WB No. 239). Forty-odd years ago, I was a young guy building his first large planked hull from 2¼″ Australian spotted gum planking stock without assistance. Moving a 40′ plank weighing over 450 lbs from a steambox to the framed hull wasn't remotely possible. I accomplished the job in a manner similar to Louis's method, by pulling a sock made from stout canvas over the plank end and clamping the open end tightly to the exposed plank to prevent steam loss. The whole affair was wrapped in burlap sacks and covered with a sheet of plastic. Steam was introduced via a ¾″-diameter steam-rated hose to the blind end via a permanent fitting in the sock. My boiler had enough capacity to introduce steam under about 2 psi pressure and inflate the sock for the duration of the steam cycle. When the plank was ready to bend into place, the steam was shut off and the sock unclamped and quickly pulled off. A frantic three or four minutes' work followed with various bits of tackle and clamps to pull the now temporarily supple plank into position. The plank was positioned to fall shy of the end rabbet by about an inch when bent; it was then driven home from the other end with a sledgehammer before finally tightening the clamps. It worked like a charm for both ends of 30-odd planks, some with pronounced bend and twist.

Paul Zeusche
via e-mail

Place in Steam

To the Editor,
Several people have brought to my attention that the most recent issue of *WoodenBoat* magazine has a wonderful article about the restoration of the WP SNYDER. It is inspiring to see the progress made by the Ohio Historical Society to restore this significant piece of their river history.

The story describes the SNYDER as the "last steam stern-wheeled tug in existence." Ahem. But this needs correction. Come aboard the PORTLAND, a steam stern-wheeled ship-assist tug, which has been owned by the Oregon Maritime Museum since the 1990s. The PORTLAND has been operational since its initial restoration, and was even in the movie *Maverick*. She functions as a museum ship, and will be cruising a few times this summer.

OMM tries to be very clear about describing the PORTLAND as the last of

its kind, and the "ship-assist" descriptor makes her unique, although I will confess that our docents and some of our written matter may slip up now and then. It takes great care, and lots of financial support, to put a beloved tug back together, and to keep her operating. One of our early benefactors was the Sons and Daughters of River Pioneer Rivermen. We appreciate and admire the efforts of the Ohio Historical Society, and will be one of their biggest cheerleaders when the SNYDER returns to its home berth.

We celebrate the SNYDER—and the PORTLAND—as national treasures, but please don't move the PORTLAND to nonexistence! Thank you!

Susan E. Spitzer
Vice President of the Board
Oregon Maritime Museum
Portland, Oregon

Hydroplane History

Dear *WoodenBoat*,

As a subscriber to your magazine and a longtime fan of unlimited hydroplane racing, I truly enjoyed your article and pictures of the Wilsons and their MISS CANADAs. However, I would like to point out one historical error: MISS CANADA IV's first challenge for the Harmsworth Trophy occurred in 1949, not 1948 as your article states. And there were four boats in that race, not three. The U.S. defended the trophy with a three-boat team consisting of MY SWEETIE, SUCH CRUST, and SKIP-A-LONG, the eventual winner.

And I think the writer should have also mentioned that although MISS CANADA IV challenged unsuccessfully again in 1950, in that race she was up against the boat that was probably the fastest hydroplane in the world at that time, SLO-MO-SHUN IV, the winner of both the Harmsworth and the Gold Cup in 1950. But please continue with articles and pictures about the great hydroplanes of the "golden age" of hydroplane racing.

Tim Matyn
via e-mail

Author John Summers replies:

You're quite right, since the Harmsworth Trophy wasn't contested from 1934 to 1948. The official reasons for this were the Great Depression and a World War, but I often wonder if it wasn't also a case of "Gar Wood fatigue," given that Wood virtually owned the race from 1920 to 1933. As for the mighty SLO-MO-SHUN IV, you're right again, though the Wilsons and Douglas Van Patten deserve some credit for persisting with their unique hull shape long after the prop-riding three-pointers had taken over the racecourse. I'm so glad you enjoyed the article, and I appreciate your "after-the-fact" fact-check.

Erratum

Dear Editor,

I would like to draw your attention to an error in WB No. 238. In the book review section, page 111, the author of *Catlan Castaway* is Ben Crawshaw, not Cranshaw. I would be most grateful if this could be clarified in the next issue. Many thanks,

Joanna Crawshaw
via e-mail

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Professionally Restored 1st Place	HANK	E.M. Crosby Boatworks, Inc.
Professionally Restored Honorable Mention	VIM	Bernie Gustin; Artisan Boatworks
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Professionally Built 1st Place	17' Kayak	Joey Schott; Chesapeake Light Craft
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TOM JACKSON (BOTH)

A galleon for California

by Tom Jackson

Shipwrights (among them Steve Kessler, left; Vince Sardina, center, who learned caulking starting at age 12 in his father's yard in Sicily; and Fernando Alva, right) are closing in on the completion of a replica representing SAN SALVADOR, the flagship of the 1542 fleet that took the first Europeans to what is now California. The 74'5" LOD ship, planked with sapele over live oak sawn frames, is being constructed on the San Diego waterfront (inset) and is expected to launch late this year.

As U.S. Navy vessels slide in and out of San Diego Bay with an air of deadly efficiency, a ship from a different empire is taking shape on the city's waterfront. From near enough, the methodical ring of caulking mallets on the SAN SALVADOR Spanish galleon replica rises above the whine of traffic on the adjacent four-lane and jets from the nearby airport, and an overpass conceals the largest of machine tools.

Ray Ashley, the president and CEO of the San Diego Maritime Museum, is fond of pointing out that long before the MAYFLOWER Pilgrims of 1620, long before the first English settlement at Jamestown in 1607, the history of the colonization of what would become the United States was being made in California. The replica is necessarily conjectural, since no drawings or archaeological finds of this specific original 1542 vessel inform its construction. The original galleon was the flagship of the three-ship fleet that Juan Rodriguez Cabrillo outfitted in Navidad, Mexico, to explore the coast to the north. When he landed at San Diego Bay, he became the first European to reach what would become the U.S. west coast. Although he died en route, his expedition penetrated farther north, perhaps as far as modern Oregon, more than 40 years before Sir Francis Drake covered some of the same territory, and subsequent Spanish expeditions pushed as far as modern Puget Sound.

This modern galleon—built to standards that would have shocked Cabrillo—fills a historical gap at the San Diego museum. She'll join the replica HMS SURPRISE (ex-ROSE) of the 18th century; the iron-hulled square-rigger STAR OF INDIA and the replica topsail schooner CALIFORNIAN of the 19th; along with American and Soviet Cold War–era submarines, and a fleet of locally important watercraft from the 20th century.

SAN SALVADOR is 74′5″ on deck, with a waterline length of 71′11″, a beam of 24′7½″, a draft of 10′, and a displacement of 236 tons.

The construction—like almost everything associated with Spain's conquests in the New World—has not been without troubles. Originally envisioned to be built with laminated white oak frames, the plan changed when epoxy failure, which Ashley attributed to a "bad batch," left 39,000 bd ft of white oak ruined. "A week after the laminations arrived, every single glue joint began to fail," he said. Much delayed, the leadership reverted to traditional sawn framing, using live oak. Her planking is 2½″-thick sapele, silicon-bronze fastened below the waterline and trunnel-fastened above. Upper planking is of Douglas-fir, which is also extensively used in deck framing, decking, bilge stringers, and spars. The highest structural pieces—her aft railcap is 28′ above the waterline—are of Alaska yellow cedar.

Offsetting her frame issues were some finds that buoyed the project. UTC Aerospace Systems had 190,000 lbs of lead surplus dating to World War II days, and not only gave the project the lead but cast the outside ballast keel sections and ingots for inside ballast. Bronze supplies came at about 10 percent of value, and engines also came at a steep discount. The project has had a core group of paid shipwrights, but much of the labor has been provided by volunteers. "We have had two doctors, a surgeon, a nuclear physicist, a chemist, a Navy admiral, a second-chair violinist with the San Diego Symphony—a lot of people working here," Ashley said.

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She is expected to launch in November 2014. By fall of 2015, her sailing range is expected to reach north as far as San Francisco and Sacramento. A 2016 schedule envisions a possible voyage to Mexico.

"The way American history is taught," Ashley told me in June 2014, "it is a projection that really starts with Jamestown, and then the Pilgrims set foot, and things move from east to west—California doesn't even exist anywhere on earth until the Gold Rush, right? What we're trying to say is, that story's not wrong, but America also began here. The Pacific began exerting an influence on American history from the very beginning, predating those other things." In an area where history was often a known landing site or a trail through the wilderness, a full-sized ship replica can make the point perhaps in a way no other object could. "Hopefully, families in Maine, and Massachusetts, and Connecticut, and Rhode Island, and Virginia, will be loading the kids in the van and saying, 'Okay, everybody, this summer we're going to go to California to see where America began.'"

Tom Jackson is WoodenBoat*'s senior editor.*

Around the yards

■ In early July 2013, the **remodeled** and much expanded building of **Richard Stanley Custom Boats** in **Bass Harbor, Maine**, was looking very much like a new house without its furniture. Stanley and his wife, Lorraine, were just about to begin moving. "We've got to get benches put in, tools all brought over and moved in," Stanley said while standing in the empty space, then only newly completed. "I'm still trying to figure out where to put what, and what to put where."

For Stanley, who grew up building boats with his father, Ralph, in nearby Southwest Harbor, the new structure marks a return to the waterfront and the creation of the kind of boatbuilding space he has always wanted. The yard has access to **two marine railways** and its **Travelift** can drive boats directly into the buildings. The space is divided into two large rooms, the first of which is the principal construction area. This room is a former machine shop whose recent renovations include a new wooden floor. Its overhead rolling chain hoist will help with the heavy lifting. The second room, about twice the size of the first, is a new structure built for the yard by Lorraine's father, Kim Strauss. Here, Lorraine will be able to do the paint and varnish work that is her specialty. With a dirt floor covered in canvas providing an ideal environment for wooden boat storage, the room will be used primarily for maintenance work. Both buildings are insulated and sheathed in pine for a comfortable and weather-tight working environment.

Ralph Stanley's old waterfront boatyard in Southwest Harbor was put up for sale upon his retirement. "I moved out of there when I bought the business from him," said Richard, who had previously been a one-quarter owner. He moved his business to leased sheds in Manset that the yard had long used for winter storage. This latest move puts the yard on a small peninsula in a harbor full of lobsterboats. "I didn't think I'd ever be back on the water," he said. "It was offered to us, and the situation seemed like a good fit."

The first project in the new yard was scheduled to be the continued restoration of the 1902 Charles Morse–built 40′ Friendship sloop WESTWIND. The reconstruction of the hull was done in the Manset yard, but interior fitout will be completed in the new building. The construction of a 19′ traditional sloop that Stanley is building with an apprentice will also continue in the same space, on the apprentice's every-Wednesday-afternoon schedule. Stanley is also reconstructing a dory and a peapod. Another large Friendship sloop refit, HIERONYMUS, a 33-footer that Ralph Stanley built in 1962, will follow.

"Eventually," Stanley said, "I want to downsize my storage business even further and just build boats." His work in boats stretches as far back as he can remember. He was scrubbing boat bottoms at the age of three, and except for two years when he completed the boatbuilding program at The Boat School in Eastport, Maine, and contract work here and there, he has been a Mount Desert Island boatbuilder ever since. His emphasis is on traditional plank-on-frame construction, and he most often works alone. "I could definitely build 40′ boats here, but I don't want to," he said. "The biggest boats I would like to build are 36′ and smaller—but if one came along that sparked my interest, I might think about it." Stanley also designs boats, often working from half hulls he carves for clients.

Richard Stanley Custom Boats, P.O. Box 275, 13 Little Island Way, Bass Harbor, ME 04653; 207–244–3795; www.richardstanleycustomboats.com.

TOM JACKSON

Richard and Lorraine Stanley in July 2014 moved Richard Stanley Custom Boats to a waterfront building in Bass Harbor, Maine. The principal boatbuilding shop (seen here before tools and equipment moved in) is a converted machine shop that can accommodate constructions up to 40′ long. A large new addition accommodates boat maintenance and storage.

■ Mention of the MAYFLOWER above calls to mind a project in Harwich, England. There, a **new replica** of the iconic vessel **MAYFLOWER**, in which Pilgrims made their landfall in what is now Massachusetts, is **under construction**. (MAYFLOWER II, homeported in Plymouth, Massachusetts, was also famously built in Devon, England, and sailed to the United States in 1957 for exhibits associated with Plimoth Plantation.) The new project aims to highlight Harwich's historic importance in shipbuilding, a legacy that may include the original MAYFLOWER's construction.

"The Harwich MAYFLOWER project was set up in 2009 with the express purpose

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COURTESY OF HARWICH MAYFLOWER

With the keel laid and the backbone structure coming together, a new replica MAYFLOWER is under construction in Harwich, England, where the original ship is believed to have been built in the early 1600s.

of using the building of the iconic MAYFLOWER ship in Harwich to achieve major benefits for the local area," writes Tom Daly, chairman of a committee of trustees. "Harwich has, for more than five hundred years, been crucial in British maritime history. It has been central to the major events in making Britain what it is today: building ships in the time of the Spanish Armada and its role in the two world wars. However, it has lost its shipbuilding heritage, and even more important, there have been no apprenticeships in shipbuilding or marine engineering in this town for decades. The MAYFLOWER project has in a very short time become a registered charity in the U.K. and the United States," and its training programs are accredited, providing Level 2 and 3 apprenticeship programs in Marine Engineering and Construction, along with additional courses covering subjects varying from safety practices for North Sea wind farm workers to repairing small craft.

"The ship (and its build) will also act as a tourist hub for a part of northeast Essex that has been recognized as one of the most deprived in the south of England," Daly writes. (Fundraising for the project continues.) "When the vessel is built it will be used to train young people in all aspects of sailing and safety at sea and at work. Navigation and seamanship will be central to this phase of the project. After the MAYFLOWER is complete, we plan to continue building other wooden boats and ships. There are tentative plans for a replica Viking longship to be built. In this way we can continue to provide apprenticeships and training for youngsters. We are also passing on skills from an experienced older generation to young people. Many of these skills have been in danger of being lost completely."

Harwich Mayflower, The Railyard, George St., Harwich, Essex, C012 3ND, England; www.harwichmayflower.com.

■ Suzanne Leahy writes with news that her Cape Cod boatyard, **Pleasant Bay Boat and Spar Company**, Orleans, Massachusetts, **has closed**. However, the Beetle Boat Shop in Wareham (www.beetlecat.com) acquired the company's spar lathe and associated tools. "I will join Beetle and will be working side by side with their crew to promote and grow the spar business with them," Leahy wrote. Tony Davis at Arey's Pond Boat Yard (www.areyspondboatyard.com) has acquired Pleasant Bay's Orleans boatshop property. Pleasant Bay's **last project** was a fine culmination to the company's run: a custom cold-molded **catboat**, **MISU**, 23′ LOA with a beam of 9′ and a board-up draft of 2′, allowing the firm to close "on a high note," as Leahy reported.

COURTESY OF LAURA SHERMAN

MISU, a 23′ cold-molded catboat, was the final boat constructed at Suzanne Leahy's Pleasant Bay Boat and Spar Company on Cape Cod, Massachusetts.

■ **Edensaw Woods** (www.edensaw.com) in **Port Townsend**, **Washington**, marked its **30th year in business** in July. The company, founded by two boatbuilders, started with a joint wood-buying venture to Mississippi. Jim "Kiwi" Ferris sailed to Port Townsend from his native New Zealand and was building a boat at the time he met Charley Moore, who worked at the Northwest School of Wooden Boatbuilding. They shared management, alternating extended time off for family sailing, until Moore died in 2013. The company, which still caters to boatbuilders but also to homebuilders and specialty woods users, has outlets in Port Townsend and Tacoma.

Offcuts

Encouraged by the roundup of youth boatbuilding and related education programs in WB No. 239, **Joe Youcha** of Alexandria, Virginia, writes with an update about an alliance dedicated to encouraging such programs far and wide. Youcha (see "Getting Started In Boats" Volume 32, WB No. 224) has been a leader in the movement to use boatbuilding as a tool for teaching math to students, and founded **Building To Teach** as a project of the Alexandria Seaport Foundation. The **Teaching With Small Boats Alliance**, which he subsequently helped found, is coming up on its fourth annual conference to spread the concept of **boatbuilding in education**.

"The idea behind the TWSBA started with Dick Wagner's initiative in the early 1990s at The Center for Wooden Boats in Seattle, Washington," he writes. "The CWB twice brought together the 30 to 40 people around the country working with 'maritime skills and foundering youth.' We were there to share ideas and support one another. Reignited by a conversation at the 2008 WoodenBoat Show at Mystic Seaport, the initiative has taken off.

"I thought I knew most people doing this type of work, but I was wrong. Every month, I find out about more individuals, schools, and nonprofit organizations using boats to help young people. So far, there have been three TWSBA conferences: 2010 in Alexandria; 2012 at the CWB facility at Cama Beach, Washington; and 2013 at Mystic Seaport, Connecticut. Those conferences have spawned a website **(www.teachingwithsmallboats.org)** that shares 'how-to' information and background on how to design a program. There are regular email newsletters and a Facebook page (www.facebook.com/twsba)

to keep everybody up to date on interesting projects and programs." The website now has 461 registered users who draw on its freely available teaching and program guides.

"At the conference last fall at Mystic Seaport, there were 120 participants from 61 TWSBA organizations. Those organizations work directly by teaching with small boats to over 13,000 students and participants. Also attending were affiliated organizations who serve 480,000 more participants. There were 30 presentations, workshops, and hands-on experiences offered over three days. There was much material generated for, and by, the presentations; and there was wonderful feedback. One participant wrote, 'I will never forget the fine, enthusiastic, dedicated, hardworking people I met at this conference. They are truly inspirational, and I look forward to staying in touch with a great many of them.'

"We try to alternate the conferences between the U.S. coasts. Participants come from every part of the country. Folks have even come from overseas. The **next conference** will be **April 29–May 2, 2015**, at the **Northwest Maritime Heritage Center in Port Townsend**, Washington. There's great maritime-based educational work being done in Port Townsend, and the local school system is exploring the possibility of adding a maritime context to their K-12 curriculum. It's a wonderful chance for us to learn from their example and for them to see what else is going on around the country.

"Calling TWSBA an organization is really overstating the case. We're really a slightly anarchic community of like-minded wooden boat people who have created a Web presence and pulled together conferences. Our mission is simple: We want to share ideas, support one another, and help more kids. So far, it's been very valuable."

TOM WALKER

A brand-new wooden boat festival at the Balboa (California) Yacht Club was held for the first time in June 2014, attracting 46 classic boats.

In June 2014, the **Balboa (California) Yacht Club** held the first of what promises to be an **annual wooden boat festival**. "Forty-six of the finest classic sail, power, and human-powered boats from San Francisco to San Diego were on display in the water or on dry land," club officials wrote. "An estimated 1,200 guests arrived by shuttle, paddleboard, bicycle, car, and foot to admire the handiwork of shipwrights and wooden boat hobbyists." By all accounts, the mix of sailing and power boats was impressive, both in numbers and quality, and many of the large yachts went on to the San Diego Wooden Boat Festival at the Koehler Craft Marina on Shelter Island the following weekend. The Balboa festivities included live music, demonstrations, and activities ashore, and awards and honors were liberally bestowed. The next festival's date is already set for June 6, 2015. *Balboa Yacht Club, 1801 Bayside Dr., Corona Del Mar, CA 92625; 949–673–3515; www.balboayachtclub.com.*

COURTESY OF BUILDING TO TEACH (BOTH)

Getting young people excited about the practical application of coursework—especially math—has been the goal of the Teaching With Small Boats Alliance. A conference for educators hoping to learn about such programs will be held at the Northwest Maritime Center in Port Townsend, Washington, April 29–May 2, 2015.

"The **Bequia Boat Museum**, some 30 years in the making, opened in November 2013," Richard Dey writes from the island nation of St. Vincent and the Grenadines. The museum stands 300′ above Friendship Bay on the island's windward side, overlooking the islands to the south. Professionally designed and funded entirely by private donations, it is intended to **preserve Bequia's rich maritime history** as much for local people as for tourists.

"One of the boats on exhibit is a new **34′ dugout canoe** representing those used by the Indians who originally settled the Lesser Antilles. It was carved from a gommier tree in Martinique and shipped to the island in a French naval vessel. The collection also includes **two whaleboats** built on Bequia in the early 1960s: DART, 28′ long, was used in the local humpback fishery and FAITH pursued blackfish off St. Vincent's leeward coast. Both are double-enders framed with local white cedar and planked with imported spruce pine using galvanized fastenings. They both have spritsail rigs and sweep oars for steering. For the exhibit, each is fitted out with harpoon, lance, line, wooden tub, and loggerhead. A **12′ Bequia 'two-bow,'** a scaled-down whaleboat used for along-

Getting Started in Boats

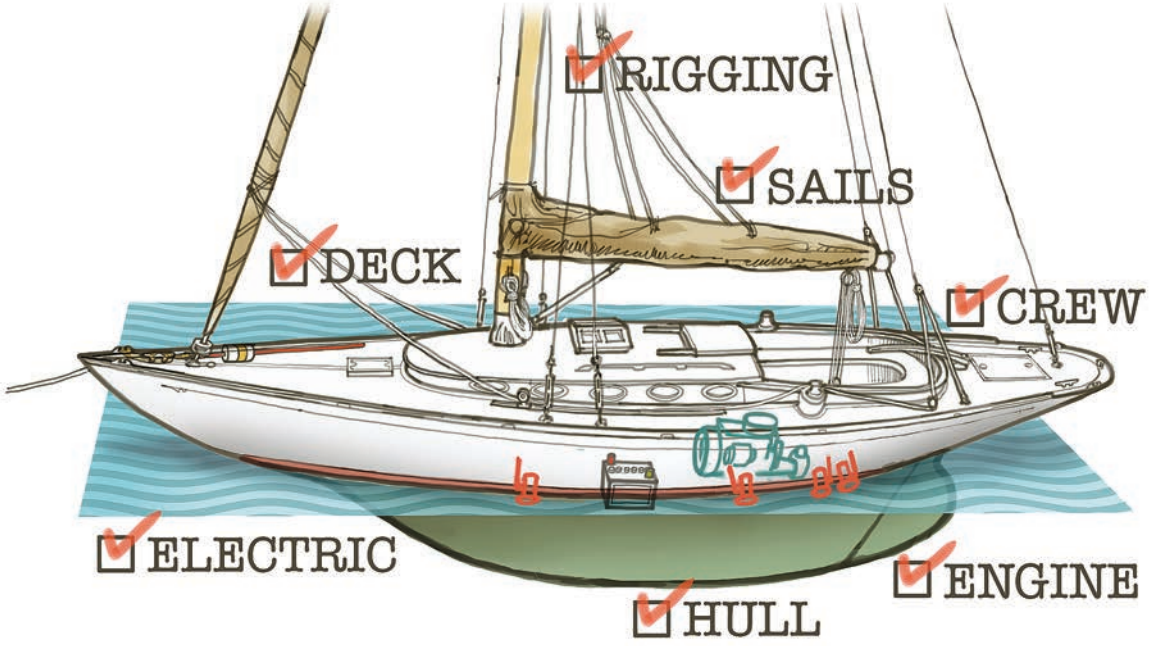
from the Editors of WoodenBoat *Magazine*

Volume 48

Putting Your Boat to Bed

Putting Your Boat to Bed

Text and Illustrations by Jan Adkins



Sailors cling to tradition. It's well known that we salute the quarterdeck when we board a boat. Perhaps it's a bob of the head, the shadow of a bow, certainly a smart salute when in uniform. We offer a moment of respect for the ship, for the dangers of even the smallest voyage. The nod is also acceptance of the caution and humility we share with the Old Fellahs, our watery continuum.

Less well known is the same salute given as we leave the ship. This may be a more complex and general observance: This nod acknowledges thanks for bringing us back, miraculously dry-shod; it gives thanks to the ship itself for carrying us safely and giving us the renewing gift of perspective on the shore; and it acknowledges that the voyage could easily have gone so differently.

As we get started in boats, let's pause a moment before we make our bow to the boat and head inland. How well do you leave her?

A friend of ours flew off to New Zealand on winter holiday. A message reached him that his boat had sunk at its mooring, diesel fuel was leaking, and the Coast Guard was contemplating a $40,000-per-day fine unless an immediate salvage plan was put in place. Your take-away lesson from this mishap (which was rectified and repaired) is that disaster isn't usually a catastrophic collapse of structure or system but a tiny sliver of failure, the proverbial 56¢ part or a momentary lapse of attention as you put your boat to bed overnight or over a season.

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Good Boatkeeping

"How does he keep his tools?" This is one way we regard a craftsman. Do you trust a craftsperson whose chisels, files, and Vise-Grips are jumbled into a drawer together? Perhaps there are exceptions, but generally a fine woodworker or machinist has near-obsessive respect for his tools and puts them away with a care beginners might view as exaggerated.

The way you put away your boat reflects your judgment, respect, and skill. It's a skill you learn, not truly difficult but painstaking and detailed. Good skippers won't trust their recollection at the tired, dehydrated, fumbling end of a day on the water; they rely on a harbor-list. They tick off the items one by one, involving the crew in bringing the boat to a point of safe stasis and future readiness.

Since you're beginning in boats, resolve not to take counsel of your tired and frazzled self, but to obey your sharpest decisions laid down in a personal checklist compiled with foresight and probably with help from experienced shipmates. It must ultimately be personal, since every boat and every skipper differs. It's an important document and mnemonic.

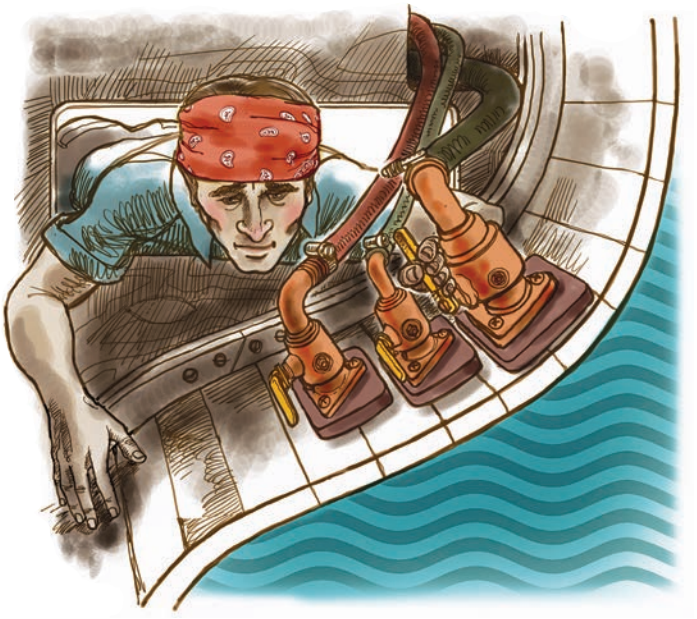
Composing your checklist isn't easy, and you'll go through successive iterations until you're wholly satisfied. A good place to start: break down the tasks into areas of concern.

Hull

How do you leave your hull? What through-hull valves must you close? The raw-water heat exchanger is potentially dangerous. Water can siphon through the head. Sink and cockpit drains are also suspect. Do you have a depthsounder or knotmeter that is pulled at the end of a voyage, and is its plug secured? Portholes and hatches are parts of your boat's weatherproof integrity.

Possible checklist entries:

- ❑ Close through-hull fittings A, B, C, etc.
- ❑ Check knotmeter plug
- ❑ Close and dog all ports (give number to be closed)
- ❑ Close and secure main companionway hatch
- ❑ Close and secure forward bunk hatch (and, individually, other hatches)



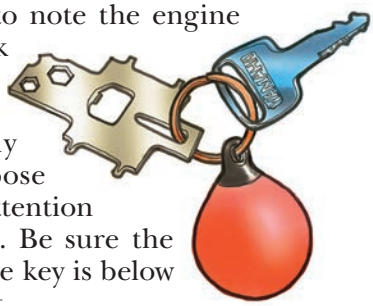
Docking/Mooring Lines

A boat is designed to balance itself moving through the water. When it stops, its stability depends on its holdfasts—and on its fittings: *Check the through-deck bolts that secure the cleats regularly.* On a mooring, mouse the buoy-line (secure it with smaller line, often with the pendant of the pick-up buoy). The principal hazard here is chafe; the line will be tugged hard against the fairlead more than four thousand times overnight. Provide chafe guard. At a dock or slip, the effects of stout timbers against a frail hull are immediate. If only one of your docklines fails, the tension system that holds your boat clear is likely to fail. Chafe guards are necessary for peace of mind. You'll sit easier in your easy chair at home if you've seen to comfortable placement of the biggest fenders you can stow, well secured at stanchions and not hung from lifelines.

- ❑ Chafe guards on mooring lines
- ❑ Mouse mooring lines
- ❑ Fenders secure and at proper height

Engine

You may wish to note the engine hours, check the crankcase oil, and inspect the engine for any fraying belts or loose fittings that need attention before another start. Be sure the ignition is off and the key is below in its designated spot.



- ❑ Engine fluids and belts checked
- ❑ Note engine hours
- ❑ Stow ignition key

Electric

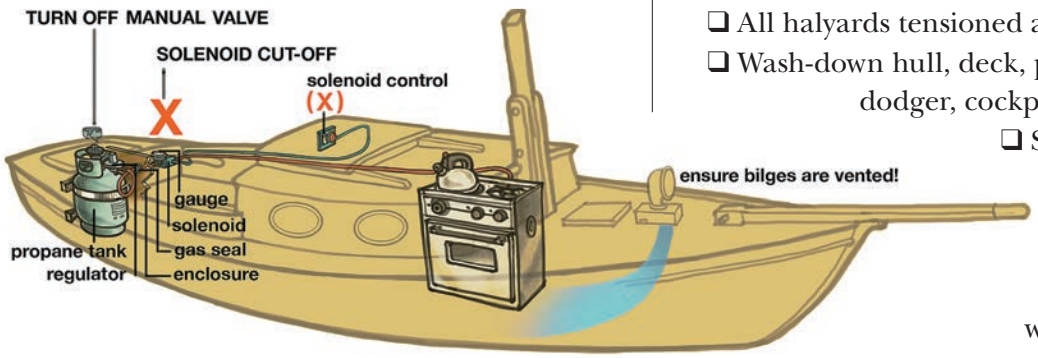
Power down all instruments in logical order and satisfy their programming protocols to save settings. Carelessly leaving instruments on drains your batteries and diminishes their worklife. When you've powered down everything but the emergency bilge pump, switch your main electric switch to "ALL OFF" and check your fuse/breaker board for compliance. At a dock or slip, you may be shifting to shore power to top up your batteries; establish the procedure for connecting the shore power line, making the transition from DC to AC, and note voltage and/or amperage on your AC panel. At a mooring, many boats trickle-charge batteries with a bank of solar cells; establish the protocol for setting this system.

Some skippers keep an incandescent bulb burning below; this is for the heat, not the light, as it sets up convection currents that help dry the boat.

- ❑ Power down radar, autopilot, course ploter, etc.
- ❑ Main battery switch to All Off
- ❑ Shore power plugged in, dock switch On
- ❑ Solar charger set up and operating
- ❑ Designated cabin light on
- ❑ Emergency bilge pump on; float switch checked

Cabin

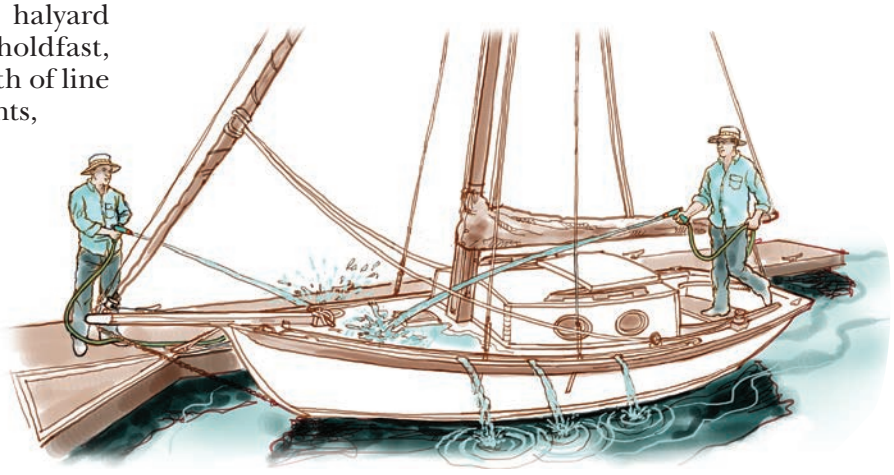
Drain and rinse out the ice chest, which will seize on any small bit of overlooked food, even labels, to ferment and cause a mighty stink. Unsealed food of any kind is an invitation to wharf rats and insects. Be certain everything is out of the oven and/or microwave. Garbage and recycling must be taken ashore to keep a fresh, welcoming cabin. Check for crew items inadvertently left behind; missing small things (cell phone, reading glasses, prescription sunglasses, prescriptions, etc.) can be especially inconvenient, and fetching them from a moored boat or a locked, restricted dock can be difficult.



- ❑ Galley clean
- ❑ Oven clear
- ❑ Propane switch Off
- ❑ Ice chest empty, rinsed, and propped open to dry.
- ❑ Final check for crew items: drawers, lockers, head
- ❑ Waste and recycling bagged and ready to go ashore
- ❑ All halyards tensioned away from mast
- ❑ Wash-down hull, deck, ports, dodger, cockpit
- ❑ Snap-on canvas covers over handholds, dodger windows, binnacle, winches, etc.

On Deck

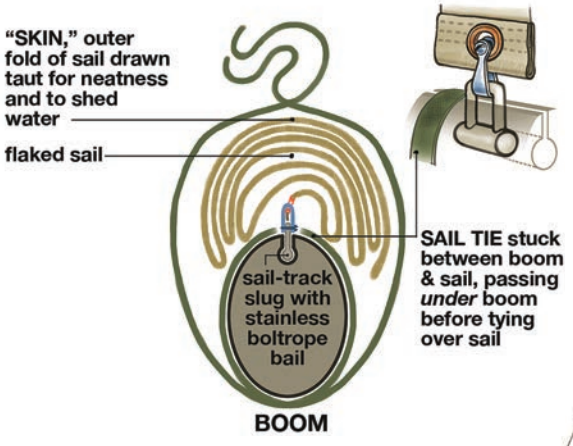
Secure your main (and mizzen) halyard shackle to a convenient, safe holdfast, usually off-mast). Use a short length of line to bunch your halyards, flag pendants, guylines, and topping lifts with several round turns or with a rolling hitch, then secure this line to a shroud to tension them away from your mast. The wind chimes of your slapping halyards may sound good to you, but they will impose themselves on the sleep of everyone in the harbor. At a dock where fresh water is readily, cheaply available, fastidious skippers hose away the inevitable gurry and salt-cake, to leave the deck, the hull (which has passed through the harbor's crud), and most particularly the dodger and porthole "glass" clean and clear. Among the last bedtime chores will be the installation of various protective canvas covers, if you use them.

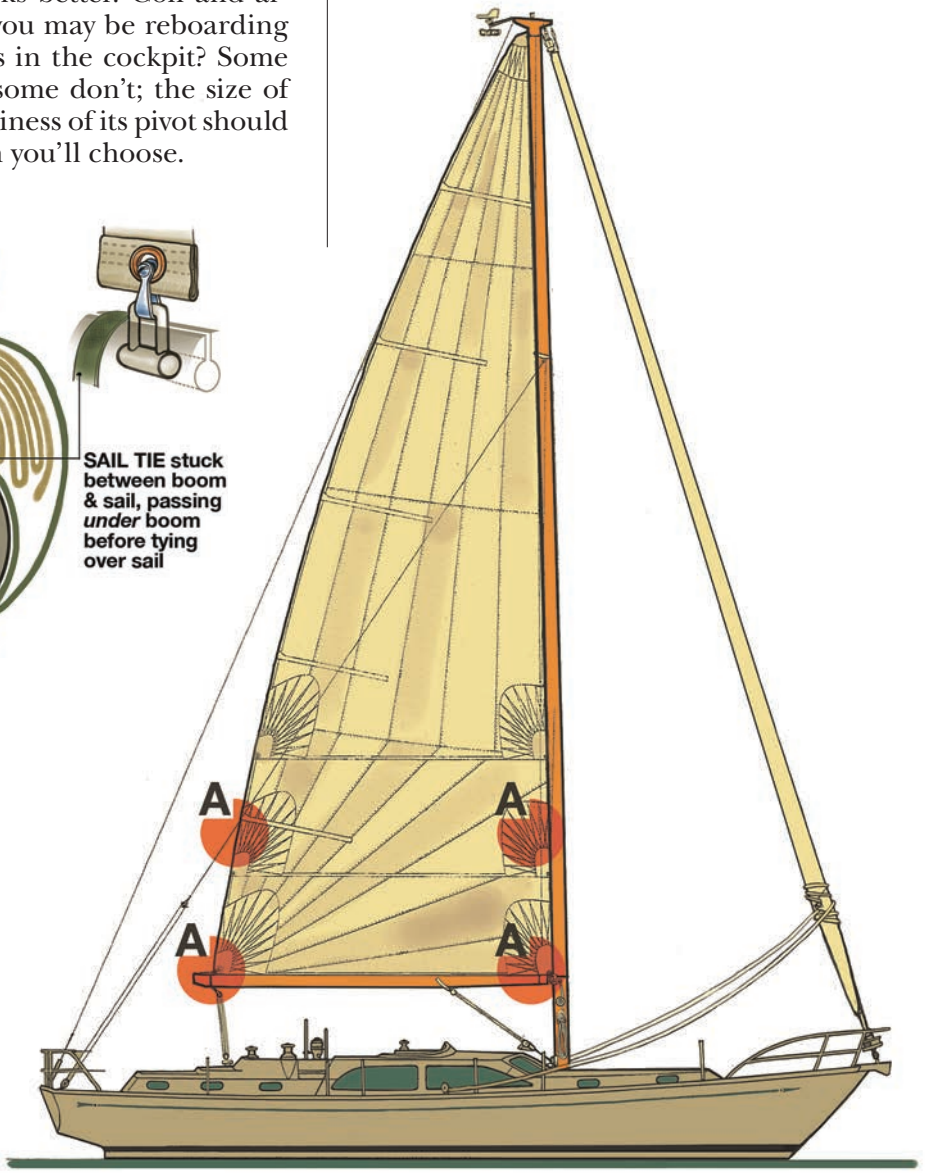


Sails

Relieve the tension on outhauls, downhauls, cunninghams, etc., to avoid altering sail shape. If you fly a roller-furling genoa, tension both sheets equally and firmly, and belay them. Flake and harbor furl the mainsail and other boomed sails with a final-flake "skin" that sheds water. Stow bagged jibs or staysails below in their designated bags. Rig the traveler amidships and belay it to avoid boom-swing; or lash booms onto their gallows. Deploy sailcovers and secure them smoothly; they'll prolong your sails' working lives by years. Tension topping lifts and lazyjacks—just because it looks better. Coil and arrange sheet-ends neatly; you may be reboarding at night; why leave a mess in the cockpit? Some skippers lock the wheel, some don't; the size of your rudder and the sturdiness of its pivot should help you determine which you'll choose.

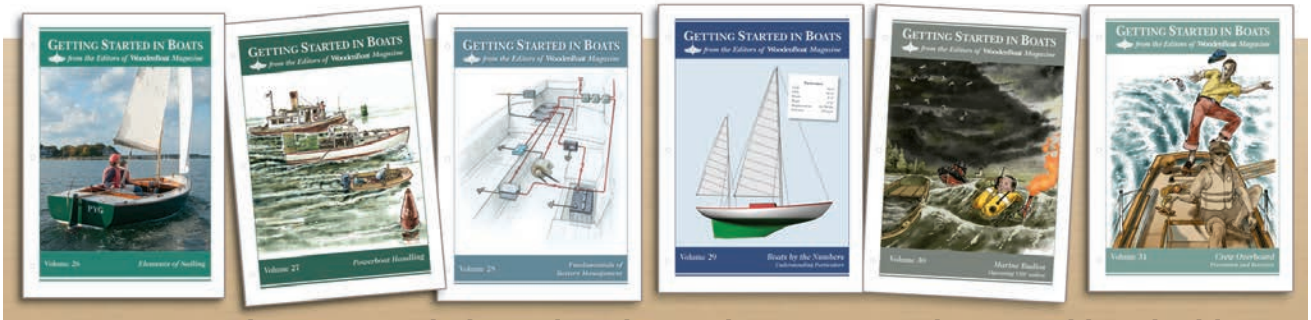
- ❑ Un-tension outhaul and downhaul
- ❑ Pair up genoa sheets and belay
- ❑ Coil and stow all running rigging
- ❑ Harbor-furl and secure mainsail (and, specifically, any other sails)
- ❑ Haul traveler amidships and belay it
- ❑ Rig sail covers securely
- ❑ Even-up lazyjacks (and, specifically, other rigging lines)





Checklist Formats

Many skippers have their checklists laminated, and they check off the items with a whiteboard marker. Some have them printed and three-hole punched, one for each voyage, as part of a ring-bound log. Choose a style that works for you.



Getting Started in Boats is dedicated to those who are new to boats and boatbuilding. Please tear out and pass along your copy to someone you know who will be interested.

Earlier volumes of *Getting Started* are available in past issues of *WoodenBoat*, and as PDF (electronic) files, from The WoodenBoat Store, www.woodenboatstore.com

WILFRED DEDERER (BOTH)

A new museum is devoted to the maritime history of the island of Bequia, including whaleboats. The building (inset) has sweeping views of the islands to the south.

shore fishing, is also displayed. Related exhibits surround the boats, and photographs document the extensive boatbuilding that went on in the late 19th century in Bequia. For the cargo and passenger trades, sloops of 40′ long and schooners of between 80′ to 100′ long were built here, all by hand and eye. The largest schooner ever built in the Lesser Antilles was the Bequia-built three-master GLORIA COLITA, 165′ LOA. The trade routes typically ran between St. Vincent, Trinidad, and Barbados, but the vessels sailed south to British Guiana and north among all the islands, as far as Cuba and Mobile, Alabama.

"When I first set foot on Bequia in 1971, the foreshore was like a **living maritime museum**, alive with the sounds of adze and plane, mallet and caulking iron. Wooden vessels of all sizes were being built, repaired, or careened at the head of the harbor. Sailmakers stitched canvas, burlap, or Dacron by hand. When the cry went up that whales had been sighted, the entire population streamed over the hills to watch the latest humpback to be successfully ironed as it was brought to the tryworks on Petit Nevis, a small cay off Bequia's south side. Those days are for the most part gone, but it is a fine thing now to have the Bequia Boat Museum to keep their memory alive."

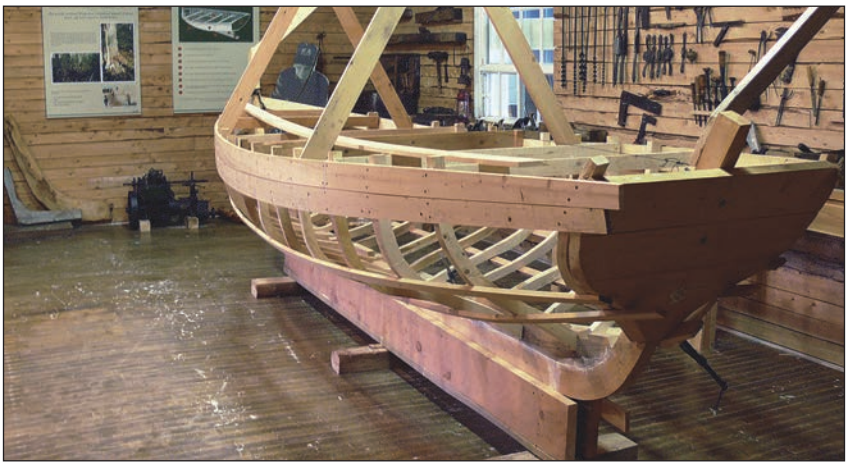
"I thought I would find wooden boats everywhere in **Newfoundland**," Philippe du Chateau writes from Virginia. "I searched during a one-month trip there last summer and saw maybe three—one of which was the schooner LEAH CAROLINE, built by local builder Henry Vokey (see Launchings, WB no. 233). One of the others, though, was a derelict. So I was all the happier to make the trip to the **Wooden Boat Museum of Newfoundland and Labrador**. It's a place not to miss, and if you get to Winterton, you can't miss it—across from the main building stand the frames of a reconstruction currently in progress of INDEAVOUR, the first decked ship built in Canada, in 1611.

"The institution is much more than a collection of old boats. True, the main building has an inshore fishing boat complete with gear dating from maybe 100 years ago, and there are newer examples of dories and a Gander River boat, all accompanied by excellent information panels. But equally important, the institution houses a boatbuilding school directed by Jerome Canning. The museum, supported last year by a $159,000 grant from the provincial government, is working to keep alive the skills and knowledge needed to build the boats native to the province: the strangely named rodneys, the punts, and the trap skiffs that were an integral part of Newfoundland's former inshore fishing way of life. The day I was there last July, I stood at the back of a dozen people in one of the outbuildings, learning about traditional 'make-and-break' marine engines, which were in regular use as recently as the 1970s. I wandered around several boats in various stages of construction in the workshop. Another shed housed a beautiful 20′ trap skiff made at the museum a few years ago.

"What you won't find in the museum are boats driven by sail, although there are pictures of fishing schooners and other sailing vessels on the walls. Needing to get to the fish no matter the wind, Newfoundland inshore fishermen abandoned sail for reliable gas engines a hundred years ago, although some did retain a small sail for steadying or emergencies.

"Why is the museum in Winterton, a north coastal town well off the main roads? A partial answer is that David A. Taylor, a Maine-born folklorist who is now is on the staff at the Library of Congress, chose to document the boatbuilding traditions of the area as a graduate student at Newfoundland's Memorial University in the late 1970s. No one knew it at the time, but through his interviews, photos, and extensive drawings, he was documenting the end of a way of life.

"More than a master's thesis came out of it. Inspired by Taylor's work and realizing what it had, the town over the next decades developed the Wooden Boat Museum, which became all the more important after the collapse of cod fishery in the early 1990s. The museum created much-needed jobs, and it has helped to preserve skills and material aspects of a way of life once



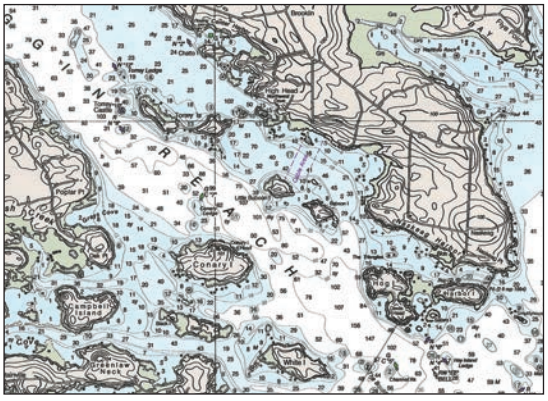
PHILIPPE DU CHATEAU

In Newfoundland, not only local boats but boatbuilding skills are preserved at the Wooden Boat Museum of Newfoundland and Labrador.

prevalent in scores of Newfoundland coastal communities. Frank French, the museum's current chairman, is the son of Marcus French, one of the eight Winterton boatbuilders that Taylor extensively interviewed for his thesis, which was published in book form as *Boat Building in Winterton*. The book was reissued in 2006 with an excellent foreword by Annie Proulx, author of *The Shipping News*. For more information, see the museum's website, www.wooden boatmuseum.com."

In Currents (WB No. 236), I wrote that the **end of navigation charts** printed lithographically by the National Oceanic and Atmospheric Administration (NOAA) was not the end of the world. The move to print-on-demand charts is now fait accompli, and evidence is mounting that the **new generation of charts** promises to be not only **as good** as their antecedents but **probably better**. One piece of evidence, which I hold in my hand, is a chart on stiff, water-resistant paper, sent to us as a sort of press release by Scott Franz at FrugalNavigator.com, a company he started "in part, to make sure I could get the high-quality navigation charts that I was accustomed to." At the time of NOAA's announcement, there were two authorized printers nationwide. By the time Franz sent his chart, in April, there were seven. Three weeks later, there were eleven; at last count, there were fourteen. (For the list, see www.nauticalcharts.noaa.gov/staff/print_agents.html.) "I'm sending you this sample chart," Franz wrote, "as a way to announce the launching of Frugal Navigator.com and to show your readers that if they, too, were nervous about the changes at NOAA, they have nothing to worry about." His price is $15.95, which also seems cheaper than the old lithographs.

"A recent riverboat trip down the **Mekong River**, an economic superhighway for Cambodia and Vietnam, showed me that **wooden boats still hold center stage here**," William Winslow writes from New York. "Fiberglass and steel have made little headway among small vessel users.



COURTESY OF FRUGALNAVIGATOR.COM

A Brooklin, Maine, detail of a navigational chart authorized by NOAA promises that good-quality paper charts won't be a thing of the past. This one is by FrugalNavigator.com, one of fourteen NOAA-authorized vendors.

RENEE DAIZIEL (BOTH)

***Above left*—Wooden boats serve as the workhorses for Mekong River transport, including bulk cargoes such as bricks. *Above right*—In a study in contrasts, many Cambodian villages maintain elaborately painted racing canoes, a mark of civic pride and competitive spirit.**

Thousands of small craft—up to 25′—serve as basic river transportation for subsistence fishermen, farmers, and merchants and as the family car.

"For less than $200, an unskilled owner can assemble a craft of six planks bent around sawn frames, the seams being filled with whatever putty can be concocted out of available materials. The local wood of choice is *Hopea odorata*, a tropical evergreen that grows to 125′, with a fine, straight trunk that can produce boards of 60′ or longer. It is extremely hard but light and rot-resistant. Its resin, mixed with sawdust, makes a durable caulking. Such canoes are everywhere, crossing a river with few bridges, ferrying fruit, vegetables and fish to market, even serving as makeshift shelters. In spite of a harsh tropical climate with blazing sun and little or no maintenance by their owners, there are craft still in use after 25 or more years.

"These are all working boats, many still propelled by human muscle. They'd win no prizes at a wooden boat show. But at the other extreme is a different story: Cambodian racing boats that every village, town, or region uses to flex its civic pride, feeling that it must sponsor a boat to avoid being labeled from the sticks. These boats are truly works of art, with elaborately painted hulls and bow carvings. They are also constructed from *Hopea odorata*, but not from planks. A suitable trunk is found. A fire is built underneath until the log splits in two. Each half, carved and smoothed, becomes one hull. To the top of this hull is attached another local wood called *srolao* which takes the sun better than

Hopea but is prone to rot if it gets wet.

"Once completed, a boat takes on a near-religious significance, with monks blessing the launching and townspeople bearing offerings while protecting the craft with large colorful umbrellas. The purpose of all this attention is to enter the annual Water Festival, held in the capital city of Phnom Penh. Over a million spectators show up for the three days of racing. Some boats are over 100′ long, with as many as 80 paddlers. The standard, however, is for 65 paddlers, and balance is critical for winning. Each boat is segmented into five sections. In the most forward, the crew kneels to maximize their collected strength. In the next three sections they sit, to be nearer the center of gravity. In the after section they push the hull, either kneeling or standing. Balance in all sections, weight distributed neither too high or too low, assures success."

The **Ancient Mariners Sailing Society** this year marked 40 years of promoting classic wooden boats on **San Diego Bay**, California. Its **Yesteryear Regatta** has been held each May since the beginning in 1974, and this year 38 boats were entered, some from as far away as San Francisco. For the event the San Diego Yacht Club had an exhibit of memorabilia from past regattas. One of the AMSS's up-and-coming events of late has been the **Kettenburg and Classic Yacht Regatta**, now held each June. The regatta started in 1994 to celebrate boats built by the Kettenburg Boat Works in San Diego. In 2011, the concept was expanded to highlight the much-admired Kettenburgs and also include other classic yachts, including powerboats.

"We had a **record turnout** for this annual classic boat event," Christopher

BOB GRIESER

AKAMAI, a Kettenburg 50, was sailed by Christopher Barclay, chairperson of this year's regatta.

Barclay, owner of the K-50 AKAMAI and the K-40 ATHENA, writes about the Kettenburg and Classic. "There were a total of 30 race entries and 15 Concours d'Élégance entries. The competitive class racing results, after running three races over two days, were exceptionally close among each of the four racing classes that we arranged. The Sunday Bay race results were rescored for boats that elected to participate in the KCY Charity Cup race, which raised money for Maritime Museum of San Diego, Ronald McDonald House Charities of San Diego, and Southern California Youth Sailing Programs. On Saturday, we sailed in winds of 8 to 12 knots and on Sunday, 10 to 12 knots.

Thirty-five yachts, many of them by Kettenburg Boat Works, sailed this year's Kettenburg and Classic Yacht Regatta in San Diego. The event is sponsored by the Ancient Mariners Sailing Society, which marks 40 years this year.

"We had a great turnout at all of our social events. The San Diego Yacht Club hosted the welcome reception at the Concours d'Élégance, and after the racing on Saturday, we enjoyed a post-race cocktail reception to the accompaniment of dueling accordions on the main deck of SDYC, with a barbecue that night.

"After the conclusion of the competitive class racing on Sunday, we held a closing reception that lasted well into the early evening. The SDYC front deck swelled with participants and cheers rang out in celebration of a great weekend. We also sang 'Happy Birthday' for the AMSS's 40th. It was a truly memorable weekend."

For more information, see www.amss.us and also www.sdyc.org/kettenburg.

Across the bar

■ **Niels Helleberg**, 74, February 21, 2014, Swampscott, Massachusetts. Born in Denmark, Mr. Helleberg studied first boatbuilding and then naval architecture at Helsingør Institute, then became a manager of new construction at a boatyard in Hundestad. In 1971, he emigrated to join John G. Alden Naval Architects in Boston, Massachusetts, where he spent most of his long career as chief designer. He arrived at Alden after the boatbuilding industry had largely transitioned to fiberglass construction, which occupied much of the company's output during his tenure. Helleberg nevertheless occasionally worked with wood construction, especially late in his career, for example with the 65′ schooner LION'S WHELP launched at Portland (Maine) Yacht Services in 2003 and the 47′11″ sloop RESTIVE launched at Brooklin (Maine) Boat Yard in 2006. Brion Rieff Boat Builder, also of Brooklin, launched two Helleberg-designed wooden yachts: the 15′ catboat THE REASON in 2001, and the 50′ cold-molded schooner MAINE EXPERIENCE in 2007. The last three

boats listed in the company database were all of wooden construction, and the company continued to market plans for classic Alden designs.

After the Alden Company closed in 2008, Helleberg, who continued designing, served the critical role—one for which he should be long celebrated by any wooden boat design enthusiast—of organizing almost a century of the company's design legacy and overseeing the donation of the collections to the Hart Nautical Collections at the Massachusetts Institutes of Technology Museum in Boston (see www.aldendesigns.com). Ultimately, he supervised the cataloging and digital scanning of the company's entire design portfolio. Mr. Helleberg closed his office in January 2014, just one month before he died.

■ **Wesley D. Wheeler**, 80, April 18, 2014, Stamford, Connecticut. Mr. Wheeler was a scion of the noted shipbuilding family of Brooklyn, New York, where his grandfather founded Wheeler Yacht Company in 1910. The company produced about 3,000 yachts and 800 military vessels in its nearly 40-year run, ending in 1948. In the 1930s, the Wheeler Yacht Company's semi-V-bottomed powerboats were particularly admired, especially the Wheeler Playmate line designed by Mr. Wheeler's father. Arguably the most famous of these semi-custom yachts was novelist Ernest Hemingway's PILAR (see WB No. 233) of 1934. Although Mr. Wheeler himself had a hand in designing some of the company's last pleasure yachts, he did most of his work after the company closed. He graduated from the University of Michigan in 1958 with a master's degree in naval architecture and marine engineering, following his 1954 bachelor's degree in mechanical engineering from Worcester Polytechnic Institute. After working for a long list of companies, he founded his own firm, Wheeler Associates Ltd., which he ran for more than 30 years. His work took him to more than 13 nations, working on a wide range of projects. In recent years, he joined with his son, Wes Wheeler, in designing an updated "PILAR Model" of the Wheeler Playmate, incorporating alterations made to serve Hemingway's sportfishing passion.

■ **Dennis Holland**, 68, May 12, 2014, Newport Beach, California. Mr. Holland had a taste for dreaming big. At 24, he started building a full-scale replica of a Revolutionary War ship, 118′ on deck, documented by Howard I. Chapelle. He launched her as PILGRIM OF NEWPORT in 1983 after 13 years of work, then operated the vessel on whale-watching and day-trip charters for years. Ultimately, he sold her to Ocean Institute, which renamed her SPIRIT OF DANA POINT. Later, Mr. Holland turned his attention to a derelict 72′ sailing yacht, SHAWNEE, launched in 1916 by George Lawley & Son. He got her for nothing more than a promise to restore her, and to that end he had her trucked to his house in 2006 and set up in his side yard. As years went by, neighbors complained, finding the outsized project overwhelming and interminable. The city government sued to force him to move the looming boat; he countered that a city ordinance targeted him alone and the boat couldn't be moved safely. Ultimately, he was forced to largely dismantle her, which was accomplished by the end of 2013, coinciding with a worsening of the cancer that took his life.

■ **Philip Thiel**, 93, May 10, 2014, Seattle, Washington. Mr. Thiel (profiled in WB No. 222) had a varied career, starting with naval architecture as a 1943 graduate of the Webb Institute of Naval Architecture. A native of Brooklyn, New York, he went to work with boatbuilder Dana Story in Essex, Massachusetts, but returned to school for a 1948 master's degree from University of Michigan in naval architecture. He started an academic life, teaching at Massachusetts Institute of Technology, where he developed another keen interest, this time in architecture and urban design, obtaining a bachelor's degree in architecture in 1952. He worked with architecture firms but then returned to teaching, first at the University of California, Berkeley and, in 1961, at the University of Washington. He drew on broad influences, ranging from the elegance of Japanese architecture to human-scale visual design that sought to celebrate the importance of such things as "pocket parks" and advocate an urban design that understood how people relate to cityscapes. Those influences resurfaced in his 1970s return to boat design, in which he experimented with pedal power for boats ranging from dory types to shantyboats, most notably his commodious Escargot design for canal cruising.

■ **Farley Mowat**, 92, May 6, 2014, Ottawa, Canada. A prolific writer on issues of environmental concern and the plight of Arctic native peoples, Mr. Mowat published 45 books in his long career, perhaps most famously *Never Cry Wolf*, *A Whale for the Killing*, and *People of the Deer*. His was the life of an activist and advocate, and in 1985 he was famously barred from entry into the United States as a "subversive," which seemed either comical or pathetic even at the time. For those who shared his passion for boats, however, he will be forever remembered as the author of the humorous 1969 book, *The Boat Who Wouldn't Float*, about the tribulations of acquiring a wooden schooner in Newfoundland for a voyage to Ontario. With a keen interest in maritime history, he was an early advocate for the view that Norse voyagers reached North America long before Columbus, a fact later confirmed by archaeology. In *Farfarers: Before the Norse*, of 1998, he took the idea further, arguing persuasively if somewhat fancifully, that European walrus hunters routinely penetrated Canada's high Arctic long before Leif Ericson's saga-celebrated voyage.

■ **William E. Abbott**, 91, April 21, 2014, Belfast, Maine. A 1945 Maine Maritime Academy graduate, Mr. Abbott started his career as an officer on oil tankers but after a year became a ship's pilot on his home waters of Penobscot Bay and River and continued in that role for 54 years. He founded the Penobscot Bay and River Pilot's Association and was appointed to the state Pilots Commission. He earned a reputation for mentoring other pilots, and he was the last pilot to regularly dock ships using steam-powered tugboats. He maintained a keen interest in the maritime history of Maine and in wooden boats. He played a key role in organizing the Maine Retired Skippers Race, and for 15 years he raced at the helm of WAGON BOX, a 1978 L. Francis Herreshoff–designed 30′ ketch owned by his friend Dr. James Delehanty.

The Antique Boat Museum

Time travel in a powerboater's paradise

by Jay Picotte

Photographs by James Scherzi

In a time when many of us are inundated with and preoccupied by the stimulation of streaming videos and social media, a museum might seem stodgy and mundane. The word "antique" in the institution's name might create an even more challenging thing to sell in today's world. But the Antique Boat Museum (ABM) in Clayton, New York, is neither stodgy nor mundane. It is alive, and thriving.

For many museums, attendance has been in a steady decline in recent decades. In an effort to appeal to young visitors and changing demographics, a number of them have used technology—often to good effect—to create so-called "interactive" exhibits. The ABM, too, is interactive—if interactive means sailing, rowing, or roaring around the Thousand Islands aboard a gleaming mahogany runabout.

Simply put, the place is a model of the potential for small maritime museums in America. With a 4.5-acre campus on the site of a historic lumbermill on the banks of the St. Lawrence River, a number of recently built handsome buildings, and almost two thousand feet of dockage for museum boats and visitors, the ABM is home to one of North America's largest antique boat collections. When I visited in June, it had been about 15 years since I'd been there. I hardly recognized the place, for it has grown and changed in the time I've been away. But its core values have remained firmly in place: It collects, preserves, and celebrates boats in a decidedly exciting and enjoyable manner.

***Above*—The Antique Boat Museum in Clayton, New York, is North America's premier freshwater boating museum. Spread over 4.5 acres and several buildings, it is home to more than 300 rare watercraft. Above is the Quest for Speed exhibit in the museum's Gold Cup Building, which showcases the history of powerboat racing.**

The Antique Boat Museum contains not only powerboats, but also a range of sail- oar-, and paddle-powered craft. Included in the price of admission is the opportunity to row a traditional St. Lawrence Skiff from the museum's waterfront.

What makes the ABM special? It's not just the incomparable collection of motors and watercraft on display; it's also the depth of the research collection. Nowhere is this more evident than in the museum's research library, where the history of recreational boating is a serious academic discipline.

As a research facility, the ABM offers the state-of-the-art Lou Smith Library and Marion Clayton Link Archives, which are fully accessible to the public. They contain an excellent collection on boating, boatbuilding, engines and motors, regional history, magazines, and almost 10,000 photographs dating from the late 1800s. It's the kind of place where a boatbuilder or restorer could solve any number of puzzles or just hole up for the winter and never be bored.

The museum has a well-deserved reputation as the "go to" place for freshwater powerboat history, information, and advice, and they support an active community of antique boat restorers all across the country. But they're far more than just old Chris-Crafts and Lymans. Their collection is vast and includes all manner of North American recreational watercraft, from St. Lawrence skiffs and indigenous sailboats, to steam and naphtha launches, and not least, an opulent 106′ houseboat built in 1903 for George Boldt, the proprietor of the Waldorf Astoria Hotel in New York. This floating mansion went on to provide lavish shelter on the river for the families enjoying the prosperity made

The 28′ TEAL is one of the museum's newer boats. It was built by Gar Wood Custom Boats of Brant Lake, New York, in 1989, to a 1939 triple-cockpit runabout design by Gar Wood himself.

possible by Life Savers candy and Rand McNally publishing before being donated to the ABM in 2005.

Emmett Smith, the museum's 29-year-old curator, comes from an extended family of well-known builders, restorers, and watercraft curators from upstate New York and the Adirondacks region. He is forward-thinking and idealistic, and moves in a world of artists, boatbuilders, and mavens of the contemporary Maker Movement. He clearly has his finger on the pulse of the classic-boat culture. "Boating," he said, "is a great lens through which we can explore our culture and history. I want to make it more of a part of the conversation." He then articulated his curatorial philosophy: "Recreational boating is an important part of our national story—and it's not as appreciated as it should be. I think it says a lot about who we are as a culture, our need for freedom, and our belief in investing in recreation and self-driven activities. When you get out on a boat on the water, you can go in any direction you want, and soon you may find that you're on a waterway that's connected to the whole world."

The museum's 106′ houseboat LA DUCHESSE was built in 1903 for George Boldt, then-manager of New York City's Waldorf-Astoria hotel. Until its donation to the museum in 2005, the boat was in continuous use as a summer residence.

And then there are the boats—more than 300 of them, along with more than 1,000 boating artifacts. The sensitivity with which they're interpreted, used, and displayed—even when in storage—is a rarity. Too many museums have large collections that are mostly inaccessible to the public. The ABM, on the other hand, has a modern 2,000-sq-ft storage

The Thousand Islands: An oasis for powerboaters

For over 100 years, the Thousand Islands region has been an oasis for boaters. The archipelago, spanning about 50 miles on the St. Lawrence River between Lake Ontario and Montreal, actually includes closer to 1,800 islands. Because of a combination of currents, islands, and shoals, navigation is tricky for larger sail boats. But the place is ideal for small powerboats.

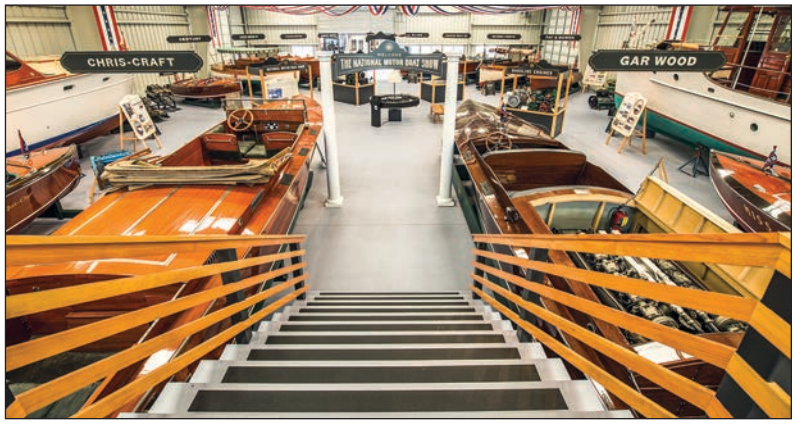
Beginning in the 1870s, people began visiting the Thousand Islands region and building grand summer houses. After the turn of the 20th century, around the same time powerboats were becoming more popular and accessible, there was tremendous growth here. The region quickly grew into a seasonal center of powerboat culture.

Residents of the Thousand Islands use boats the way most people use automobiles.

To this day, residents of the islands and waterfront property owners on the mainland use boats the way most of us use cars. It's the primary mode of transportation when one needs to visit a friend, go shopping, or go out on the town at night. Towns like Clayton, Alexandria Bay, Chippewa Bay, and Gananoque (on the Canadian side) are all along the river and provide a number of options for easy docking. Clearing customs as you zip back and forth from Canada to the U.S. can be somewhat of a hassle, but most locals on the water have Nexus cards that allow them to check in and out on both sides with a quick call from their cell phone. There is no end of interesting and scenic cruising among the beautiful islands, historic boathouses, and grand castles. It is an enviable lifestyle for boat lovers.

Two of the most famous and prominent castles and more visually stunning destinations in the Thousand Islands are the Boldt Castle on Heart Island, built by George Boldt, proprietor of the Waldorf Astoria and builder of LA DUCHESSE, the imposing 106′ houseboat now open to the public at the Antique Boat Museum, and the Singer Castle on Dark Island built by Frederick Bourne, president of the Singer Sewing Machine Company. Both residences feature equally over-the-top boathouses to contain small fleets of recreational boats and yachts.

—JP



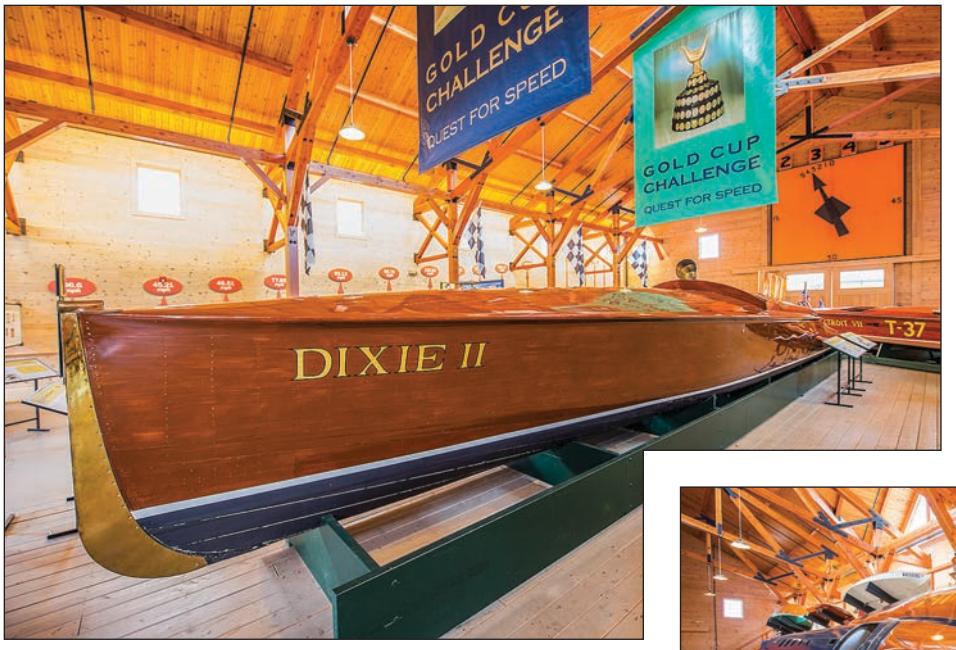
The museum's off-site Collections Storage Facility, completed in 2006, is home to about half of the museum's collection. Visitors have access to this rich assemblage of boats and motors. *Right*—The museum's National Motor Boat Show display is a collage of eras representing the legendary New York City-based show.

facility 4 miles away from its main campus, housing nearly 150 historically and regionally significant boats and motors, each with an interpretive placard. The space is orderly, spacious, and well lit, and during the summer season is open one day per week to museum visitors who enjoy free rein to wander about the collection, their imaginations running wild.

The newest exhibit at the ABM, *The National Boat Show*, opened in May. For those of us who peruse old *Yachting*, *MotorBoating*, and *The Rudder* magazines, it's a living fantasy. All too often we've seen period photographs of the boat show in New York, chock full of brand-new boats with nary a plastic hull or obnoxious vinyl graphic in sight—just row after row of rare, alluring, floating treasures. How often we've mused, "If only I could go back...." Well, you can, in a way. The exhibition in the museum's Dodge Launch Building recreates the National Boat Show in New York, with the boats and engines on display ranging from about 1900 to 1940 and representing 12 different manufacturers. The exhibit's signage mimics original period advertising material. But if only these boats were available at their original prices....

In the center of the room is an electromechanical interactive device called a praxinoscope. This large animation machine was re-created for the exhibition based on similar devices invented in the 1870s and used to show animated images in theaters. It features a strip of paper with numerous images that spin around and are viewed through a lens. For the boat-show exhibit, the strip features images of New York City, the Hudson River, and the New York State Barge Canal between 1900 and 1910 as well as the different boats that were there at the time. Smith explained, "The idea of the interactive is to show people that you can travel by boat from New York City to Clayton. Most visitors don't realize that."

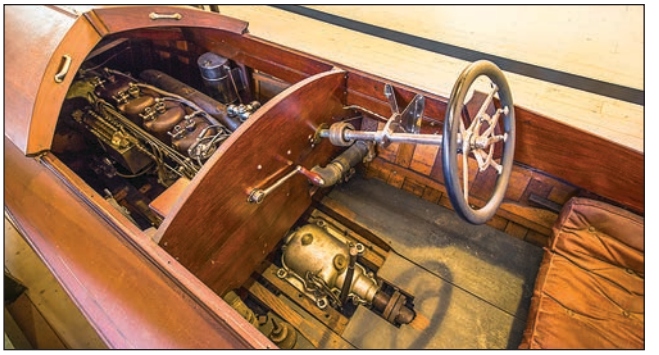
The *Quest for Speed* exhibit, located in the purpose-built Gold Cup Building, opened in 2008. It traces the history of powerboat racing, displaying by way of an informative visual timeline how the top speeds



***Left*—The Clinton Crane–designed DIXIE II won powerboating's Gold Cup in 1908 and 1909. Built by B. Frank Wood and powered by a 200-hp engine, the boat measures slightly less than 40'. *Below, left*—The diminutive LITTLE ONE II hails from the 1920s, and is preserved along with her original trailer. *Below*—The 28' SOMETHING ELSE, built by Morgan Marine in 1982, was intended for racing, but never lived up to expectations and was donated to the museum in 1991.**

gradually increased from the low 2 digits to the 200-plus-mph range. Here we also learn of the evolution of hull design from semi-displacement hulls to planing hulls, to stepped hulls, to the "three-pointers" that only contact the water at the propeller and two sponson tips. There is an exceptional fleet of boats on display here, including the 1908 Clinton Crane–designed and George Lawley–(re)built Gold Cup and Harmsworth Trophy winner DIXIE II, Gar Wood's winning MISS DETROIT VII, and my personal favorite: the well-preserved "barn-find" LITTLE ONE II, an 18′ single-step hydroplane from the late 1920s with an impressive racing history and even more impressive state of preservation. Completely unrestored but weathered in an otherwise pristine condition, she is displayed sitting on her original custom trailer built from a Dodge Bros. car chassis on which she traveled around the country from one race to another. Some of the trailer's original tires seem to be holding air. The exhibit also includes modified Packard and Liberty airplane engines and a cool array of vintage racing gear, including helmets, flotation vests, and clothing worn by racers.

The St. Lawrence Skiff also merits a permanent exhibit, as does the evolution of the canoe. "The St. Lawrence Skiff: Our Indigenous Watercraft" is particularly relevant in Clayton because of its ties to the community; the display is especially interesting because of the exceptional examples on display and for the fact



***Left*—MISS CANADA III is one of a series of boats raced by Harold and Lorna Wilson (see WB No. 238). *Right*—Built by Burton "Bub" Norris in 1907, the racer ATOSIS appeared in the water at the museum's 1987 boat show. The leather cushions are the originals, which Norris sat on when winning races more than 100 years ago.**

The museum's Skiff Building includes an impressive display of the Clayton region's famous St. Lawrence Skiffs. The exhibit details the genesis and longevity of these fine small boats, and how they were used as utility boats, pleasure craft, and even racers.

that after learning about the history of the boats and the various types from the exhibit, visitors can actually get in one and row around the river.

In the skiff livery, five staff attendants managed to usher 1,150 visitors into skiffs for a row on the river last season. At the ABM, there is much emphasis on getting people out on the water. These efforts include boatbuilding, junior sailing (in plywood Optimist prams), and teen and adult sailing in Comets, Sunfish, and catboats. In a remarkably generous effort to introduce more people to boating, every Tuesday evening from 5:30 to 8:00 during the season the museum offers free rowing and sailing (with instruction if needed) to the public.

There are other opportunities to get on the water here, and the museum offers a rotating roster of boats that changes every year. For no cost above the $13 admission fee, all visitors can have a quiet row or sail on the protected waters of French Creek Bay. For those seeking more speed and adventure, exciting 45-minute rides on the varnished mahogany triple-cockpit Hacker-Craft MISS 1000 ISLANDS II, or the Gar Wood runabout TEAL, can be had every hour on the hour, for a nominal fee. It's a bargain-priced experience: Not only does one enjoy the thrill of high-speed boating with a runabout's distinctive, deep rumble, but he or she will also get a tour among the many islands, summer camps, and boathouses that characterize the Thousand Islands region. (A wheelchair lift allows easy access for the disabled.)

Larger boats currently part of the in-water fleet include two Hutchinson boats built in nearby Alexandria Bay, New York; they are GADFLY, a 1931 sedan commuter, and WILD GOOSE, a 1915 launch. (WILD GOOSE's silhouette is the ABM logo.) The two larger yachts, ZIPPER, a 41′ commuter yacht built for the Stroh's Brewery family that is Coast Guard–certified for 15 passengers, and PARDON ME, a 48′ custom-designed runabout by John Hacker, are both back in the water this year after extensive refits.

Which raises the question: How does a museum maintain such a fleet of commissioned wooden boats? The operation, I found, is surprisingly simple. "Each boat has its own schedule," said David Dodge, the museum's in-water fleet coordinator. "Whatever the boat needs, the boat gets." It helps that the boats are kept in excellent working order requiring only routine maintenance and repair. In the cases of the larger ZIPPER and PARDON ME, when the time came for more significant work, the museum knew their limitations and brought them to experienced yards for their overhauls:

The 30′ Hacker runabout MISS 1000 ISLANDS II joined the museum collection in 2006; the current-day Hacker Boat Company donated their time in 2012 to restore the boat. On the opposite dock is the bright-hulled 42′ commuter boat ZIPPER, which was donated to the museum by the Stroh family in 1985 with the provision it be kept in service to take visitors on the water. Ahead of ZIPPER is the privately owned THAT'S HER.

If You Go

Located directly on the banks of the St. Lawrence River, about 20 miles northeast (or downriver) from Lake Ontario, the small village of Clayton was a busy lumber and shipbuilding port throughout much of the 19th century. Later, it became known for the graceful St. Lawrence skiffs built there—a boat originally meant for fishing, but eventually becoming the symbol of the Thousand Islands region. Today, a quick stroll down Clayton's Riverside Drive reveals a vibrant small community anchored by the Antique Boat Museum, the Clayton Opera House, and the bustling hardware store.

Clayton is a refreshingly authentic and largely intact 19th-century village. It's not touristy, it's not fancy, and it's incredibly picturesque, perched on the edge of a peninsula reaching out into the mighty St. Lawrence. It's pleasantly reminiscent of an era before chain restaurants, big-box stores, and suburban sprawl.

Getting to Clayton, and the greater Thousand Islands region, is possible by flying into Montreal, Albany, or Watertown, New York, or by driving. For details, visit www.1000islands-clayton.com. *—JP*

ZIPPER spent the past winter at Rockport Marine, and PARDON ME at Brooklin Boat Yard.

Another factor that helps keep maintenance manageable is that the boats are kept in fresh water in a covered boathouse, greatly reducing the amount of annual varnishwork that might otherwise be required. Besides Dodge, there is one full-time boatwright on staff, one part-time mechanic, and a corps of volunteers (about 200 in total for the museum) providing about 10,000 hours of labor annually. Also, Dodge manages a staff of 30 Coast Guard–licensed captains to run the powerboats, most of whom volunteer their time. To give a sense of the scale of this boat-ride operation, last season the 30′ MISS 1000 ISLANDS II runabout hosted an astounding 1,700 passengers.

The museum has also benefited from the generosity of companies such as the Dutch paint and varnish manufacturer Epifanes, which provides varnish, and The Hacker Boat Company and Gar Wood Custom Boats, which have provided refinishing on MISS 1000 ISLANDS II and TEAL. There is a general budget to maintain the boats in the collection and a special board reserve fund set up for larger projects as the board sees fit—such as the ZIPPER and PARDON ME refits.

Different boats are rotated into the in-water fleet every year, allowing some to receive maintenance and rest while others get some exercise and use. This practice eliminates the necessity and urgency of having to commission any boat every year. There is no set

schedule about which boats will go in the water or when; rather, it is a decision made by committee based upon a number of factors. This year, for example, WILD GOOSE will go in because, as the museum "logo boat," it is important to have her take part in the 50th Antique Boat Show festivities. ADDIE, a 21′ "skiff-putt"—a St. Lawrence skiff designed and built for use with a small inboard motor—will be relaunched because she was just repowered with an Elco electric motor by a keen group of volunteers.

Each spring, the museum hosts symposia on boatbuilding, maintenance, and restoration. In the summer months, there is a camp that includes play time, crafts, modelmaking, and boat trips—all designed to teach kids about boats and the St. Lawrence River.

Marv Hart (left), a museum trustee and volunteer, and Dan Miller, former curator and local boatbuilder, take measurements in the museum boatshop, where the fleet is maintained and new boats built.

The emphasis on kids is, in a very real way, an investment in the future of the museum, which is serious about cultivating the next generation. Just as the ABM has done an extraordinary job with its collections, exhibits, and programming, it's also done a remarkable job in fundraising. A steady history of giving by passionate supporters has enabled the ABM to continually grow at a steady pace into one of the largest freshwater maritime museums in the world. The 2014 season marks the 20th anniversary of the roll-out of the very successful "Friends of the Museum" annual giving program. Supporters can become "Friends" for a commitment of annual gifts at one of five levels between $1,000 and $25,000. There are more than 80 members or couples who've given for 20 years straight. In the challenging world of nonprofit fundraising, that's an astounding statistic and confirmation of the allure of the museum and the devotion of its supporters. According to director of advancement Rebecca Hopfinger, "The Friends have provided us with the majority of the resources to do what we do." Of course there are benefits to being a "Friend," including use of the museum's larger watercraft for private excursions or events. Fleet coordinator David Dodge informed me that ZIPPER takes out 1,500 friends each summer.

ABM Boatwright Jamie St. Onge tends to the deck of REBECCA, one of the museum's many sailboats. The museum also sponsors maintenance seminars for boat owners.

This year, on the first two weekends in August, the museum will celebrate its 50th annual boat show, parade, and the 11th running of the Raceboat Regatta (a race for vintage racing powerboats). These events are legendary in the Thousand Islands region and are, by far, the biggest draws of the season. Last year 4,500 people showed up for the Saturday auction, when 40 boats were on the block, with a staggering 6,700 tickets sold for the entire weekend. This year the boat show should see about 100 boats on display in the water, with an additional 25 on land—and 30–40 engines as well.

If executive director Fritz Hager has his way, there will be continued slow but deliberate growth of programming space, retail operations, Web presence, archives, and research center, with more living exhibits of boat building and servicing, and engine repair. And there will be even more accessible storage. Curator Emmett Smith forecasts more collaborations with other cultural institutions, publishing firms, film companies, and other media. "As part of our growth, we need to capture our unique scholarship in a way that can be made available across the country," he said.

Clayton, New York, may be off the beaten path, but it's well worth the trek. Rebecca Hopfinger said it well: "When people come here, I think they are drawn by an irresistible allure from the energy and many moods of the river and the romance of these beautiful boats. They literally and figuratively transport us, across the river and back in time."

I'll take that over Facebook any day of the week.

Jay Picotte, a regular contributor to WoodenBoat, *is the former curator of the Museum of Yachting in his hometown of Newport, Rhode Island.*

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HARRY BRYAN (BOTH)

A Deep-Reach Clamp

For hard-to-get-to areas

Text and drawings by Harry Bryan

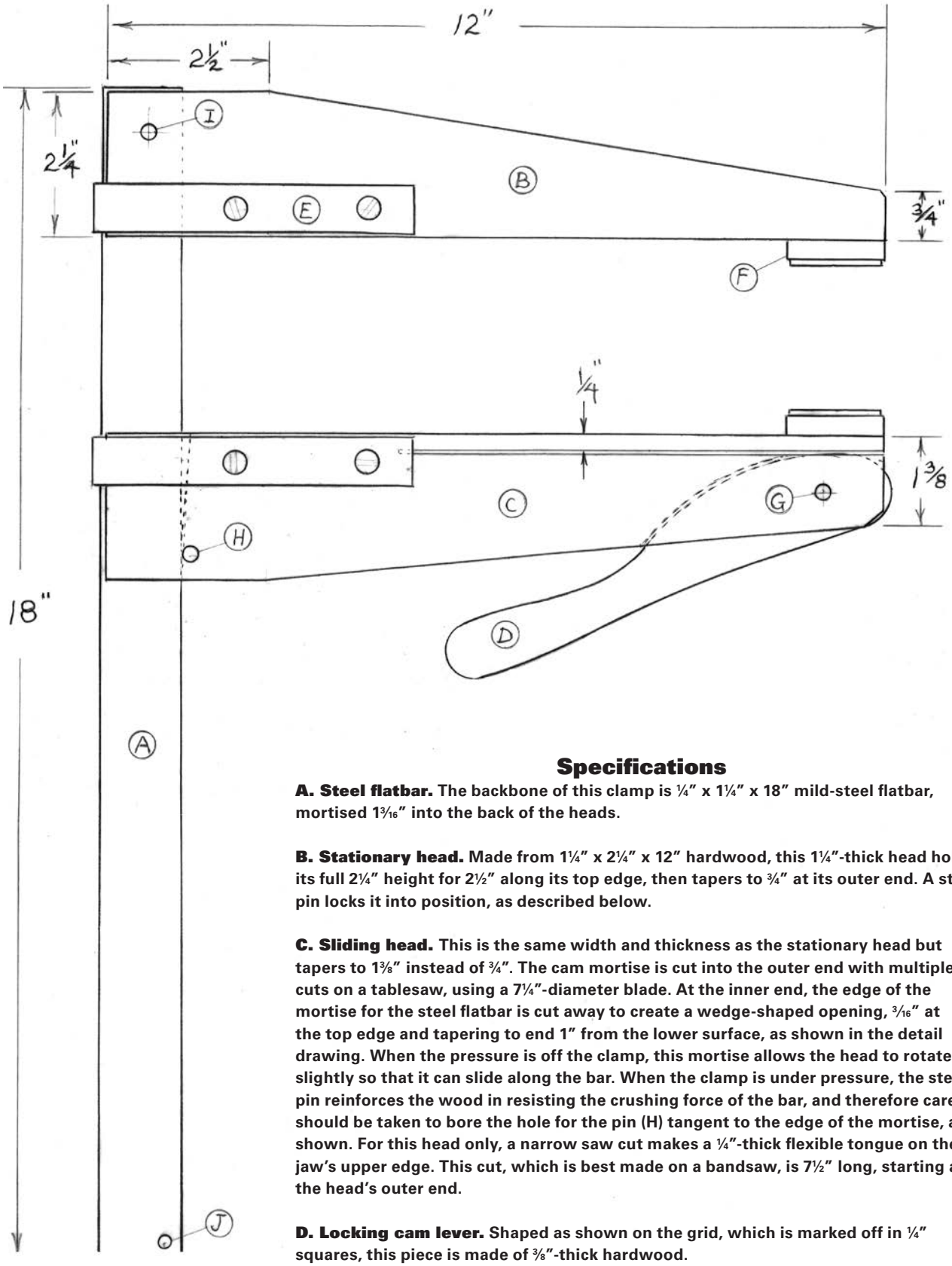
"A boatbuilder cannot have too many clamps," according to the old adage. The saying contains much truth. Even with a rack full of clamps, the number or variety can still seem limited. And it is surprising how often an area that needs pressure is just beyond the reach of the deepest clamp you have.

The clamps of choice in our shop tend to be the lightweight Jorgensen sliding-bar type, yet they have an effective reach of only 2½", measuring from the inside edge of the bar to the center of the swiveling pad. The heavy-duty version reaches 3½", and I have cast-iron C-clamps that have a 4½" reach. I finally purchased two heavy-duty iron clamps with a 7" reach, but their bodies are curved, which limits their reach if the project being held together has much thickness to it. Also, they weigh over 6 lbs apiece, each one cost nearly $40, and to top it off they've been discontinued.

The difficulty in locating clamps with really long reach has much to do with engineering challenges associated with making this type of clamp. A clamp should be designed so that it will not be permanently distorted by the force applied to it by the muscles of the human hand. If we assume that this is the case with my Jorgensens, then doubling the 3½" reach of the jaws with no other design changes would mean that I could only apply half the pressure without damaging the clamp. It would be difficult for me to keep from taking that extra turn, which would lead to a call to the

***Above*—Sliding bar clamps are extremely useful in boatbuilding, but sometimes a deep reach is more important than powerful clamping pressure. This shop-made bar clamp, using steel bar and steel-reinforced wooden heads, has a 10½" reach. Its cam lever exerts about 100 lbs of pressure, making it adequate for many boatbuilding tasks where reach is critical.**

A Deep-Reach Clamp



Specifications

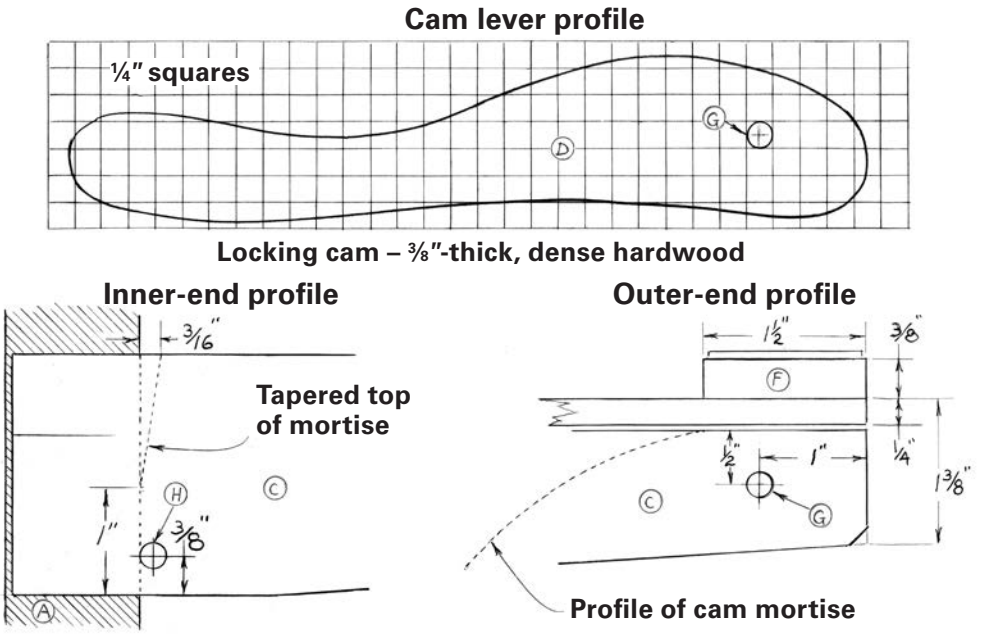
A. Steel flatbar. The backbone of this clamp is ¼" x 1¼" x 18" mild-steel flatbar, mortised 1³⁄₁₆" into the back of the heads.

B. Stationary head. Made from 1¼" x 2¼" x 12" hardwood, this 1¼"-thick head holds its full 2¼" height for 2½" along its top edge, then tapers to ¾" at its outer end. A steel pin locks it into position, as described below.

C. Sliding head. This is the same width and thickness as the stationary head but tapers to 1⅜" instead of ¾". The cam mortise is cut into the outer end with multiple cuts on a tablesaw, using a 7¼"-diameter blade. At the inner end, the edge of the mortise for the steel flatbar is cut away to create a wedge-shaped opening, ³⁄₁₆" at the top edge and tapering to end 1" from the lower surface, as shown in the detail drawing. When the pressure is off the clamp, this mortise allows the head to rotate slightly so that it can slide along the bar. When the clamp is under pressure, the steel pin reinforces the wood in resisting the crushing force of the bar, and therefore care should be taken to bore the hole for the pin (H) tangent to the edge of the mortise, as shown. For this head only, a narrow saw cut makes a ¼"-thick flexible tongue on the jaw's upper edge. This cut, which is best made on a bandsaw, is 7½" long, starting at the head's outer end.

D. Locking cam lever. Shaped as shown on the grid, which is marked off in ¼" squares, this piece is made of ⅜"-thick hardwood.

Sliding-head Details



E. Steel straps. These straps, of ⅛" x ¾" x 10" mild steel, are bent cold around the slotted inner ends of each of the heads. Solid contact with the back edge of the steel flatbar is a must. Fastenings are No. 10 x 1" steel screws, staggered as shown in the detail drawing.

F. Hardwood blocks. These blocks, as shown in the detail drawing, are glued to the jaw ends and have leather pads glued to their faces.

G, H, and I. Steel pins. All these pins are ¼"-diameter steel. Pin G, located as shown in the detail drawing, allows the cam lever to rotate. Pin H in the sliding head, also shown in the detail drawing, is set so that its outside diameter bears against the edge of the flatbar during clamping. Pin I, which locks the stationary head in position, is centered on the steel flatbar ½" away from the top edge of the head.

J. Stop pin. This ¾"-long pin, which simply prevents the sliding head from slipping off the end of the flatbar, can be made from a 16-penny nail filed to a jam fit in the steel flatbar.

WYATT LAWRENCE

So often, boatbuilding requires clamping in areas that are awkward to reach. A versatile quiver of clamps helps to work around obstructions.

customer complaints department. It is possible to locate industrial-quality clamps with significant reach, but they will be extremely heavy and costly for the needs of small-boat builder. For example, a Bessey clamp with a 12″ reach retails for about $160.

The clamp detailed here has a reach of 10″. Steel straps, positioned to absorb tension stresses, increase its strength over the small German-designed wooden cam clamps that I used as inspiration for this design. The pressure that can be applied by the cam is self-limiting, so this tool's forté will be its reach, not its clamping power. Nevertheless, it exerts more than 100 lbs of force, which is adequate for holding pieces of a wide assembly together while they're being fastened or glued.

The drawings and specifications provide sufficient detail to complete the project. Hardwood parts should be of maple, beech, or an equivalent strong, fine-grained species. The bar, straps, and pins are all of mild steel.

Contributing editor Harry Bryan lives and works off the grid in Letete, New Brunswick. For more information, contact Bryan Boatbuilding, 329 Mascarene Rd., Letete, NB, E5C 2P6, Canada; 506–755–2486.

CONTENT to the Last

by David Kasanof

PETE GORSKI/R. GORSKI

I have been looking over some previous Fo'c's'les and remembering events aboard my old gaff-rigged cutter CONTENT that found their way into many of those columns. I can truly report—and I know you've been waiting to hear—that the journey they represent has been well worth the effort. If it had been an actual cruise I would say that it had been made without running aground or getting lost, and with all hands still on speaking terms with one another. If my actual cruises aboard CONTENT had been as flawless, I would probably not have had as much material for Fo'c's'le.

That's not to say that everything always went as planned. My "good seawife" and I had originally fallen for that old siren song that goes, "We'll buy an old gaffer, fix her up, and sail around the world before settling down ashore." Surprise! Surprise! The "fix-her-up" part never could get finished, 30 or so years flashed by, and I was transformed from a dude to a geezer before I knew what happened.

Now I live with my second wife within about a mile of the Hudson River. Previous Fo'c's'les are in an old sea chest where I can still get a salty remembrance and an occasional laugh. The columns are a reliable link to the past, because I rarely made anything up completely. (But as Mark Twain said, there are some "stretchers.")

I told the truth, mainly, when I described the time I rowed my two large dogs ashore one night off some town on the north side of Long Island Sound. Good citizen that I was, I didn't want to leave the beach befouled so I used an oar blade to scoop up and then to fling the offending "dark matter" into the summer night in what I thought was a "safe" direction. My first inkling that something had gone wrong was that there was no splash. There was, however, what may have been the distant human cry of outrage. I didn't hang around for clarification. It all landed, so to speak, in the Fo'c's'le.

My good seawife, an excellent sailor and a hell of a cook, contributed more to Fo'c's'le than either of us were aware of at the time. She made CONTENT a happy ship and a magnet for folks from the general neighborhood of wherever CONTENT was docked. Naturally, I became the sponge for all the tales told and all the hilarity in CONTENT's cabin. Much of that, too, ended up in the Fo'c's'le.

Although it has been a great cruise, I'm getting a bit long in the tooth to keep it up. So this is my last Fo'c's'le. Thanks to all my readers and, as a previous Fo'c's'le admonished, don't spit to windward.

Fo'c's'le first appeared in WoodenBoat *No. 2 (November/December 1974). At that time, David Kasanof had recently ceased publishing his own newsletter,* Classic Boat Monthly, *whose subscriber list seeded founder Jon Wilson's early efforts with* WoodenBoat. *A compilation of Fo'c's'le columns was published in 1997 by Sheridan House, and Kasanof's writing also appeared in* The Rudder *magazine. We thank David and wish him fair winds in his well-earned retirement.*

Our thanks also to illustrators Pete and Dick Gorski. Dick's drawings appeared here through WB No. 161 (July/August 2001); upon his death, his son Pete picked up the pen, continuing Dick's (almost) inimitable style for the past 13 years. —Eds.

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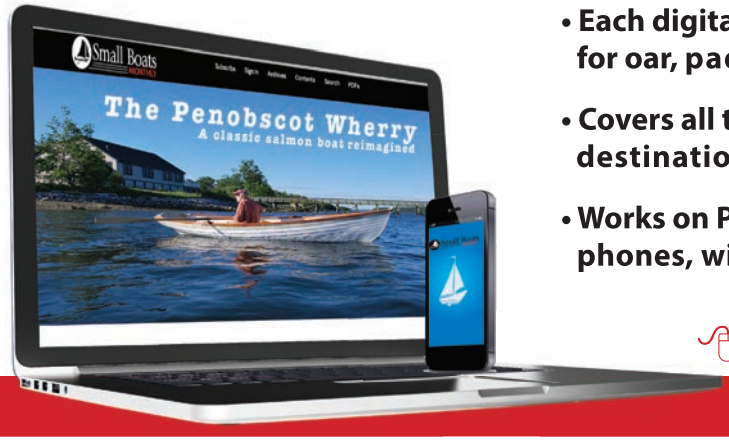

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INSET: PAGE FAMILY COLLECTION
ABOVE: BENJAMIN MENDLOWITZ

Bill Page
Market maker

by Bill Mayher

Bill Page was a legend before I met him in 1976. In his youth, he had built numerous boats, and later had opened his own yacht-brokerage office in Camden, Maine, specializing in traditional wooden boats. Although he started it from nothing, the business soon became well known among aficionados along the New England and New York coasts. If you had a wooden boat for sale, or if you wanted to buy one, Page was your guy. He had many of the better listings, he knew the conditions and values of his boats, and he represented them so fairly that often both sides of the transactions became lifelong customers. He also had a special knack for scoping out what sort of boat might be just right for a potential customer and his family and, if something appropriate came up, would give them a call that just might generate a sale.

In those days, the title of "yacht broker" conjured images of yacht clubs and blue blazers. But when I met Page, it was clear these words did not apply. It was at a New Year's party in peapod builder Jimmy Steele's Brooklin, Maine, basement, and Page was the short guy in the khaki pants and checkered wool shirt in the corner expounding to a tight circle of the cognoscenti on refastening garboard planks or where to get decent

***Above*—In the 1970s, Bill Page combined his deep and hard-won knowledge of wooden boats with $300 in start-up capital and founded a brokerage business called Page Marine Serivces. The firm specialized in wooden boats, and in the ensuing years Page helped to create and grow a niche market.**

'EB'S FOLLY' AND BUILDER—William Page, 10-year-old-son of Mr. and Mrs. Norman B. Page of Winterport, is pictured above with the model cabin cruiser he built from plans he drew up himself from a magazine picture. The boat is on display this week at the Bangor Hobby Center. (Staff photo by Webb.)

50-Inch Boat Model Product Of Winterport Youth's Creativeness

PAGE FAMILY COLLECTION

Bill Page was smitten with the wooden-boat bug at an early age. Here, at age 10, he stands with a model of a cabin cruiser he designed and built himself.

bronze hardware, or the virtues of one kind of rig or other. He stood with his feet apart, open hands pumping outward to make a point, full of sly jokes and *sote voce* asides, volume rising and falling to meet the topic at hand, a big smile lighting up that bulldog face of his when he figured he was winning on points. All in all, he came across as about the most intense guy I had ever met.

The next morning, it was more of the same. An ice storm had settled hard over Brooklin the night before and Page was giving me a ride through the glittering, sun-shocked world. Instead of holding my aching head in my hands as the situation called for, I made the mistake of asking him about cruising boats in the 30′ range that he believed offered good value. And away he went. First he looked sideways at me as he talked, then he turned to face me full on as he held forth. First one hand came off the wheel of his Chevy Blazer, then both hands at once when a particularly important point needed to be hammered home. I don't remember a word he said; I only remember hoping not to die.

Although wooden boats of any size at the time were mostly in the hands of New England aristocrats, Page was not a child of privilege. His father had a grocery store in the small town of Winterport, about 12 miles up the Penobscot River from Searsport. Times were hard back then on the coast of Maine. The family lived above the store; Page's dad sold on tight margins and, in the tradition of Maine storekeepers, extended credit to about any family in town that needed it.

In the late 1940s, when Page was about 11, there wasn't much left in the way of boatbuilding in that town nor, for that matter, much in the way of maritime life along the once-thriving riverfront. Nevertheless, Page became crazy about boats while reading *The Rudder* magazine over several years, and one afternoon the guy with the Esso station across the street from Page's Store noticed young Bill taking clapboards off the side of the family garage. When he mentioned this to the boy's father, the senior Page went out to investigate.

"I want to build a shop alongside the garage that I can build boats in," Page told his dad. Almost miraculously, given the era, instead of shouting or stamping his feet, Page's father quietly said, "Well, I think that's a good idea, but why don't we get Vanda [*the* local carpenter in town] to help you?" This single sentence and the love and admiration behind it, put Page's life on the rails. He put up the shop and then built a plywood pram for himself. But he didn't stop there. Over the next several years he built 75 or so prams for customers, plus a few plywood outboard runabouts, and several lapstrake-cedar skiffs.

After high school he went off to the University of Maine to study mechanical engineering. But instead of simply being a student, he leased a cluster of riverfront Quonset huts in Winterport and bought an adjacent lot on which to build a railway. With the loan of his best customer's bulldozer, which had a winch on the back, he was able to drag boat cradles in and out of the buildings. The operation became sort of a full-service boatyard for customers mostly from the Bangor area, many of whom had cottages in the summer colony of Bayside. Page would work on those boats every weekend while college was in session.

Page's connection to Bayside had come about years earlier when his father bought a shoreside cottage there for $1,000 the day after World War II ended. Naturally, Page was all over the waterfront as a little kid, and early on his father engaged a young local woman, Nancy Bryant, to teach him and his older sister to sail. Nancy's father, George Bryant, owned RIVAL, a 23′ Charles McGregor–designed sloop that he'd built himself, and he soon became a mentor of Page's. After a year or so of lessons, George built a 14′ Rhodes Bantam for his son, Dave, who was Page's age. Page had to have

PAGE FAMILY COLLECTION

Page at age 12, on an early waterborne adventure.

PAGE FAMILY COLLECTION (THIS PAGE)

In 1965, Page built and launched BELLADONNA, a 29′ sloop designed by Francis Kinney. Within weeks of the boat's christening, Page was off to the Bahamas for a winter of adventure and exploring.

Nearly Ready For Cruise

William C. Page stands aboard sloop "Belladonna" which he built, while his wife Patricia Ellen gets ready to swing the traditional bottle of champagne at the launching at Sommes Sound, Mount Desert. The Pages plan to leave soon for a cruise to the Bahamas.

Pages Get Ready For Southern Cruise

one of his own, so the following year, at age 12, with the loan of George's molds, he built a Bantam for himself and cruised it around Penobscot Bay, sleeping under a boom tent.

In the early '50s George and another mentor of Page's, Don MacNaughton, who also summered at Bayside, had Camden shipwright Elmer Collamer build them each a 28′ Ralph Winslow–designed Foursome sloop. Page can still see those two cedar-planked hulls side by side in Elmer's shop. Upon the launching of his new boat, WINDSONG, in 1954, George sold RIVAL to Page for $600, giving him a year to pay it off.

It's hard to imagine a happier 16-year-old kid than Bill Page with his own 23′ cruising boat. He was off under sail on the first chance-along, and the world opened up to him and his buddies. He remembers with a chuckle sailing into Camden Harbor, and how the Yacht Club steward came out in the club launch to direct the boys to a guest mooring, and how the next morning the steward came alongside to pick up their trash and bring them a free morning paper.

After college, the freshly minted engineer joined the Coast & Geodetic Survey (now the NOAA Corps) as a junior officer. This put him aboard seagoing vessels surveying waters both north of Alaska and off South Carolina. About two-and-a-half years later, Page went to work for the Portsmouth Naval Shipyard as an engineer, but government work, in which "I never knew what in hell I was supposed to be doing," held little appeal to him, and after a few months he decamped east for a job with Farnham Butler at his Mount Desert Yacht Yard. Farnham and Page got along fine, but Page is his own man. He didn't thrive under Farnham's close supervision.

In his off-hours, Page had been building the backbone, molds, and other parts for a 29′ sloop. One day, he summoned up his nerve to tell Farnham that he would like to resign, and to ask if he could set the boat up in Farnham's empty building bay so he could complete her enough by fall to enable him and his wife-to-be, Pat, to sail south to the Bahamas.

Just as it had been when he started pulling clapboards off the garage back in Winterport, good fortune smiled on audacity. If Page would do two weeks in the spring to help Farnham get some of the storage boats ready to launch, he not only could use the shop, but Farnham would extend him the boatyard's discount for any materials he needed to buy. Page to this day shows great respect for Farnham—and appreciation for his generosity.

Working many long hours, Page got the job done: His 29′ Francis Kinney–designed keel-centerboard sloop named BELLADONNA was launched on September 5, 1965, and within two weeks Bill and Pat were off to the Bahamas for the winter. In the early spring, they sailed to Daytona Beach Boat Works for a stint of employment to recharge finances for the trip north up the waterway and back home to Maine.

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The question of what to do next was a big problem. Times were still tough in Maine, and opportunities along the waterfront were slim—especially for a young man starting a family. But knowing he now had to earn a *real* living, Page did something out of character: He took a corporate job at a Sylvania plant in the town of Waldoboro, Maine. But endlessly assessing light bulb filament failures, while the beckoning tide rose and fell in the Medomak River below the plant, proved to be just a temporary career diversion, and soon Page made the leap to become a yacht broker with his own business. And thus Page Marine Services came into being.

Many things came together to make the business a success. Throughout his boyhood, Page had read one boating magazine after another, especially *The Rudder*. At the time it featured the work of L. Francis Herreshoff instructing a devoted following in the wonders of small cruising sailboats that a man (or a boy) could build himself out behind the house. All this reading meant that before he even hung out his boat broker's shingle, he already had an encyclopedic understanding of the wooden boats designed and built over the previous 50 years. It proved to be a treasure trove of understandings.

He could pass on this deep knowledge to customers as they contemplated one boat or other to buy. Additionally, he had $300 in the bank to capitalize the business. He had a centrally located house on Sea Street in Camden with a glassed-in front porch that would serve as an office. Armed with these assets, Page invested in a coffee urn, a copier, and some stationery, and hit the road in his pickup truck to see if he could drum up listings. To do this he visited every boatyard along the Maine coast, handed out business cards, and inquired about boats that might be for sale—then or in the near future. If a possibility was suggested, he would then carefully inspect the boat to deduce its condition so as to be able to fairly represent the boat to customers.

We can well imagine the effort and energy Page put into this start of Page Marine Services. When he showed up at a yard, he didn't just visit with management and be gone; he made it a point to talk to the regular guys on the crew about the boats they had worked on, sometimes for decades. Showing respect across the board enabled him to build strong working relationships, so when he showed up with a potential buyer, he (and by extension the customer) were treated with reciprocated respect. Instead of the deal going down like some sort of used-car-lot hustle, Page imbued it with authenticity and dignity.

As the business grew deep roots, Page's courtesy and follow-through became legendary. When he uncovered a boat, he was sure to put things back the way he found them. When a buyer traveled unaccompanied to a yard to see a listing, Page always made proper arrangements

PAGE FAMILY COLLECTION

Page launched the Bob Baker–designed sailing dinghy NELLIE in 1972. She appeared in the first issue of this magazine, in an unattributed article written by founder Jon Wilson. Page, wrote Wilson, "spoke eloquently about the satisfaction he derived from working with wood, and the pleasures of wooden boat construction over other methods.... When I saw the workmanship on NELLIE, I understood perfectly what he meant."

with the yard ahead of time for the inspection.

Most of all, Page was straight up about the way he represented boats to clients. With the juggernaut of fiberglass construction rolling along, and appearing at the time to be a permanent solution to problems of long-term maintenance, such candor was critical to the long-run success of his business. If he had just woven spells, and the boats he had sold failed survey later, Page Marine Services would have been a non-starter. If he didn't have a sound sense of price and value, he wouldn't have lasted a year. Finally, if he put a family into a boat that was over their heads in terms of maintenance and seamanship, or just wasn't right for them in terms of the use they intended it for, then he wouldn't have built the legendary trust that became his stock-in-trade.

When Page set off in his pickup truck with $300 (minus the cost of that coffee urn and the stationery), he certainly intended to be in the business a long time. But I don't think he imagined the role he would ultimately play in helping to make what became known

PAGE FAMILY COLLECTION

***This and opposite page*—Collaborating with boatbuilder Gordon Swift, who built the hull, Page launched the lovely Winthrop Warner–designed ketch SANDPIPER in 1979.**

as the "wooden boat revival" possible. In a time when wooden boats were slated to be soon replaced by fiberglass models, Page, by word and deed, assured that wooden boats had actual, bankable value as long as a new owner corrected any known deficiencies and continued to give a boat proper care. In sum, Page summoned his inner bulldog and became a market maker when the wooden boat market could have simply collapsed.

Page, as they say, "did well by doing good." The yacht designer and builder Joel White used to say that when a person sold a boat, Page not only found him his next one, he also sold the new buyer's old boat, thus often creating a chain of commissions. Surveyor Giffy Full, who has observed Page in action at close range over decades, said that he sold some boats so many times over the years that the commissions he earned from the sales could have nearly approached the value of the boat itself. Of course Page denies these allegations, chalking them up as good-natured banter between old friends. And anyway, if Page made a lot of money peddling boats, you'd never know it by the pants he wears—or the shirts either.

Page Marine Services might have gone on forever if Bill Page wasn't so hands-on that he found it difficult to delegate responsibility to others. The business had grown and after a decade of it he was

BENJAMIN MENDLOWITZ

SERIANNA

SERIANNA
Particulars

LOA . . . . . .38′
Beam . . . . . .12′4″
Draft . . . . . .5′
Displacement . . . . . .38,500 lbs

burning out. More than anything, he wanted to spend summers cruising the coast of Maine, and work full time winters completing the construction of MIMI ROSE, a 32′ cutter designed by Bob Baker and Joel White. The hull had been built by Page's close friend, the late Gordon Swift (see Across the Bar, WB No. 238), and then trucked to Page's shop in Camden. So he quietly put the business up for sale, and it was eventually sold to

BENJAMIN MENDLOWITZ (THIS SPREAD)

***This and previous page*—After thirteen years of building, with winter help from his friend Eli Ellis, Page launched the power cruiser SERIANNA last year. The boat was designed by Bill Garden, with slight modifications by Bob Stephens and by Page himself.**

Bill Cannell and Jim Payne with the rights to the name Page Marine Services. Included was a limited-time non-compete clause. To step away from such a successful enterprise was a remarkable decision. But remember: here was a man who had started building boats for sale from the age of 12.

After the transaction was complete, Page began work full time completing MIMI ROSE, and also more actively started buying and selling bronze classic marine hardware, which he had been collecting for years and most of which was no longer made. For a decade or more, until he once again began brokering selected boats under the name Page Traditional Boats, if you wanted to find a pair of bronze winches or a set of classic cheek blocks or whatever made by Merriman, Perko, or Wilcox-Crittenden, Bill Page was the man to call.

In the late 1970s, before MIMI ROSE, Page and Swift had created the lovely Winthrop Warner ketch SANDPIPER. She and MIMI ROSE were lovely and beautifully built, but nothing compares to the masterwork of Page's life, the William Garden–designed West Coast troller-type motor vessel SERIANNA, begun when French & Webb built the hull to very high standards in 2000. As with Page's previous boats, this one was trucked to his shop for completion—this detail work being done by Page himself with great assistance during winters from his younger and very talented friend, Eli Ellis, who is an excellent professional cabinetmaker. SERIANNA was launched in July 2013, and her 13-year building epic was preceded by a similarly epic search for the perfect design.

Here's how Page came to build her: From *The Rudder* magazine, he had become familiar with the designs of Seattle's William Garden. Years later he had a chance to visit Garden on his little island paradise called Toad's Landing just off Vancouver Island near Sidney. This and subsequent visits initiated a long correspondence between the two about West Coast fish boats. For a while it appeared Page would build an enlarged version of the Garden 27′ cruiser called POLLYWOG. About that time, he heard from Garden about an intriguing opportunity to obtain a larger troller-type boat. In order to conserve salmon stocks on the West Coast, the Canadian government had started a buy-back program of commercial trolling licenses. Most of the fishermen who turned in their licenses would then put their now-unlicensed boats up for sale, and the boats would usually be bought for conversion to pleasure use. Rather than build a boat, Garden suggested, why not buy one of these and convert her?

Presented with such an opportunity, Page was on a flight west within a week, and not surprisingly, ended up buying two and having them trucked east. One of the boats, a double-ender of the earlier style, was for a friend. It was a grand plan,

but it didn't work out so well. As he dug into the boat he'd decided to keep, Page began to worry about quality and conversion problems. He fiddled with this and faddled with that, and then began thinking that building new from scratch made more sense. But, oh the cost of it! He'd already made a couple tentative calls to Todd French of French & Webb while in the "thinking" stage. He passed his gutted-out troller on to a local boatbuilder friend who finished the conversion and named the boat ALAMAE. Page was at loose ends for a bit, and kept eyeing the 37′ "Troller Yacht" design in Garden's first book, *Yacht Designs*. By this time his new wife, Paula, noting the overwrought distress all this cogitation was generating, went over to his shop, put her hands on his shoulders, looked him in the eyes, and said, "Bill, I *want* you to call Todd and build that new boat."

So that was that. He got out the original Garden design, and with the help of yacht designer Bob Stephens, lengthened her a foot in the midsection, made several other subtle changes, and engaged French & Webb to build an oak-framed, copper-riveted, double-planked hull of Alaska yellow cedar over clear eastern white cedar. The deck structure and brownheart guardrails were also done at French & Webb. French & Webb, said Page, did a superb job of building, and at this stage the boat was trucked to his shop in Cushing, Maine. Then commenced the 13-year saga of building the most excruciatingly wrought piece of maritime construction in the history of the world.

I'm only kidding a little here. There's Harrison and his chronometers. There's Michelangelo and his ceiling. There's Hillary and Tenzing and their mountain. And there's Bill Page with SERIANNA. Here's a summary of her features: The boat contains about 18 species of wood. Her timbers are fastened by custom-fabricated Monel bolts made from stock dug out of a local junkyard. A West Coast Forfjord anchor with hydraulic reel-type windlass trucked back from the West Coast adorns the bow. The boat's many knees are made from three pickup-truck-loads of yellow cedar natural crooks hauled back from British Columbia. On and on it went, year after year, in sickness and in health, with Paula supporting him every step of the way.

And now they have their boat. A large crowd came to her launching on July 27. The weather was perfect. Page had worked flat-out for weeks, with the final push being a 36-hour session alongside his good friend Don McMillan, a British Columbia fisherman who had flown out five days before with his wife Janet, for the launching. SERIANNA floated exactly on her lines, fulfilling every dream of a perfect boat he had had over a lifetime of dreaming of perfect boats.

Bill Mayher is a regular contributor to WoodenBoat.

The Thames Waterman's Stroke

Elegant, efficient rowing

Text and photographs by Christopher Cunningham

Good rowing is graceful, efficient, and powerful. It's also uncommon. As a pastime, rowing doesn't offer much incentive to develop good technique, but tie it to a livelihood and there is ample reason to row well.

For the best examples of highly refined rowing we may have to go back to the 19th century, when rowing was still an occupation for many. Dorymen developed a stroke for use with flat-bladed oars, heavily laden boats, and open seas (see WB No. 198). English oarsmen used a very different technique, with spoon-bladed oars and fast pulling boats in sheltered waters. Known as the Thames waterman's stroke, it keeps the blades moving parallel with the water's surface—just below on the drive, just above on the recovery—and has quick and efficient transitions at the catch and at the finish. The clean bladework and lack of splashing make it look effortless and belie its power.

For centuries these professional watermen plied the Thames carrying passengers and goods across the river, and those who could make crossings quickly and without tiring could earn more pay for a day's work. Competition for fares led to racing as early as 1715, and while racing led to narrower boats, outriggers, and sliding seats, the waterman's stroke remained very much the same. Rowing races became wildly popular as sporting events; in 1887 there were even trading cards devoted to oarsmen. The best of the Thames watermen could make a good living as professional racers.

In spite of its long history and development, the Thames waterman's stroke isn't widely known or used today. A class distinction may have helped lead to its obscurity. Watermen in 18th- and 19th-century England were of the working class and many, if not most, were illiterate. They had a way with words, albeit one less apt to be put into print: In 1701 a trade organization of Thames watermen found it necessary to impose fines on foul language, two shillings for "reviling passenger" or "swearing or cursing." When the British leisure class took an interest in rowing, the amateur oarsmen distanced themselves from the professional watermen. A 1903 text, tracing the history of rowing,

***Above*—Developed by professional oarsmen in England in the 19th century, the Thames waterman's stroke is an elegant and efficient method of rowing with spoon-bladed oars.**

noted: "The watermen who plied for hire were naturally prone to regard the oar rather as an irksome necessity and the sign of a laborious existence than a source of delight."

It is hard to imagine that the watermen took no pride in their trade and their technique. The amateurs avoided racing against the pros, considering such matches ungentlemanly, but they must have known that they would fare poorly against the work-hardened watermen. Yet it was the various strokes created by the well-heeled and well-educated amateurs, not the watermen, that proliferated by finding their way into rowing clubs, schools, and books.

The Thames waterman's stroke was brought from England to the North America by professional scullers, among them Herbert "Bert" Haines (1879–1957) and George Pocock (1891–1976). Haines was born into a family of champion scullers and won numerous workingman regattas. Pocock began racing at age 17 and modeled his stroke after that of Ernest Barry (1882–1968), a Thames waterman and world-champion sculler. (Pocock and Haines raced against each other in England in 1907 or 1908. Pocock won.) Pocock came to Seattle to build racing shells and advise the University of Washington crew. Haines settled in Cambridge, Massachusetts, and coached Harvard oarsmen including my late father, Frank Cunningham.

Both my father and George Pocock's son, Stan, coached rowing in Seattle and advocated the Thames waterman's stroke. (My father and Stan never raced, but Stan told me that my father's quick and powerful catch left little doubt who'd win.) While they both coached the waterman's stroke to crews using racing shells with sliding seats, the technique easily resumes its original form when used for fixed-thwart rowing.

The most effective path for the blade to travel (relative to the boat) is an arc through a horizontal plane just below the surface of the water. Similarly, the most direct path for the blade to take between strokes is through a plane just above the water. The transitions at the catch and the release should be quick and with a minimal amount of vertical travel. The Thames waterman's stroke accomplishes these objectives; it wastes neither time, motion, nor effort. It is a reciprocating motion that has none of the circular characteristics all too common in lubberly rowing. I think you'll find it the best way to row with spoon-bladed oars in an easily driven pulling boat.

Outfitting

To row powerfully, you have to brace your feet against something solid (**A**). A low cleat on the floorboards won't do the trick. A footboard or a stretcher across the balls of your feet allows you to engage your calf muscles and the power of the rest of your body. The oar leathers should have collars to keep the oars from sliding outward through the rowlocks (**B**). Grease the leathers to allow the oars to rotate freely. A flat thwart will be fine for short hauls, but over time the rocking of your pelvis that occurs during the stroke will create sore spots on your tailbone and sit bones. Firm foam paddling will help (**C**). You may want to simulate a racing-shell seat by cutting the foam to make two holes for your sit bones and a notch for your tailbone.

The First Stroke

Sit on the thwart with your feet braced against the stretcher. As you sit upright, your knees should be slightly bent. Rest the blades on the water fully feathered (**A**) and set your fingers lightly on the oar handles without gripping them. Your second knuckles (proximal interphalangeal joints) are angled over the tops of the handles. Your first knuckles, those at the bases of your fingers (metacarpophalangeal joints), are flat or slightly hyperextended. Your wrists are flat (**inset A**).

Push each handle away from you with the base of your fingers. Your thumbs are loose and resting at the ends of the grips. For this first stroke, just let the blades skim across the water. As you reach out, pivot at your hips and lean toward the stern. Keep your back straight to lengthen your reach and protect it from injury. (When I refer to a straight back, the spine is not actually in a straight line but in its neutral elongated S curve.) A straight back is longer than a bowed back, and you can prove this by pulling your belly away from your thighs and putting an outward curve along your spine. As you switch from curved to straight, your hands will reach a couple of inches farther aft and the blades can move as much as 6″ forward. As your pelvis angles with the spine toward the stern, your knees will bend and rise.

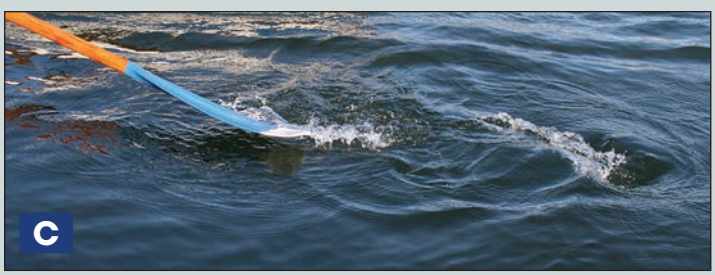
Reach with your shoulders but don't hunch over. Keep your head upright and your gaze on the horizon astern. I like to think of reaching out with the bottom of my sternum. That draws my breath in and puts a slight hollow in my low back, a safe and powerful position for the drive to come.

You're ready for the catch, the most distinctive element of the waterman's stroke. It happens very quickly and it is not as much something that you do with your hands, as it is something that happens to them. This catch, known as the sculler's catch, is, oddly enough, initiated by your feet: Spring off the stretcher. At the moment you apply pressure with the balls of your feet and drive your shoulders toward the bow, your hands will react, almost instinctively, to switch from pushing to pulling. Your fingers will curl downward (your wrists remain flat) and the oars will rotate too (**B**), bringing the blades slightly off the feather. The power of your "leap" from the stretcher will be transmitted to the blades at this same moment, and as the partially submerged blades are driven aft into the water they will trip to vertical and become fully immersed (**C**). In this way, the blades automatically complete their rotation and your fingers just go along for the ride. Your thumbs remain relaxed (**inset C**).

The Drive

The drive begins at the catch by engaging the power of the large muscles in your legs, haunches, and back. Keep your arms straight while you're doing the heavy lifting (**A**). After the boat has accelerated, use your arms to pull the handles into your midsection. Keep your elbows down. Your arms, legs, back, and shoulders all come to the end of the drive at the same time (**B**). Round your low back to make more room for the handles as they come closer to you. Your ribs will push down into your abdomen so exhaling comes naturally.

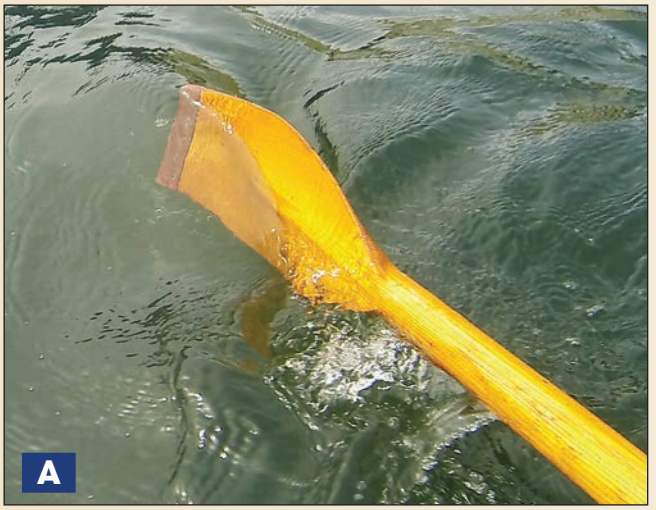
Don't lean with your head or shoulders toward the bow. Keeping your head upright and rounding your back will keep your weight from moving too far forward—you can only take advantage of your weight descending as you move past the thwart if you can keep from falling off it. You could bring your stroke to an end when you're upright, but you'd be giving up a lot of power. Going past vertical allows you to use gravity to your advantage and extend the length of the blades' arcs through the water.



NATE CUNNINGHAM (THIS PAGE)

The Puddle

The water will give you a good indication of the quality of your bladework. The catch will happen very quickly yet will scarcely disturb the water (**A**). Even a hard catch at speed may spurt like a clam on the tide flats: a few drops and a spout, but no sheet of water. Very little air will get driven into the water; silvery vortices and bubbles indicate wasted efficiency. During the drive, the blade stays close to the surface of the water, with very little of the loom submerged (**B**). As power is applied, water heaps up at the blade faces and hollows out at their backs. At the release the blades will slip out of the water just as cleanly with very little mixing of air and water. The puddle left behind will be just dark, curled water (**C**).



Finish

Pull your shoulders back smartly at the end of the drive. As you pinch your shoulder blades together, you will maintain the pressure on the oars and, at the same time, start moving your chest out of the bow. This technique is known as the ferryman's finish, but it is best to think of it not as an end point. It is as much the beginning of the recovery as it is the finish of the drive.

You don't want to row squared blades out of the water any more than you want to row them in at the catch. As soon as the upper edges of the blades break the surface of the water, air gets drawn into the "puddles" around them. They lose their grip and you've shortened the effective length of the drive. There is a quicker way to release the blades without diminishing the drive. The water on the back (bow-facing) sides of the blades has been stirred up by the blades' slight movement aft. You can slip them through this turbulence without encountering much resistance. A powerful stroke also changes the contour of the water's surface: water heaps up at the faces of the blades while depressions form on their backsides. The easiest way out of the water is through these hollows.

During the drive, the locked-in curves of your fingers keep the blades vertical. At the end of the stroke you'll push the oar handles away quickly. (My father often said: "finish with a bent oar"; that is, keep applying full pressure up to the very last moment of the drive.) The quick change of your hands' direction will automatically relax your grip and allow the oar to rotate (**A** and **B**). Apply pressure with your thumbs on the lower corners of the grips (**C**). You should lower your wrists only slightly, no lower than the bottom of the handles, to start the blades on the feather. Your thumbs, briefly engaged with the grips and pushing the bottoms of the grips sternward, will help with the rotation of the oars. Once that rotation is initiated, the rest will occur on its own: as the tops of the blades break the surface they are free to rotate forward while the bottoms are nudged sternward by the water (**D**). The angle of the blades carries them upward.

Recovery

Once the blades are out of the water, keep them on the feather and as low as conditions allow. The leading edges should be slightly higher than the trailing edges so the blades will skip upward should they strike any waves. Flatten your wrists once again as you push your hands outward and maintain the feather by cocking your fingers back at the MCP joints. If your handles overlap on the recovery, lead one hand out ahead of the other. The trailing hand will nestle in the hollow over the wrist of the lead hand. Reach out as you did before with arms, back, and hips.

It takes a while to get a good feel for where your blades are in relation to the water. Avoid watching the blades, as your senses of touch and proprioception will eventually become attuned to telling you where they are. You can skim the blades on the water so that the catch will be very much like a stroke from a standing start. Or, you can raise them slightly and still execute the sculler's catch. On flat water you can row the whole recovery in a space that rises little more than half a blade's width above the water.

Experimentation

You can judge the efficacy of the waterman's stroke once you get proficient with it. Introduce more commonly used elements of rowing and pay close attention to the feel of the oars in your hands. "Sky" the blades during the recovery and note the effort it takes to push the handles downward. Square the blades on the entire recovery and feel the resistance in a headwind and even in still air. Squaring the blades even briefly before the catch forces you to raise them to provide clearance for the half of the blade that is rotated below the axis of the oar. The blade then has to travel that much farther to get immersed. While it is moving downward, it also has to be accelerated sternward to come to match the speed of the water moving by beneath it. The blade goes in by degrees, usually dragging a lot of air with it, and can't provide full power until it is fully immersed. By then a significant part of the drive's arc has been lost. Similar losses of power occur at the finish if a squared blade rises from the water.

NATE CUNNINGHAM

The waterman's stroke trims away everything extraneous to moving a boat with oars, and what remains is an efficient conversion of effort into forward progress. It is a pretty thing to watch, and once you've mastered the stroke I'm certain that you'll never regard the oar as an irksome necessity. It will always be a source of delight.

Chris Cunningham, a regular contributor to WoodenBoat, *was editor of* Sea Kayaker *magazine for 24 years. He recently became editor of* Small Boats Monthly, *a new web-based magazine published by WoodenBoat Publications. You can reach him at chris.cunningham@woodenboat.com.*

GRAYHOUND's

Encore

The rebirth of a lug-rigged privateer

Text and photographs by Patrick Holian

It's the second race day of the 2014 Antigua Classic Regatta. I am aboard the largest lugger built in the United Kingdom in the past 200 years. We are sailing the butterfly course—two triangular routes covering a total of 20 nautical miles from Shirley Heights to Fisher Hill. Before we reach the finish at Falmouth Harbour, GRAYHOUND will round five buoys.

One of the deckhands, Kevin "Diamond" Macoy, the only Antiguan aboard and noted for his gemstone earing, leads the repetitive chant that will be sounded throughout the race: "Two-Six—Heave! Two-Six—Heave!" The call hearkens back to the golden age of sail in the British Royal Navy. Two and Six were the assigned gun crew positions for men who hauled on heavy tackles to wheel a gun carriage back into position after firing. The command eventually transferred to the topside deckhands heaving on tackles, and that is what we are doing today, repeatedly. Skipper Marcus Rowden shouts out to the crew just after rounding the first mark, "Remember, mates. Pain is just weakness leaving the body."

That kind of grit is needed on this day. Winds are over 28 knots, with waves peaking at 10′. Several Carriacou sloops have already been damaged,

GRAYHOUND's three lug-rigged masts made her something of an apparition from the past during the 2014 Antigua Classic Yacht Regatta. Launched in 2012 to the lines of a vessel built in Cornwall, England, in 1776, she more than held her own in strong winds and running seas.

GRAYHOUND
Particulars

Length on deck	63′6″
Sparred length	106′
Beam	19′6″
Draft	10′9″
Disp.	49.47 tons
Auxiliary engine	Beta 90-hp diesel

FREYA HART

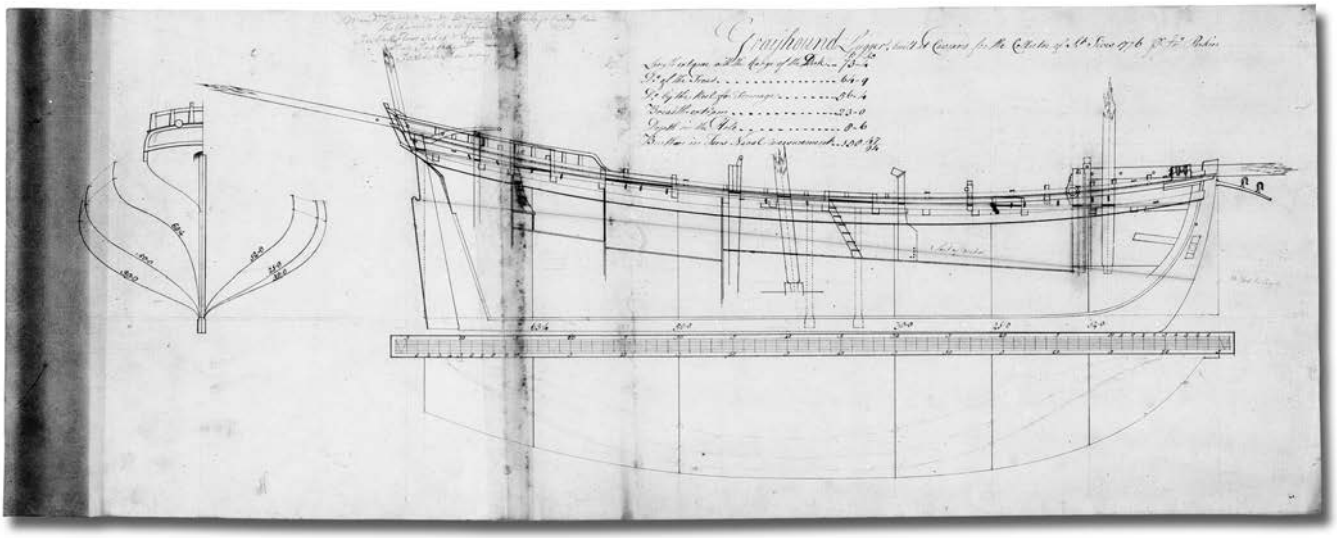
***Left*—After meeting while sailing in the Azores, Freya Hart and Marcus Rowden together conceived a plan to find a classic wooden boat to live aboard and charter. They altered their ideas about what type of vessel to look for after encountering the stunning French bisquine LA CANCALAISE at sea and learning that Cornwall had a similar historical tradition of lug rig. *Above*—The couple hired their friend Chris Rees, a boatbuilder, to bring their vision to reality, with Rowden himself serving as project manager, scouring England for boatbuilding woods and working alongside the builders.**

one with a smashed spreader and the other a broken rudder. Then MISTRESS, a classic schooner out of Key West, Florida, cracks her mast—end of the game for that beautiful yacht. But GRAYHOUND roars on at an 8-knot clip. She tracks through the sea with power and authority. I make my way back to the tiller and talk to Rowden about the sails that are set today.

"Our waterline length denotes the speed that we can obtain," the captain says. "But remember, we need to spread a lot of canvas to move 50 tons of boat through the water. When the wind gets up like today, I just bring everything in to the length of the boat," which is 64′ on deck. "We don't use the mizzen or the jib in these conditions. This boat stands up to a huge amount of wind very comfortably with just the fore and main lugsails. That is what Freya and I wanted from GRAYHOUND: a capable, traditional sailing ship that we could also call our home."

Freya Hart met Marcus Rowden several years ago in the Azores. She was a certified ocean yacht master and budding sailmaker. He was a boatbuilder, welder, and an experienced skipper aboard the 32′ lugger VERACITY, which he built himself. It was in a Horta bar where these two sailors hatched a plan. "The cruising scene was great," Hart says, "but after a few years, it sort of lacked purpose for me. I had this dream of having a project, a team, a business—something that involved sailing with a lot of people. I wanted to get back into the wooden boat scene." Hart and Rowden decided to look for a Brixham trawler to buy upon returning to the U.K., then restore it and make a living by chartering the boat worldwide.

But while sailing to England, an unexpected encounter changed their plans. "We were off the coast of France," Hart says, "when we spotted LA CANCALAISE." The French three-masted, lug-rigged bisquine was built in 1987, replicating a 1905 fishing lugger (see WB No. 158). "The sea was flat calm," Hart says, "and the 58′ lugger had everything up. She was just gliding silently through the water. Right there, we knew we had



NATIONAL MARITIME MUSEUM, GREENWICH

The British Admiralty made a habit of recording vessels constructed in England or brought there by capture or purchase—and the original GRAYHOUND was no exception. Built in Cornwall in 1776 as a revenue cutter that could keep up with fast and weatherly luggers then favored by smugglers, she was converted in 1778 to serve as a privateer during Britain's war with its rebellious American colonies. She was 73'4" on deck, compared with 63'6" for the modern reconstruction.

to build a ship like that. It was just incredibly beautiful."

The second inspiration came days later when the couple anchored VERACITY in Plymouth Sound. They had invited a good friend, shipwright Chris Rees, aboard for dinner, and upon hearing about their sighting of LA CANCALAISE, he promptly left the boat, rowed ashore, and returned a half hour later with plans in hand. Rees spread out the historic lines drawing on the dinner table and confidently proclaimed, "This is what you need to build, the GRAYHOUND!"

The GRAYHOUND whose lines he had rolled out was crafted in 1776 by John Parkin, a celebrated English shipwright with a reputation for building fast coastal boats. This particular lugger began its service for the customs collector of St. Ives, Cornwall, patrolling the southern English coast in search of smugglers. But soon after the American colonies declared their independence from Great Britain, a man named John Krill bought the swift vessel and outfitted her with 14 carriage guns and 8 swivel guns. GRAYHOUND had become a privateer.

Privateers were essential to Britain during the Revolutionary War to block shipments of arms and goods destined for the rebellious American colonists. They were privately owned ships carrying letters of marque, documents that allowed the vessels to attack foreign ships, often profitably. GRAYHOUND received her letter of marque in 1778, and Capt. Richard John took command with a crew of 47.

Records of the lugger's success can be found at the Priaulx Library in Guernsey. One report in these archives details how the privateer rammed an 800-ton Spanish ship, smashing through the transom. The crew boarded and succeeded in seizing the prize. An oil painting of the battle and a sword engraved with GRAYHOUND's name are also on display.

Hart and Rowden liked the lines of the historic GRAYHOUND and hired Rees to build a replica. Due to monetary restraints, the new boat was built five-sixths the size of the original. "It was a financial decision," Rees says. "The boat would have been 100 tons instead of 50 if built to full scale, and the costs become exponential. It's the top tonnage that you're paying for. That's how boats are priced." Construction was scheduled to begin in 2011 in Shed One of the Voyager Boatyard at Millbrook, Cornwall. The site is but two miles away from

FREYA HART

Following traditional hull construction methods, GRAYHOUND has white oak sawn frames, and all of her larch planking is trunnel-fastened.

the Maker Church cemetery, where the shipwright of the first GRAYHOUND, John Parkin, rests in peace.

Rowden began felling trees on his family's land. He cut six oaks, a symbolic start to the project. Meanwhile, Hart gave birth to their son, Malachi. There was now a sense of urgency to complete the lugger not only for a source of income through chartering but also for a family home on the water.

To that end, Rowden and Rees began harvesting wood in earnest. Larch was gathered for the planking from the Forest of Dean along the English-Welsh border. Local oak was chosen for the framing. Rees cut all the wood at his own sawmill, which he operates exclusively for his boat construction and repair projects. He also relied on his experienced eye in choosing the right trees. "If it's for spars, you obviously look for straight pieces among the Douglas-fir," which was first introduced to Britain as a plantation tree in 1827. "For oak, you look for shapes, bends for frames and stems. You are actually sawing the shapes of the boat out of solid timber. If the tree is that shape to start with and the grain then runs through that part of the timber, it's just that much stronger. I like felling trees, sorting it out and building boats. I like the continuity of that. I choose the timber partly for the quality and partly for the ecology of the forest."

Greenheart, a tropical timber from the salt marshes of Guyana, was used for the keel, stem, and sternpost because of its hardness and rot resistance. The crew found all they needed in nearby Dartmouth, where the wood had been salvaged from a 100-year-old dock. With materials in hand, it was time to start building.

The boatyard in Millbrook buzzed with activity seven days a week for over a year as the hull took shape. Rowden served as project manager. He did all necessary welding, and also cast the three sections of lead composing the 11-ton ballast keel. The pieces were later bored and fastened to the timber keel with bronze bolts. Rees led a team of four and worked

Sailing the Lug Rig

The lugsail is four-sided, and just like the classic square sail it is attached to a spar or yard along its top edge. But this is where the similarity ends. While the square sail is hoisted by a halyard attached to the middle of the yard, which sets square to the mast, the lugsail's halyard is attached about one-third of the distance from one of the yard's ends. Thus, when the sail is raised the yard is peaked upward at an oblique angle to the mast, with the sail set fore-and-aft. Where the square sail has sheets at both lower corners, or clews, the foot of the lugsail is controlled by a sheet at the clew and a downhaul at the tack.

Sails such as this gave luggers like the original GRAYHOUND a decided advantage over square-rigged ships at the turn of the 18th century. As Paul Greenwood points out in his book, *Once Aboard a Cornish Lugger,* the smuggling luggers of those times often outran British navy square-riggers on patrol because they could point better to windward. With a full press of sail, these speedy, three-masted vessels could make the 100-mile run from Cornwall to Brittany, France, in eight hours to pick up contraband. That is an average speed of 12 knots. The financial rewards from this high-risk venture made a number of investors exceedingly rich. Even a common sailor would make more money in one smuggling run than he could in three weeks of work as a fisherman.

Lug-rigged vessels—in which the head of the sail is laced to a yard that is hoisted alongside the mast—became known for eluding square-riggers by outperforming them in sailing to windward.

Today's GRAYHOUND carries lugsails, and some of them are rigged to be used two different ways. Usually, she sails with "standing" lugsail, meaning that the yard always stays on the same side of the mast, with the tack of the sail set close to the foot of the mast. But for long passages, skipper Marcus Rowden sometimes rigs the foresail as a "dipping" lug, the oldest type of lugsail. Rigged this way, the sail offers the most power, especially upwind. It gets its name from the fact that the sail is lowered and the yard is shifted from one side of the mast to the other—or "dipped"—when changing tacks. Always being on the leeward side of the mast allows the sail to fill cleanly. The downside is that tacking is cumbersome at best, as the crew must drop the sail, pass the yard to the opposite side of the mast, reset the tack, and then rehoist the sail. There is little wonder that Rowden reserves the dipping lug for long tacks.

Both types of lugsails have the advantage that there are no booms. English fishermen found this configuration decidedly safer than working around gaff sails and their low booms. The gaff rig does have the advantage of not chafing the sail against the mast, but the lugsail's simplicity and safety made it the choice of many fishermen along both coasts of the English Channel. *—PH*

Fourteen months in construction only two miles from where the original vessel was built more than two centuries earlier, GRAYHOUND was launched amid great fanfare in 2012.

with them as a fifth shipwright on the project. Time-tested treenails, traditional wooden pegs, fastened the planking to the frames. Hart promoted treenail sponsorship on the lugger's website, where for £5 ($8.25), supporters could have a treenail inscribed with a name or message before it was driven home. Three thousand of these personalized pegs are now in the hull.

One of the purchasers was a local Millbrook baker who bought a treenail in honor of his recently deceased father, a wooden boat aficionado. Later, the baker was asked to prepare mince pies for the lugger's first Christmas party. Upon delivery, the man refused payment, saying that the pies were his dad's contribution to the project. "There's a massive maritime history here in Cornwall," Hart says. "The people here have been so responsive, encouraging, and supportive about our project. That's been really lovely."

While modern power tools were used extensively in building the lugger, traditional hand tools played a vital role as well. "We still used the adze quite a lot," Rees says. "There are jobs that you can't do better with anything else. If you're trying to get in and hollow something, an adze usually works best. When we're framing up and cutting the rabbet, I cut all that with the adze." (see companion article, page 64.)

Attention to detail was also a priority. Walk the decks of GRAYHOUND these days, and you will see heart shapes worked into steel and wood pieces here and there—at the end of the tiller, as trim on the chain plates, as a design element for a vent below, and on the rudder hardware. "I worked the hearts into the steel and woodwork as a tribute to Freya and the Hart family," Rowden says. "The money from the sale of Freya's great-grandfather's home was major in financing the build. Everything that we have is in GRAYHOUND." That includes two boats, the house mentioned, and their life savings. Commitment for this couple was never an issue. "We didn't start this project knowing how we were going to complete it financially," Hart says. "We kind of like to let things roll a little bit, and that's why I think we've been successful. We've let the boat evolve naturally."

Fourteen months and £400,000 ($658,000) later, the vessel was complete. "Besides being five-sixths scale, she differs from the original because this one has external ballast," Rees says. "That's the big difference. The original would have had ballast inside the hull, most of it stone. GRAYHOUND is bigger than anything else I have built of this construction."

Rowden says he was never intimidated by such a large project. "There is a degree of blind optimism in my nature. If you sat down beforehand and worked out what this was going to take financially, emotionally, and physically, I don't think you would start it. It's the passion that carried us through, plus a great crew and friends who generously volunteered their help. I also must mention John Archer, the interior shipwright. He and I spent seven months finishing everything below decks. We've ended up with the most amazing vessel. It fills all the things that we wanted. It's fast, traditional, and it also makes a very nice home."

GRAYHOUND became home for the family on a brisk, sunny day in August 2012. Hundreds of friends, wooden boat fans, and locals—some clad in colorful pirate costumes—gathered in front of Southdown Quay. Cornish ale flowed, bands played, and Rowden with a team of volunteers slowly teased the 50-ton lugger down the skids before the 18′ tide began to recede. A wreath of wildflowers hung from the bowsprit, and a champagne bottle was broken on the hull just as a dark, threatening cloud gathered above. But the sun soon broke through and an enormous, lucky-charm rainbow instantly framed GRAYHOUND as she floated in the milky brown water of Millbrook Creek. It was a good omen of things to come.

Nearly one year later, I visited GRAYHOUND again, but this time at the Cornish seaside village of Looe. Long known as a working port, the town is now home to the biennial Looe Lugger Regatta. Over 40 wooden beauties arrived for the races, some from as far away as Brittany—including LA CANCALAISE, the inspiration for Hart and Rowden.

Most of the luggers gathered for this event differ greatly from the speedy privateering and smuggling luggers of the late-1700s. Most are between 20′ and 40′, with straight stems and a long bowsprits. They are rugged, stable, two-masted workboats. Luggers of this type and of this generation were designed for fishing. Crews

Old Oak

It started out simple enough. A local landowner telephoned Marcus Rowden one day and offered him the timber from an old oak tree if Marcus would fell the tree and remove it from his residential garden. Rowden soon discovered that this would not be easy. The tree was 300 years old. The trunk alone was 22′ high, 8′ in diameter, and weighed 8 tons. "I got into a real pickle with this one," he recalls. "The tree had to be removed because of rot, but it was bigger than any I ever felled before."

It took Rowden and a team of friends four days to remove the immense oak during a late-December snowfall. They first removed the substantial limbs and then attacked the trunk, using a rented chainsaw mill. "We had to chop off some bits of the tree to use the Alaskan mill. The trunk was just too wide. When we cut through it, there was rot burrowing all the way through the center. Plus, we found an old stone wall that had been absorbed by the tree over time. It was challenging."

Once felled and reduced to manageable pieces, the oak was transferred by crane to a truck for transport back to the boatyard. The Alaskan mill was used again there to cut flitches, some of which were used aboard GRAYHOUND for steps and short frames. Some 1″-thick slabs were crafted into a handsome dropleaf dining table, which has become the centerpiece of the main saloon and the social center for the crew. Coins from Freya Hart's childhood collection are embedded into the table's surface, smartly covering the holes for the bolts that fix the slabs to its supporting frame.

"It's done in the Marcus way," Rowden says of his work. "The table is not perfect. There's a chainsaw cut visible from where I cut through a slab too deep. But that is all part of the memory of felling the old oak. It tells a story. This tree was growing at the time the original GRAYHOUND was being built, and that's brilliant."

—PH

used both longlines and driftnets to catch sardines, mackerel, herring, and turbot. The stout craft ranged along what some refer to as the Lugger Coast, the scenic shoreline along Cornwall and Devon, but skippers also ventured as far as Ireland and France in search of their catch. Changing consumer tastes and depleted fish stocks conspired to end the industry. At its peak, Looe alone sheltered 60 luggers. By the 1960s, only five remained. But since the late 1980s, wooden-boat enthusiasts from Slapton Sands to Land's End began rescuing and restoring these resilient vessels. Many now sail the summer classic boat circuit in the U.K.

The Looe Lugger Regatta takes place where the River Looe meets the English Channel. Because of the extreme tidal currents, the boats have but a brief time during which they can depart and return safely through the narrow entrance. Once out in the Channel, sailors must wait about 12 hours between high tide peaks before returning.

On this sunny June weekend, there was little evidence that a Force 7 storm was brewing in the west. However, regatta director Paul Greenwood was aware of the predictions for the near-gale and understood its potential danger. At the tender age of 16, he'd served as a deckhand on the fishing lugger IRIS and intimately knows the wrath of these seas, so he wisely decided to cancel the sailing events.

In spite of the oncoming storm, the dockside display of luggers continued drawing large crowds of onlookers. The French crews brought out fiddles and bottles of Bordeaux, then danced the day away. Aboard GRAYHOUND, there was disappointment about the cancellation, but it gave me some time to meet those aboard. I discovered that four were paying customers who had just spent the past week sailing along the Devon coast. Another, Ruth Warfield, was aboard for a more extended voyage. She had quit her lucrative job as a brewery chemist to spend a year on the water. Hart and Rowden support their liveaboard lifestyle by offering sailing vacations through Classic Sailing, a U.K.-based company that offers hands-on sea adventures on a variety of classic boats including brigs, brigantines, schooners, and pilot cutters. GRAYHOUND is the first lugger of the Classic Sailing fleet.

I also met Peter Crockford, owner of Sailtech, a sail loft in Penryn, Cornwall. His team crafted all the canvas for the lugger. "We made the sails flatter than most. Marcus and I both felt this would be best for a balanced lug rig, but Sailtech was given total freedom on what to do." Keeping with the traditional look, cream-colored Duradon sailcloth was chosen. This woven polyester has the look and feel of cotton but with all the advantages of a synthetic—protection against ultraviolet light and resistance to abrasions and tears. Over 3,500 sq ft of Duradon was used in making the main, mizzen, jib, topsails, and topgallants. For Crockford, this was no ordinary job. "I'm incredibly proud to be part of this. The boat is so personal for Freya and Marcus. It's been a privilege. I knew from the start this would be a project that I would stay with for life."

The next day, as I prepared to leave Looe, I asked what it is like sailing this historic replica. "Behind the helm, I feel like I'm walking in the footsteps of a time gone by," Rowden says. "This is unique. It hasn't been done in hundreds of years. The boat has a touch of square rig about it, and it has that special 18th-century vessel shape. Everything is creaking and groaning. Yeah, it feels fantastic. You should join us in the Caribbean. We'll be there next year."

By the end of the 2014 Antigua Classic Yacht Regatta, GRAYHOUND is awarded the Concours d'Élégance, recognition for being the best in the traditional class of working boats. It is a fitting tribute from an

A powerful but versatile rig gives Marcus Rowden and Freya Hart an ocean-going vessel steeped in tradition, yet a comfortable boat to serve as their home and livelihood.

event that resonates deeply with Hart. "When we started building the boat, the Antigua Classic was always the goal. It spurred us on through the build, doing charters along the English coast, and finally crossing the Atlantic. We are now at the end of the first chapter in this boat's life."

Up next was a transatlantic sail back to England, with a several-week stopover for cruising the Azores. Before departure, I help the skipper lash the mizzen to a newly acquired spar at the historic Nelson's Dockyard at Antigua's English Harbour. He and I saw, carve, and modify a hefty trunk of bamboo that Rowden felled while on the nearby island of Dominica. "We broke two spars coming across the Atlantic, the fore yard and the mizzen yard," the captain says. "We had low winds, 7 to 8 knots, and 4-meter seas. That's difficult in a big, heavy boat when you have a lot of movement of spars up top. We don't break things when it's windy. We break things when it's calm. That is when it hit home that GRAYHOUND was designed for a specific geographical area, the English Channel. We have learned to adapt to big seas. That's just one of the things we discovered in the past year about sailing an 18th-century lugger. There is no textbook to learn about them."

I leave early the next day for home. Hart and Rowden, framed in the morning sun, wave to me from the impressive stern of GRAYHOUND. It is difficult to depart after following the evolution of this grand boat for three years. Words lump in my throat. I simply yell out, "Two—Six!" The seasoned sailors smile and shout back, "Heave!"

Patrick Holian built a wooden pram at age 10 with substantial help from his father during a cold Ohio winter. For the past decade, he has written about sailing and boats for a number of magazines. When not crafting a story, he can be found aboard his catboat, KONTENTU, off the coast of Bonaire in the southern Caribbean.

For more information about GRAYHOUND, see www.grayhoundluggersailing.com.

MARK JAQUITH

The Shipwright's Adze

Mastering a classic edge tool

by Mark Jaquith

The shipwright's adze is a finishing tool, and it's a misconception to think of it being used for just squaring up logs. Working across the grain of the hardest timber, the adze's slightly arched blade, with sharply curved lips at the sides, can take off slices so thin that they are more like shavings than chips, often so thin that they are translucent. In earlier times, shipyard ways were carpeted with a deep and pungent layer of these "bible leaves," as adze shavings are sometimes called. Because little would grow in such deep mulch, the classic epitaph of a defunct operation was to say it had "grass growing on the ways."

Toolmakers D.R. Barton, L.&I.J. White, and others forged fine laminated-steel adzes for the shipbuilding trade. But among many shipwrights, the most highly prized adzes are those made up until the 1920s by Josiah Fowler, whose ancestors, British loyalists, emigrated to St. John, New Brunswick, after the Revolutionary War. Fowler's adzes, along with those made by the Campbell Brothers, also of St. John, were made of Sheffield tool steel, which had a high chromium content, to achieve a combination of light weight and balance with the ability to hold a fine edge. Because these two firms operated in the same town (and in some years the same

***Above*—At left, the classic shipwright's lipped adze, this one made by Josiah Fowler of St. John, New Brunswick, is prized for its ability to remove wood quickly and cleanly. The curved-edge gutter adze at right is useful when fairing sawn frames, establishing gouges at intervals along a series of several frames to accommodate a fairing batten. Following up by "connecting the dots" with a lipped adze results in a fair and finished surface.**

shop), and because their markings were not consistent, it is sometimes difficult to tell their adzes apart. But the tool that became known as the St. John–pattern adze is as unmistakable as a samurai sword, and in some circles as highly regarded.

When Isabella Stewart Gardner built her Italianate mansion, now a fine art museum, on the Fenway in Boston, Massachusetts, in 1903, her architect specified hand-hewn ceiling joists. Lumberyards only carried sawn stock and would have been hard-pressed to supply lengths that could span Gardner's great hall. However, the Graves Yacht Yard in Marblehead not only had suppliers for long timbers but also had shipwrights who still knew how to wield a sharp adze. It was my privilege, much later, to work with one of these men, Henry Jarvis, when he was the master shipwright on the CHARLES W. MORGAN at Mystic Seaport in Connecticut. Henry came from an old shipbuilding family, and his grandfather, born in 1796, swung his adze on famous New York–built clipper ships. He and a helper hewed the timbers for Gardner's great hall by hand, as specified.

Gardner, however, was very disappointed in the timbers when they were delivered. How could such a respected firm furnish milled lumber when handwork had been specified? As Henry told the story, Graves protested, only to incur Gardner's further wrath over being deceived by claims that the timbers were, in fact, "hand-hewn." In the end, Henry and his helper were brought back in to rough them up a little, at no extra charge. If you go to the Isabella Stewart Gardner Museum sometime, you'll see they still look pretty smooth.

The Trade

Henry told me that his father, who was master of a steamer on the Erie Canal, used to tell a story about how a cook on another steamer once made fun of caulkers working on a tired old workhorse of a canal boat being overhauled on the bank. "Putty and paint, putty and paint, makes a boat look what she ain't," was his taunt. But the caulkers replied without missing a beat, "If it wasn't for oakum and putty and pitch, you'd be sunk you son-of-a-bitch." One of the things about adze work is that it's quiet enough for stories like Henry's to be passed on.

A few years back, I stopped in at Snyder's Shipyard on the LaHave River in Bridgewater, Nova Scotia, at a time when they were building Cape Island fishing boats. Four shipwrights were using adzes to "chop" the rabbet on her forekeel. They were chatting, but they never stopped working. Each progressed from left to right, checking the flatness of the rolling bevel with a folded 2′ rule. With overlapping cuts, each worker made quick progress. With the port side finished, they flipped the keel over to chop the matching rabbet to starboard.

Fairing, usually by working from left to right or from an upper surface to a lower one, as from one heavy hull plank to another, is called dubbing. Old-time shipyard hands knew that when work was delayed for some reason on a hull under construction, standing around with their hands in their pockets would be frowned upon, and with miles of planking to fair on a big Down Easter, dubbing was an obvious way to stay busy. To this day on the Kennebec River in Maine, workers not working especially hard are still said to be "just dubbin' around."

So what exactly is the best use of an adze? Really anything you can find room to swing at. And how is it used? The only "rule" is that a lipped adze works best when cutting at least somewhat across the grain. The classic method of fairing or beveling a double-sawn frame is to work directly across the grain, and a sharp adze with a proper handle feels like the perfect tool for the purpose. But an adze can also be used "downhill" with the grain, as in working a scarf into a timber or hewing a keel or keelson joint dead flat. This works well as long as you start at the tail of the scarf, where the material to be removed is thickest, and work toward the shoulder. After a while, you'll find yourself hogging out forefoot rabbets, scarfing planking held down (carefully) with your foot, and beveling transom frames after they've been hung and horned. Once you catch yourself sinking the poll of your adze—the spike-like appendage at its tail end, opposite the cutting edge—into a sawhorse to hold the blade upright so you can sharpen your carpenter's pencil on the edge, I'd say you were pretty much "with the program."

Getting the knack of using an adze, like any edge tool, is a matter of getting it dead sharp to start with. Beyond that, it's really just practice. Use your left hand to brace the handle as stationary as possible against your hip (or rib for working higher or thigh for working lower). Swing the adze head with your right hand as you grip the bow of the handle. Working in odd angles and tight spots always calls for variations on the idea of bracing to keep the handle end stationary and the adze head swinging in a uniform arc. But you will see results much quicker if you snap yourself a chalkline and hew

KANE BORDEN/MYSTIC SEAPORT MUSEUM

Adze work typically involves working across the grain. Here, Walter Ansel uses an adze to shape a large and complex timber during the restoration of the 1841 whaleship CHARLES W. MORGAN at Mystic Seaport in Connecticut.

to it—even if it's just for practice on a log you'll use for a raised-bed garden.

There is one trick I always try to remember: Instead of trying to take wood off on the first stroke, start by swinging the adze head so that it just grazes the work so slightly as to take off no wood at all. Let the blade just tap a few times, until you have the measure of the piece. Be sure to have a secure stance, and feel the rhythm of each swing in your grip. Then lean in just a hair to peel off that first paper-thin slice. It's a deliberate and conservative approach to taking the wood off, to be sure—but as they say, it's "much easier than putting it back on."

A variant of the lipped adze shaped with a more deeply curved edge (more like a gouge) but forged on traditional shipbuilder patterns, was also used when lining-off the molded surfaces of sawn frames to receive the planking, much as a carpenter uses a scrub plane. This type of adze allowed very quick removal of stock across the grain to create a temporary groove whose bottom established a fair reference line for other dubbers to use as a guide to bring the remaining stock to its final shape. A string was used across the faces of the frames to check fairness. A similar method was used in making a mast for the frigate CONSTELLATION in Baltimore, Maryland. It was shaped by a gang of adze-wielding young folks dubbing to grooves hewn by the master builder to establish the final taper of the spar, referencing the grooves by use of a plumb bob at intervals of 5′.

Sharpening a lipped adze has always been a challenge. Round files, slipstones, and patience have done the job for years and still will, but finding the progressively finer stones needed to achieve a polished edge can be pricey. A modern handheld grinder with increasingly finer grits to hone inside the lips will save time today, but you'll still need patience and a bucket of water to avoid overheating the edge and losing the temper. Stick-on sanding pads wrapped around a ⅝″ dowel can also work well.

The Mystery

An adze is "hung" on its handle so that the blade is toed-in slightly instead of being perpendicular. A shop with a wood floor provides the easiest way to measure the set. Press the end of the handle against the wall at floor level. With the blade up and poll down, swing the adze head to the floor so that the pointed poll makes a mark in the wood. Then, flip the adze over. Brace the handle end against the wall just as before, and swing the cutting edge this time. The mark the edge makes on the floor should be closer to the wall than the mark

KANE BORDEN/MYSTIC SEAPORT MUSEUM

MASH DERRICK

***Above left*—Establishing a comfortable working position is essential to adze work. Walter Ansel found that sitting worked well for shaping a timber with complex curves. *Above right*—For the lugger GRAYHOUND construction (see page 56), Marcus Rowden found that the adze was the first tool he reached for when shaping the rabbet, especially here at the junction of the keel, deadwood, and sternpost.**

made by the poll. The distance should be between ½" and ⅝". Handles, of course, are best made to suit the individual's arm length and grip. But hanging the adze properly, and the same way every time, ensures that the blade will peel off those bible leaves.

So is that why the shipwright's adze has a poll? I don't really know. No one seems to have a sure answer. But one thing I do know is that if anyone who calls himself a shipwright tells you an adze's poll has no purpose, ask him to cut his off. You won't get many takers.

Mark "Jake" Jaquith has made a career in New England shipyards, working on a variety of vessels, from classic yachts and commercial fishing boats to hovercraft and submarines. He has built Noank sharpies for the Mystic River Boathouse and is currently starting an Alden Indian class racer "on-spec" in his shop in Bath, Maine. He can be reached at tojakes@gmail.com.

The Geometry of Rowing

Or: Why do I need a sliding seat for that nice wherry?

Text and illustrations by John C. Harris

My email software has a cunning, if slightly cynical, feature called "Canned Responses." Faced with a common boatbuilding question, I can select a friendly and articulate response that I composed long ago, add my correspondent's name to the top, and press "send." If my canned response feels facile, I might add a line or two of exposition and a note of sympathy. Invariably, a canned response is explaining why people *can't* do what they hope with their boats.

When this kind of response starts to feel worn with overuse, I take it as a signal that I ought to address the issue in public somehow. Which brings us to a sleek, low-slung 18′ lapstrake wherry that's among my stable of build-it-yourself designs. With a freeboard of scant inches, it depends upon a sliding seat and outriggers to elevate the oarsman and the oarlocks so that the 9′6″ sculls can clear the water—and the oarsman's knees.

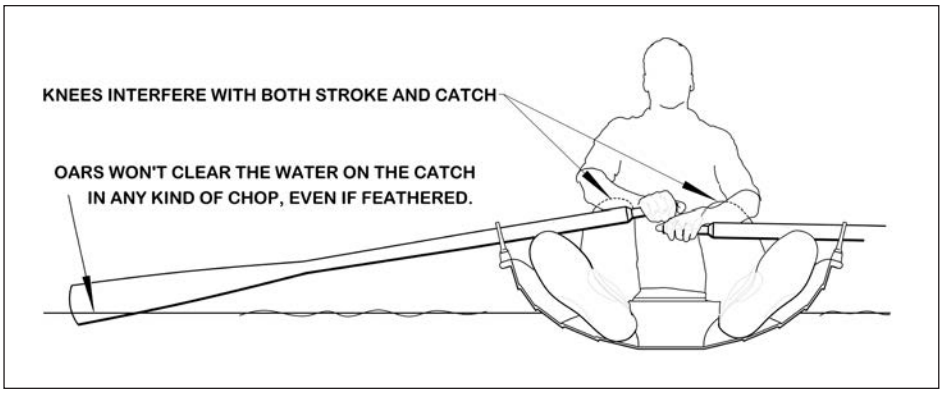
Wherry builders often contemplate the $1,000 cost of the drop-in sliding-seat unit and specialized sculls, then send me emails. "Why," they ask ruefully, "can't I mount ordinary oarlocks on the rails of that boat and use short, inexpensive oars?"

The glib answer is, "Because the oar handles will hit your knees every stroke," though my canned response limns on for a few paragraphs, attempting to explain why exactly this is so. The length of the oars and the three-dimensional interplay of a rowing boat's width and freeboard, and its seat location and height, determine whether you'll glide across the harbor like a swan or thrash the sea into foam.

Talking to other designers of pulling boats about the problem of getting all of the parameters in order on the drawing board, I learned that they had applied the same method I had: they experimented until it felt right. Physical mock-ups of seat height and oar length will eventually untangle the multi-dimensional riddle of a comfortable rowing experience, but it doesn't feel very *scientific*.

So, in hopes of retiring my canned response explaining why a skinny sliding-seat wherry is a lousy fixed-seat boat, I set forth with ruler, calculator, and a big spreadsheet. I surveyed a dozen fixed- and sliding-seat boats, recording every dimension and noting how the boat *really felt* on the water in all conditions. I mounted many of the boats of our demonstration fleet in cradles in the parking lot and had a photographer record the positions of the oarsman's body at different stages of the stroke, which I could then digitize and study on the computer screen. I wanted to devise a simple algorithm for oar length and a set of rules guiding the positioning of the seat in relation to the oarlocks.

***Above*—Subtle changes in the geometry of a rowboat can have a profound affect on the boat's performance. The boat above would be faster and easier to row if the oars were about six inches longer; note the broad span between the hands halfway through the stroke.**



Here we see why a fixed seat and gunwale-mounted oarlocks don't work on a 38"-wide wherry with 6" of freeboard: The oars will slam the rower's knees on each stroke.

The Characteristics of the Boat

Most of the formulae in circulation for calculating oar length use just a single parameter: the beam of the boat at the oarlocks. However, freeboard—the height of the oarlocks above the water—must be considered along with beam. Relying only on the boat's beam to calculate oar length results, for example, in oars that are too short if the boat is narrow but has relatively high freeboard. The oarsman's hands will swing high into the air during the stroke, which isn't efficient and looks sort of silly.

For the sake of simplicity, I'll confine these remarks mostly to traditional fixed-seat rowing boats such as peapods, dories, Whitehalls, dinghies, and so on. High-performance rowing craft like racing shells stretch or break most of the rules in the interest of speed. For example, a shell's freeboard is very low, yet the oars are very long, and racers accommodate this mismatch simply by using outriggers and by being very skilled. They feather oars precisely, barely skimming the surface on the catch. The best of them can make it look easy even in waves, but the rest of us find ourselves undone the first time our surface-skimming shells encounter a big motorboat wake. What I'm proposing here will give recreational rowing craft an agreeable feel in all conditions.

Rowing Posture

I still occasionally encounter people who hate the idea of overlapping the hands while rowing, but the reason for doing it couldn't be any simpler: An oar is a lever, and the oarlock is a fulcrum. The length of oar inboard of the lock determines the leverage applied. Every extra inch means more power. No one is making you row that way, but it's worth getting used to. A hand's width might give you 10 percent more power, depending on the beam of the boat.

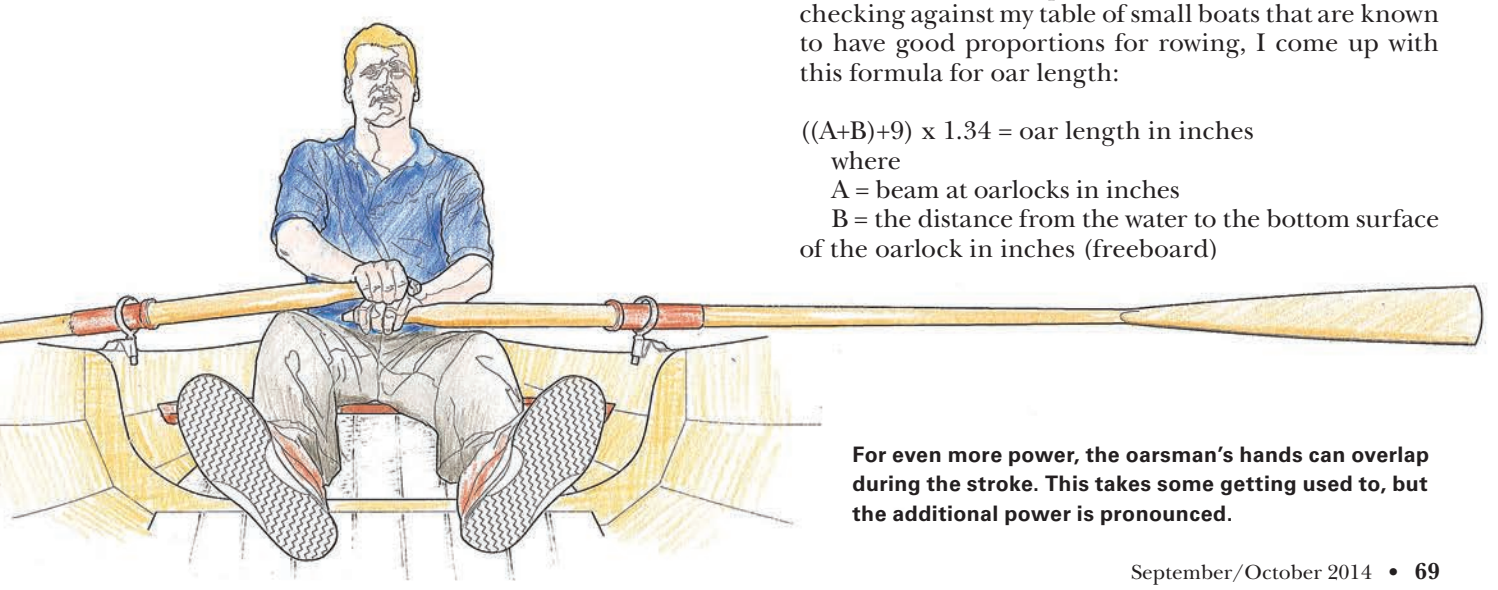
Oar Length Considerations

After 35 years of rowing fixed-seat boats—sometimes for days at a time—I know just how I like it. The blade of the oar should be immersed just to the throat, no more nor less, and I always row with about a hand's width of overlap at the handles.

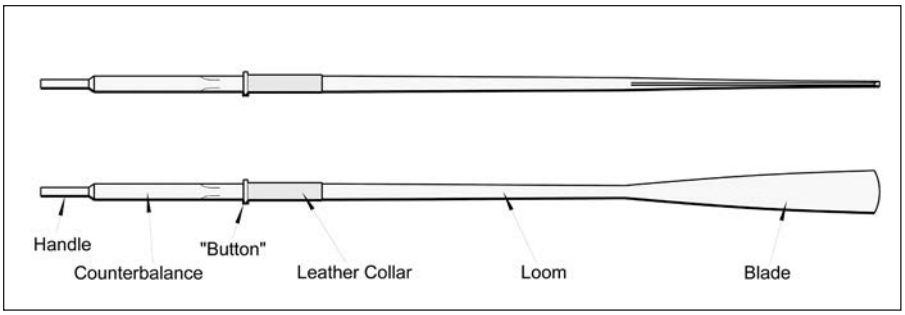
Oars that are too short for the boat will lack power and require an awkward windmilling stroke. Sometimes, such gyrations can actually chafe the boat's gunwales. I've seen people using the round, enclosed-type oarlocks rip the oarlock sockets off the rails when short oars bind in the oarlocks. Oars that are too long may prove impossible to lift clear of the water on the catch, and the inboard "lever" will feel too short for the oar and prove highly fatiguing. Long oars will also require feathering no matter what the conditions, and I try to avoid feathering unless I'm in a rowing shell or I've got a long way to go upwind. It's hard on my old wrists.

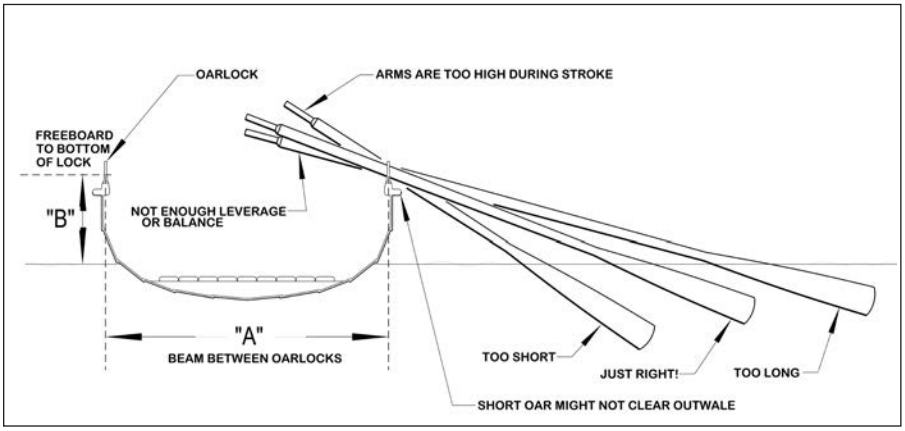
With freeboard as part of the calculation, and cross-checking against my table of small boats that are known to have good proportions for rowing, I come up with this formula for oar length:

((A+B)+9) x 1.34 = oar length in inches
where
A = beam at oarlocks in inches
B = the distance from the water to the bottom surface of the oarlock in inches (freeboard)



For even more power, the oarsman's hands can overlap during the stroke. This takes some getting used to, but the additional power is pronounced.





***Top*—The anatomy of a standard oar. *Bottom*—The oars' lengths are critical to rowing geometry: If they're too short, the arms will be too high during the stroke; too long, and they'll provide insufficient leverage.**

The small Whitehall shown in the accompanying drawings is 39½″ wide and the freeboard (taken from the plans) is just under 12″. This gives us an oar length of 81″. Since oars come in 6″ increments, we can round up to 84″, or 7′. These 7-footers feel natural; other calculations based only on the beam suggest 6½-footers, which in trials feel stubby on the boat.

Characteristics of the Oarsman

What if you're very tall or very short? In years of having people test boats in my shop's demonstration fleet, I've observed that oar lengths based on beam and freeboard seem to fit the middle 75 percent of humanity, even for serious rowing. If you're quite short, you are effectively sitting lower in the boat than a tall person, which means that in relative terms you'll be reaching "up" to the oar handles. Longer oars—within reason, keeping in mind the leverage dynamics of the oar—will lower the handles. The handles should be level with the middle of your ribcage throughout the stroke.

Especially tall oarsmen have a different problem: knee clearance. Using shorter oars makes it easier for the blades to clear the water without banging into your knees on the catch, but a taller oarsman is unlikely to want to resort to shorter oars. If there's some way to lower the thwart an inch or two, that will be a lot more helpful in creating knee clearance.

Seating Considerations

Nothing turns a nice row into a forced march more than uncomfortable seating. Fortunately for designers and builders, my survey suggests that the geometry is very consistent, from small dinghies right on up to big dories.

The height between the top of the seat and the bottom of the oarlock should be the beam in inches multiplied by 0.17. Thus our Whitehall finds a height of 7″ for the oarlocks above the thwart, and everyone from about 5′6″ to 6′3″ reports comfortable clearance all around.

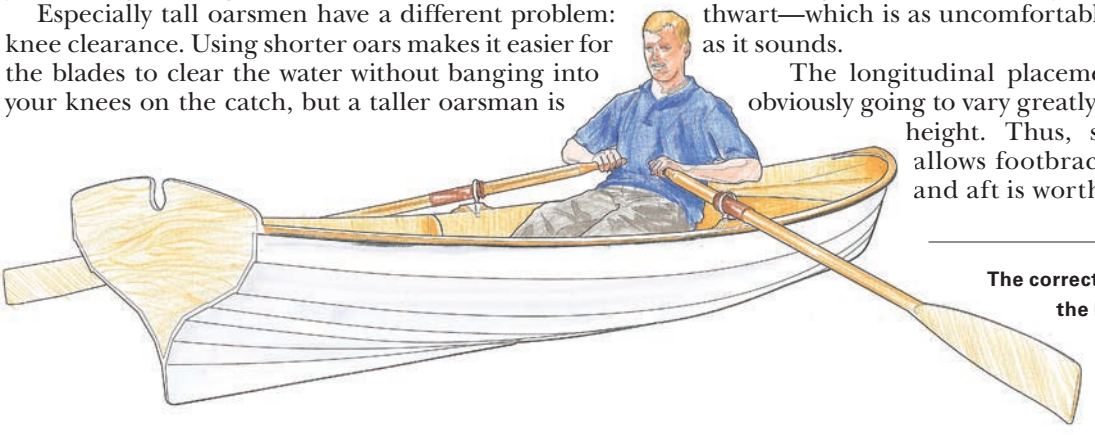
Likewise, I found broad consistency in the distance of the oarlocks aft of the after edge of the thwart. Multiply the beam in inches by 0.22, yielding just under 9″ for the Whitehall. Thwarts ought not to be narrower than about 9″. Making them as wide as possible allows rowers of differing heights to scoot forward or aft for more comfort.

For rowing in a variety of conditions—for example, when a passenger is seated in the sternsheets—the location and geometry of additional rowing stations should be given equally careful thought so that comfort and efficiency are maintained.

Footbraces

Footbraces are absolutely essential in good rowing craft for transferring power. If you don't have them, you're actually transferring your forward thrust to the boat through the friction of your posterior on the thwart—which is as uncomfortable and as inefficient as it sounds.

The longitudinal placement of footbraces is obviously going to vary greatly with the oarsman's height. Thus, some scheme that allows footbraces to shift forward and aft is worthwhile.



The correct oar length for you and the boat will keep the oar handles about mid-height on your ribcage through the stroke.

Why Adirondack Boats Break All of the Rules and Get Away with It

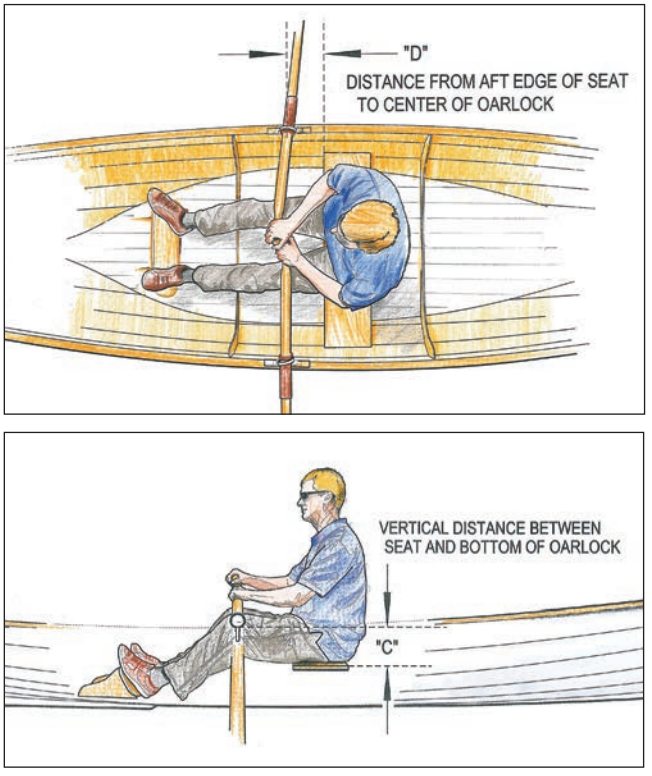
Adirondack guideboats are a historic type of hunting and fishing skiff evolved by 19th-century sportsmen for angling in the eponymous lakes. They are famously fast under oars, but compared to conventional skiffs and dories they have somewhat peculiar rowing geometry. Anticipating an avalanche of letters from guideboat partisans, I decided to take a look at why they work the way they do.

Guideboats are low and narrow. 36″ of beam is typical, and that's far below the usual threshold for oarlocks mounted on the rails. The oarsman sits in a reclining caned seat, and the seating position most resembles that of a kayaker: The knees are bent and flattened out towards the rail to create clearance for the oars. Even so, the stroke tends to be shorter than in a conventionally proportioned rowing boat.

The overlap of the oar handles is pushed to extremes. Something like 5½″ of overlap is typical, says guideboat builder and designer Steve Kaulback. The oars are springy and light, and handling is simplified in some ways by having them pinned at the locks. With a lot of leverage thanks to the overlap, plus a narrow waterline and light hulls, guideboats are capable of startling bursts of speed.

It really works because guideboaters are willing to have so much overlap of the oars at the handles. "It's a tough argument to win," says Kaulback, who's probably built and sold more Adirondack guideboats than anyone in the last century. His 13′ "pack boat" uses 7′ oars, whereas my formula suggests 5½-footers. The success of guideboat oar geometry offers useful lessons for anyone contemplating mounting oars on low and narrow boats: You'll need to sit very low in the boat, you'll need a lot of overlap at the handles, and you'll be taking a shorter stroke. So maybe you can make fixed-seat oars work on that low-slung wherry after all.

—JCH



The longitudinal and vertical placement of the thwart and oarlocks is the difference between a nice row and a painful slog.

The vertical height of the oarsman's heels will also vary greatly depending on the depth of the boat. A deep-bodied traditional rowing boat will have the thwart set comparatively high above the floorboards and the oarsman's knees will be bent comfortably. A shallow boat will require the legs to be straighter. If you find that you just can't fit your knees under the oar handles during the catch, that's a signal that you need to elevate the oarlocks with outriggers or taller oarlock pads. The engineering of oarlock pads, especially high ones, is not trivial; your leverage on the oars puts a great deal of torque on the pads. I've torn off more of them than I care to admit.

Conclusions

I tried plugging boats with oddball dimensions into my spreadsheet to see whether garbage begat garbage. Reassuringly, these calculationss spit out short oars for narrow, shallow boats, and long oars and logical seat heights for wide and deep boats. But this is the place where a warning for the boffins is in order: If you're designing a boat with odd proportions, expect odd results. The formula works well for the middling spectrum of traditional smallcraft.

My experience in issuing mathematical prescriptions of this sort also suggests that the math will bang up against common sense sometimes. I've sold about a thousand 8′ dinghies whose proportions suggest 7′6″ oars. But storing such long dinghy oars is a hassle quite out of proportion to any advantage you'll gain paddling the thing across the harbor. We've always shipped 6′6″ oars and the dinghy goes just fine. So don't get too hung up on the numbers.

Likewise, most sliding-seat boats are exempt. Every rowing shell or wherry of my acquaintance has a beam of 63″ between the locks, uses 9′6″ sculls, and the drop-in sliding seat units takes care of the seat height question. The sliding-seat guys have been refining that geometry for 150 years and we'd best not monkey with it.

John C. Harris designs, builds, and writes about boats at Chesapeake Light Craft in Annapolis, Maryland.

Please visit the Bonus Content section of our website (www.woodenboat.com) to view a list of boat examples and their dimensions, and to receive further guidance on oar selection.

ALI GOODWIN

Building an Amesbury Skiff

PART 1

A classic outboard-powered boat, in oak, locust, and cedar

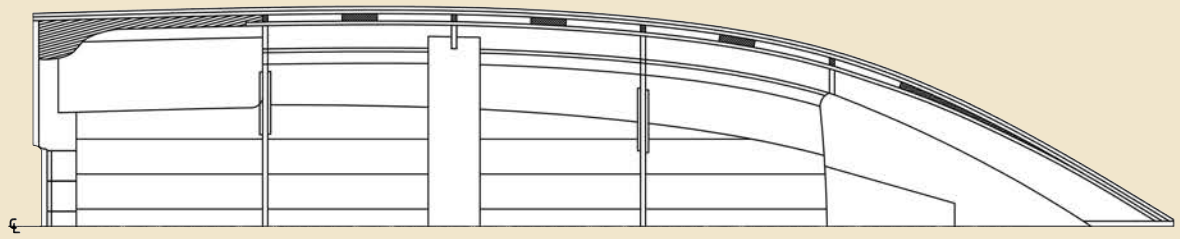
by Graham McKay
Construction photographs by Bob Barton

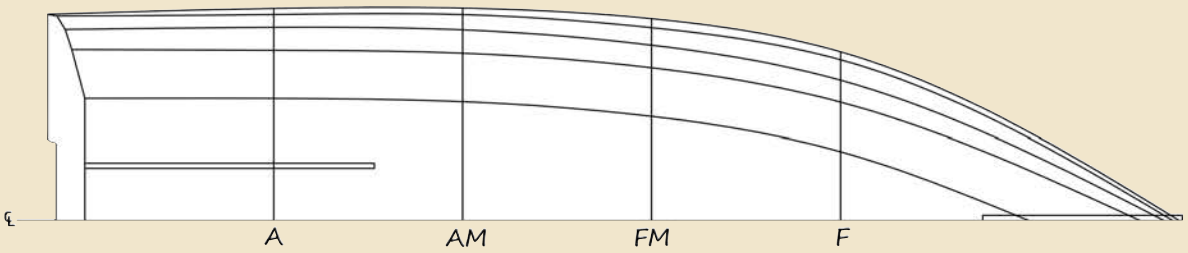
Over the course of 80 years, the Amesbury Skiff from Lowell's Boat Shop in Amesbury, Massachusetts, earned a reputation for being exceptionally stable, seaworthy, and rugged. These boats and their ancestors were used commercially for livery, fishing, and rescue work. In more recent years the Amesbury Skiff has proven to be an ideal and extremely versatile family boat. With two side seats in the stern and two thwarts near amidships, these skiffs are comfortable and capacious. The one we'll build on the following pages is a basic tiller-steered outboard version, but a control console could be added for wheel steering. Lockers could also be added under the stern seats.

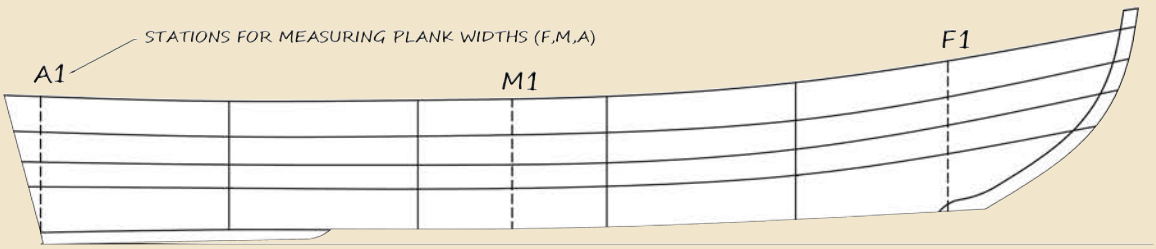
Amesbury Skiffs are technically and historically "dory skiffs"—that is, they're lapstrake-planked flat-bottomed boats with bottom planking running fore-and-aft. The Amesbury Skiff as it is known today evolved from round-sided, narrow-sterned forebears. Around the turn of the 20th century, builders began fitting dories with newfangled one-cylinder make-and-break engines. The resultant power dories were great for their times, but the heavy engines caused their fine sterns to squat. The cure was a wider bottom at the transom—a solution that gave rise to the boat type we'll build here.

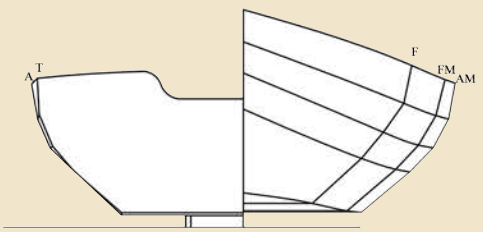
Today at Lowell's Boat Shop, we build Amesbury Skiffs with stem and frame patterns labeled "O.B. Skiff." These patterns are nearly identical to those for our round-sided Surf Dory. Given the similarities in the shapes of the frames and stems of the two boats, it is clear that the Amesbury Skiff evolved from the Surf

***Above*—The Amesbury Skiff is a classic outboard-powered workboat derived from the dories of the Massachusetts North Shore. It is also an ideal recreational boat—great for exploring, fishing, and family outings.**









OFFSETS IN FEET-INCHES-EIGHTS TO INSIDE OF PLANK AND BOTTOM HEIGHTS ABOVE BASELINE							
	STATIONS	TRANS	A	AM	FM	F	STEM
HALF BREADTHS	BOTTOM	1-8-7	1-8-7	1-8-2+	1-5-6+	0-11-6+	0-0-1
HEIGHTS	BOTTOM	0-3-0	0-3-4	0-3-3+	0-3-6+	0-5-1	0-6-7
STATION SPACING 32 ½ " CLEATS EVENLY SPACED BETWEEN STATIONS							
PLANK WIDTHS TAKEN **VERTICALLY** FROM INSIDE OF BOTTOM AT BASE OF STEM (F1), MIDSHIPS (M1), AND BASE OF TRANSOM (A1) NOTE: WIDTH MEASUREMENT REFERS TO WIDTH OF PLANK SHOWING AND DOES NOT TAKE INTO ACCOUNT THE 1" FOR THE LOWER LAP							

	F1	M1	A1
GARBOARD	13 ½"	10 ½"	11"
1	5 ¼"	5 ½"	5 ¼"
2	5 ¼"	5 ½"	5 ¼"
SHEER	6 ½"	7"	6 ¼"
TOTAL	30 ½"	28 ½"	27 ¾"

The skiff on these pages was built of solid wood—save for the plywood garboards. The construction is simple and strong, requiring no lofting or temporary building jig.

Dory model, with the most obvious change being the shape of the bottom to a "flatiron" form.

The construction of these skiffs is out of the ordinary. They were designed (perhaps that's too strong of a word, for they actually evolved) to be built quickly and to be forgiving of irregularities in construction. As such, there is no lofting required.

The construction of boats at Lowell's is detailed in a single sheet of notes giving a few measurements for the bottom shape, which patterns to use for the frames and stem, rough transom measurements, bottom rocker, and plank lining. Frames and transom are cut larger than their finished forms and are trimmed as the planking progresses. Some notes exist for seat placement and finishing touches; however, rail and breasthook construction, and a multitude of other details, are understood to be pretty standard. Since you don't have access to our patterns, I have developed the drawings shown here, based on the age-old patterns that we still use at Lowell's Boat Shop.

While dory and dory-skiff construction is basic and forgiving, one should take care with every step. I believe that the best available reference for the construction of these types of boats is *The Dory Book,* by John Gardner, and I'd advise having a copy of it handy if you embark on building one of these boats. The book's only omission is a description of how to cut a dory lap—a process I'll explain in Part 2 of this series. If you get hung up on the dory lap, or any other part of the construction, please know that Lowell's is as much a teaching institution as it is a museum and working boatshop. We are happy to answer specific questions for anyone undertaking dory projects of their own. (Our contact details appear at the end of each installment of this series.)

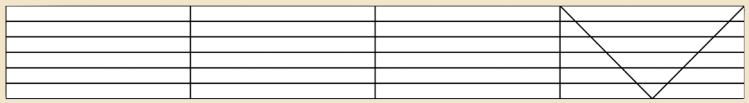
Construction begins with the skillet, which, in dory parlance, is the assembled bottom, with frames, stem, and transom attached; the resulting frame is said to look like a spider skillet—a three-legged cast-iron pan used for cooking over an open fire. Assembling the skillet requires a series of steps, the first of which is to lay out the bottom.

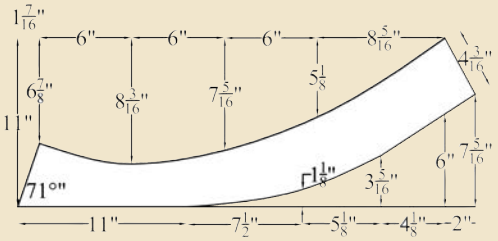
Bottom

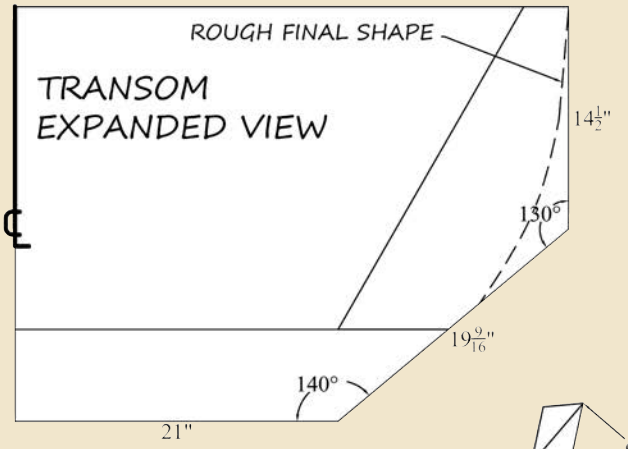
The maximum width of the bottom is 41¾″. I make up the bottom blank of ⅞″ cedar or heart white pine planks in widths between 5″ and 8″. Traditionally, wider planks would have been used, but wider planks, because they shrink and swell more than narrow ones, cause the plank seams to open up unacceptably when the boat is out of the water. Join the planks so the seams between them are tight, reserving the widest planks for the outboard locations. Clamp the planks together and lay out the bottom shape before planing their edges for caulking seams (see sidebar); otherwise the planks will tend to buckle when clamped together from below with pipe clamps.

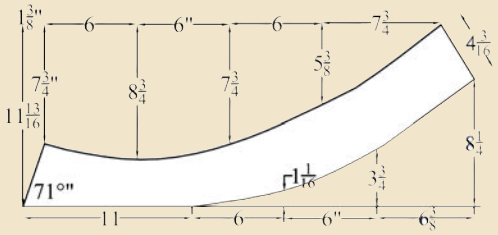
To lay out the bottom shape, first draw a centerline, leaving enough stock on either side for the maximum half-breadth. Avoid having a plank seam on the centerline, as this will cause a weak site for fastening the stem and the joint will eventually leak. Once you have a centerline, lay out frame stations at right angles to it, and mark their half-breadths. Next, bend a batten in a fair curve around the half-breadth marks and draw the outline of the bottom. Resist the urge to cut out the bottom at this stage as you're about to take it apart briefly, and cutting it now will make it a bear to clamp back together.

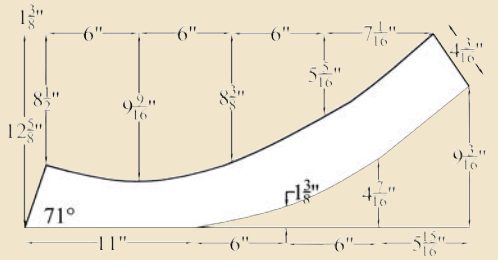
Now that you have the bottom outline marked, it's time to lay out the cleats that go between the frame stations to hold the bottom planks together. Divide the

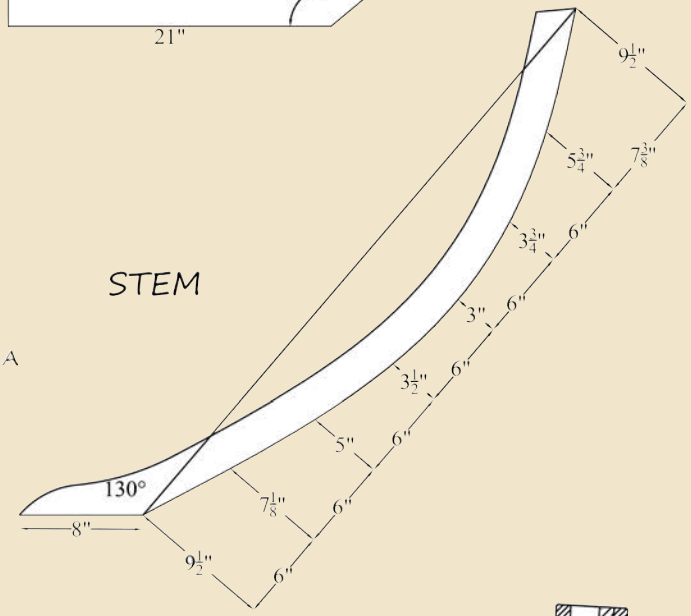


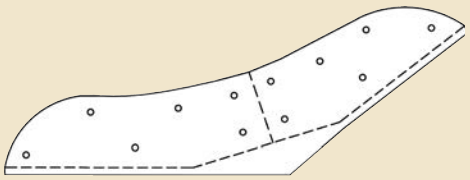






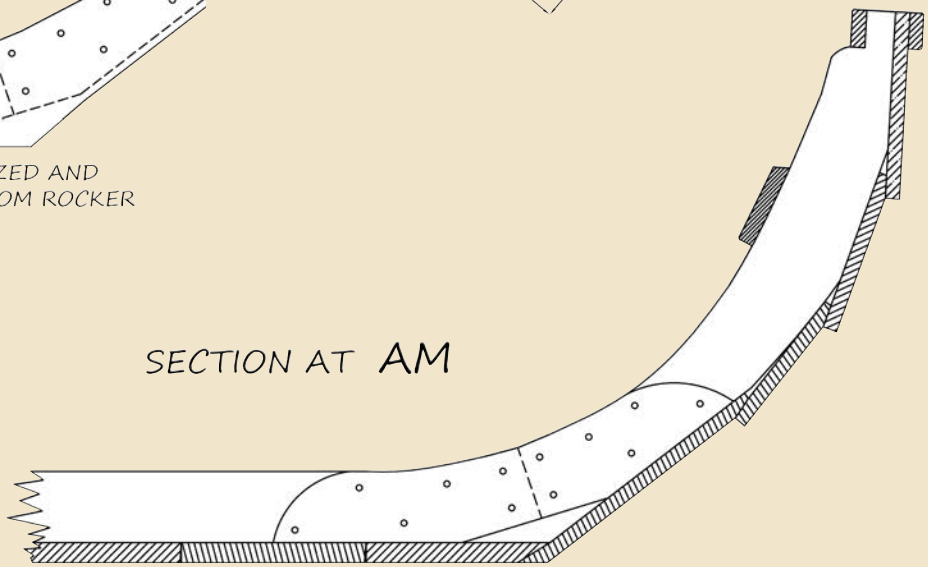






GUSSETS LEFT OVERSIZED AND TRIMMED TO FIT BOTTOM ROCKER AND PLANK BEVEL

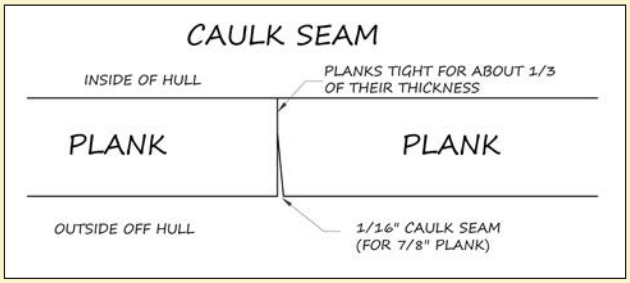
SECTION AT AM



Caulking Seams

Caulking seams are wedge-shaped gaps between planks that allow for caulking material to be driven between planks to make a hull watertight. As with most boatbuilding tasks, if you ask five boatbuilders how to lay out and cut these seams, you'll get five different answers. John Tohancyn first had me cut caulking seams while planking a schooner with 2½″ planking; those seams were nearly big enough to drive ⅜″ line into, and we cut them with a power planer. Caulking seams on small boats such as the Amesbury Skiff are a much more delicate matter: My rule of thumb is to create 1/16″ of seam width for every inch of planking thickness. The depth of the seam should be two-thirds of the planking thickness; this provides enough room for caulking and putty, and also leaves the planks touching for one-third of their thickness. While it's not a concern on the lapstrake-planked Amesbury Skiff, take care with the caulking seams on the topsides of carvel-planked boats; they draw the eye, and thus their quality speaks for the quality of the boat. The seams on the bottom of the Amesbury Skiff are a good place to gain skill and confidence in this operation.

—*GM*



distance between frame stations into three equal parts; this will give you spacing for two cleats between each frame. Cleats are typically ⅞″ × 2″ oak, or leftover bottom stock, riveted through the bottom—although one can also use screws. To make the cleats, rip up some stock in lengths longer than the bottom is wide at each cleat station. Lay the stock directly on the bottom and center it over the cleat station. At each cleat station, mark the cleats an inch shorter than the bottom is wide. Cut the cleats to length and dress them as you see fit. I recommend laying them on the shop floor and walking on them with your bare feet; this will give you an idea of how much you want to round their corners and sand them.

Before permanently installing the cleats, take the clamps off the bottom, disassemble it, and mark and cut a 1/16″ caulking bevel on one edge of each plank. Then clamp the bottom back together, this time with the bar clamps on the *inside* of the bottom, as the planks will be less likely to buckle this way. As you clamp, you should use shims to create gaps of about ⅛″ between the planks at the transom. This gap will allow the bottom planks to swell without pushing the garboards away from the transom. Now you can fasten your cleats to the bottom, making sure to bed them in paint or in whatever concoction you prefer.

With the cleats now holding the planks together, remove the clamps and cut out the bottom, making sure not to get inside of the line you drew. It saves some time later if you cut the bottom at the transom to the angle of transom rake, which is 14 degrees. Finish by planing the edges of the bottom down to the line, but not beyond it.

Materials List

Wood

Bottom planking: ⅞″ white pine or cedar; enough to yield a bottom blank of 46″ × 14′ from 5″-8″-wide boards

Garboards: ½″ marine plywood; 1 sheet

Topside planking: ⅝″ white pine or cedar; approximately 100 linear feet, no narrower than 10″

Bottom cleats: ⅞″ × 2″ white oak or black locust; approximately 30 linear feet

Frames: ⅞″ white oak or black locust; 30 linear feet, minimum width of 2″

Frame gussets: ½″ marine plywood; offcuts from garboards

Stem: 1⅞″ white oak or black locust; dimensioned per drawings

Transom: ⅞″ white oak or mahogany; enough to yield a rough blank of 26″ × 60″

Fashion pieces: ⅞″ × 10″ white oak or black locust; 6 linear feet

Inwale: ⅝″ × 1⅝″ white oak; 16 linear feet, 2 required

Outwale: ⅝″ × 1⅝″ white oak; 18 linear feet, 2 required

Breasthook: 1½″ white oak, mahogany, or black locust; enough to yield a blank of 8″ × 12″

Transom pad: ⅞″ white oak or black locust; 20″ × 26″

Quarter knees: 1½″ white oak or black locust; enough to yield two blanks of 8″ × 42″

Seats and thwarts: ⅞″ pine, cedar, or mahogany; minimum width of 10″, see drawing for lengths

Skegs: ⅞″ × 3″ white oak; 9 linear feet

False stem: 1⅞″ × ⅝″ white oak; 4 linear feet

Risers: ⅝″ × 3″ white pine or cedar; 2 pieces of 12 linear feet.

Fastenings and Glue

Frames to bottom, hood ends at transom, laps at frames, transom to bottom: 2″ No. 10 silicon-bronze ring nails; 2 lbs

Garboard to bottom: 2½″ No. 10 silicon-bronze ring nails; 2 lbs

Hood ends at stem, inwale, false stem: 1½″ No. 10 silicon-bronze ring nails; 1 lb

Bottom cleats, frame gussets: 2″ No. 10 copper rivets; approximately 2 lbs

Plank laps: 1½″ No. 10 copper rivets; 4 lbs

Rails: 3½″ No. 10 copper rivets; ½ lb

Fashion pieces, transom scab, seat risers, seats, miscellaneous items: 1½″ No. 10 silicon-bronze wood screws; 1 box

Rails, skegs, miscellaneous items: 2″ No. 10 silicon-bronze wood screws; ½ box

Transom knees: 3″ No. 12 silicon-bronze wood screws

Epoxy: approximately 1 quart (unless epoxy coating the bottom and garboard, in which case 1 gallon)

Frames

With the bottom complete, it's time to make the frames. These are made of ⅞″ white oak or black locust in three pieces, consisting of two upper frames and a floor timber, joined together by plywood or oak gussets. At Lowell's Boat Shop, there are patterns for the upper frame pieces; however, their shapes can also be determined by using the drawings on page 75. The pieces are joined with a miter at the chine. Floor timber lengths can be measured right off of the bottom at each frame station, keeping in mind that they'll need to be beveled, or "dubbed," for the planks. To account for frame beveling, measure the lengths of the floors ⅜″ aft of each frame station's centerline; the resulting extra length will leave plenty of stock for this operation.

When laying out the upper frame pieces, it is best to find stock that has a natural sweep that conforms to the hull's curved sections. (I have a stockpile of black locust with the appropriate sweep, but it's hard to come by, so I have hidden it in a safe place.) The frames can also be gotten out of 10″- to 12″-wide oak planks laid out such that the lower part of the frame runs parallel to the grain of the wood. If you take this approach,

don't expect your frames to be free of grain runout at their tops. I also have had luck utilizing the bell of live-edge oak, or the natural bend in the grain around large knots.

When assembling the frames, make sure you correctly match the floor timbers and upper frame pieces with their individual stations—marked Forward (F), Forward Middle (FM), Aft Middle (AM), and Aft (A). Before you curse me for poor draftsmanship, please know that the gussets you see in the photograph are oversized to allow for beveling; much of the excess we see here will be removed before the frames are attached to the bottom. I bed the gussets in epoxy to add strength and to seal the end-grain of the frame pieces at the miter before fastening the whole sandwich together with copper rivets. The result of this operation should be four complete frame assemblies, one for each of the four frame stations.

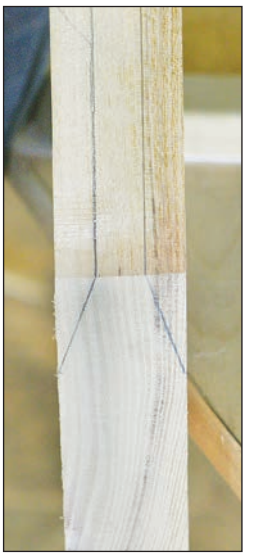
The underside of the forward frame assembly receives a 4-degree bevel so it angles forward by that amount; the forward middle frame gets a 2-degree bevel; and the after two frames are set up vertically. The forward angles of the two forward frames allow them to stand plumb when the rocker is sprung into the bottom. Set up each frame assembly at its station and trace on its underside the outline of the bottom (essentially a short, straight line). At the same time, trace the frame floors onto the inner. Bevel the lower portion of the frames to the angle you traced off the bottom to allow the garboard planks to lie fair on each frame. Before fastening, cut the chine corner off each frame to provide a limber hole.

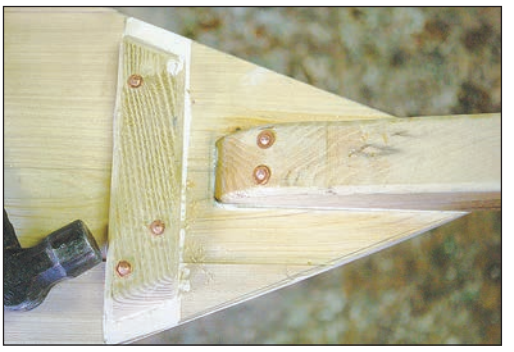
To fasten the frame assemblies, use the tracings of the frames to locate ⅛″ holes drilled from the inside out. This will mark the hole locations on the outside, allowing you to drill the proper ⅛″ holes from the outside, through the bottom, and into each frame assembly. Paint the mating surfaces and then clamp the frame assemblies in place one at a time. Fasten them with 2″ 10d bronze ring nails spaced about 2″ apart.

Stem

The stem is fashioned out of 1⅞″ white oak or black locust. Its shape requires a scarf about halfway up, put together with epoxy and screws. The screws are positioned at each end of the scarf, two on the interior face, and a single one on the exterior face right on the centerline so it will clear the stem bevel.

The initial stem bevel is determined from the bottom shape. First, draw two lines on the face of the stem ⅝″ in from the edge; this will leave you with a ⅝″ space down the middle. Center the stem heel at the bow and clamp it so the lines you just drew on its face just intersect the sides of the bottom. This will leave a small triangular piece of bottom protruding forward of the stem. Now, as you did with the frames, trace the shape of the bottom onto the underside of the stem. Unclamp the stem and mark the point at which the line you just drew on the bottom intersects with the side. From this point, scribe a line on the side of the stem





parallel to its face. Using these lines as guides, bevel the bottom 38″ of the stem. This rough bevel will be adjusted as you plank, and the upper stem will be fine-tuned when the sheer plank is ready to fasten. Bed the stem in your choice of bedding and fasten it with two 2″ ring nails and two copper rivets through the toe.

Transom

The transom is made up of two or three pieces of edge-joined mahogany or oak. The rough dimensions for the transom blank are 26″ × 60″. I used to simply edge-glue the pieces together with epoxy and depend on the various backing pieces added later to hold the whole works securely. Since then, we acquired a tongue-and-groove router-bit set at the shop, so I now put them together with epoxy and tongue-and-groove joints; this adds a little strength, especially when using oak, which doesn't take epoxy well. It also helps with alignment.

The base of the transom sits on the bottom and is beveled at 14 degrees to give the transom the appropriate rake. A hardwood cleat is attached at the inside bottom of the transom for strength and added nailing surface. So-called "fashion pieces" are also added to the sides of the transom to provide more backing for nailing and to help hold the transom together. Bed the bottom of the transom, keeping in mind that this is a well-stressed joint; fasten it with 2″ ring nails or screws.

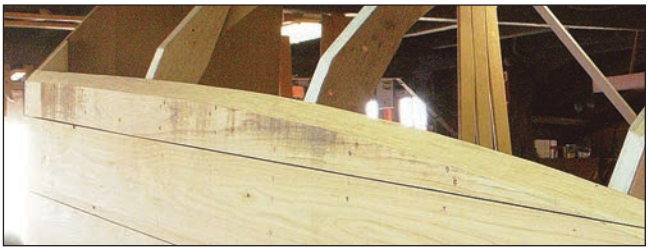
Bottom Bevel

With the skillet complete, it is now time to bevel the bottom to accept the garboard. The watertight nature of this joint depends entirely on the evenness of the bevel, so sharpen your plane, take a breath, and take your time. But no pressure!

To begin: Tip the skillet so the bottom is vertical, and use some strips of scrap clamped to the frames to prop the whole works up. You will need a drawknife, spokeshave, and straightedge. At each frame, scoop out

a 6″ or 8″ bevel with the drawknife and fine-tune it with the spokeshave until you've brought the inside corner of the bottom to a feather edge, and the straightedge lies flat on both the beveled edge and just off (that is, not contacting) the lower part of the frame. Take one more pass with the spokeshave, focusing on the outside face of the bottom to create a slight gap. The straightedge should now bear ever so slightly on the feather edge and should begin contacting the frame at a point about 6″ up. Don't be afraid to carry your scooped-out bevels 6″ to 8″ on either side of the frame, as this will make fine-tuning with the spokeshave easier—just make sure the lowest part of your "scoop" does not go deeper than the line of the frame. Use the same process for beveling the bottom at the stem and transom; however, at these points, the straightedge should bear against the stem or transom all the way to the feather edge, and there should be a slight opening at the bottom of the bevel, as there was at the frames. The slight gap ensures that the garboard and bottom are in contact with each other all along the feather edge; the beveled edge of the bottom, upon swelling, will press into the garboard slightly, assuring a watertight joint. This joint will not be caulked, as it's full of nails and the caulking risks pushing the garboards away from the bottom board.

With the initial beveling complete at each frame as well as at the stem and transom, the edge of the bottom should resemble a landscape of hills and valleys. Using a good batten, connect all the low points of the scooped-out bevels with a fair curve and draw a nice dark pencil line. I advise students to also run their pencil along the corner at the inside face of the bottom,



and to keep that marked corner sacred: If that line disappears, you've gone too far.

With the bevel thus laid out, you can begin removing the remaining material. The old-timers undertook this bevel without the use of pencil lines; a fairing batten was all they needed, and you will find that you will need one too. A piece of lauan plywood, 12″ wide and 4′ to 5′ long, will serve this purpose well. As you remove material from the edges of the bottom, lay the fairing batten on two frames and along the bottom's edge in between them as a sort of sample plank to test your fit. (You must, of course, be sure to bevel the frames first.)

When you have completed your bevel and can't see daylight anywhere between the bottom and the fairing batten, the skillet is ready to go down on the building bed. At Lowell's we have several building beds, or strongbacks, made from a piece of 2×8 the length of the bottom, raised to about 12″ above the floor and leveled as much as can be done in a 150-year-old shop. The building bed will provide a solid foundation on which to build the remainder of the boat and keep it from wracking while bending the side planks.

Amesbury Skiffs have what we call reverse rocker. Rocker refers to a fore-and-aft curvature in the bottom. On the 16′ Amesbury, the bottom at the bow is

3⅜″ higher than the 'midship station and from there remains straight to the aftermost station. The bottom then takes a ½″ dip from the aftermost station to the transom. This bit of "hook" in the bottom profile acts like a trim tab to help get the boat up on a plane. It also provides a little extra flotation aft to support the weight of the transom-mounted engine. At Lowell's, I am able to force the bottom down onto the bed with props from the overhead. However, if this is not possible in your own shop, you can use lag screws through the bottom and into the bed, and plug the holes once the boat is complete. The stem and transom should then be made plumb (stem) and level (transom) and braced in any manner available that will keep them that way and not interfere with planking.

Graham McKay is the manager and head boatbuilder at Lowell's Boat Shop in Amesbury, Massachusetts. He is also a professional captain of traditionally rigged vessels and he holds an MA in Maritime History and Archaeology from the University of Bristol. Graham lives in Newburyport, Massachusetts.

In the next issue, we'll plank and trim the skiff, hang a motor on it, and go for a test drive.

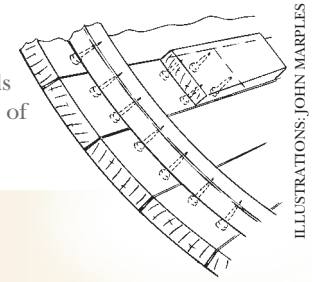
We strongly suggest that would-be builders purchase full-scale drawings from Lowell's Boat Shop. The price of the two-sheet set is $60.00. They may be ordered by contacting Lowell's Boat Shop, 459 Main St., Amesbury, MA 01913; 978–834–0050; www.lowellsboatshop.com. The shop also welcomes calls or e-mails from builders seeking assistance with construction problems.

Special thanks to Philip Capolupo and SPS New England for their loan of a motor for the photo shoot of our 16' Amesbury Skiff.

For 40 years WoodenBoat readers have been building boats

Traditional Construction

For centuries, builders of smooth-sided carvel hulls and "stepped" lapstrake hulls have fastened individually spiled planks of a light wood, such as cedar, to frames of a sturdy hardwood, such as oak.



ILLUSTRATIONS: JOHN MARPLES

MAYNARD BRAY

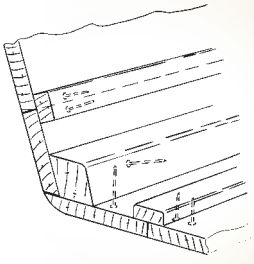
After several summers of sailing on the gaff-rigged sloop VELA (www.windwardpassage.org) with Haddie Hawkins, Jessie Moore needed his own boat. With Haddie's help, he started this Fiddlehead decked canoe (www.bryanboatbuilding.com) as a school project and finished the cedar-on-oak hull 14 months later. Jessie's grateful to Haddie and his wife, Beverly, for helping him with what he describes "one of the most exhilarating and rewarding experiences of my life."

Over 20 years ago, Barbara Zlotnik gave the plans for this Catspaw dinghy to her husband, John. He started construction of the cedar-on-oak hull in 2009. After four years of building, John launched the Joel White–designed boat last summer in Little Egg Harbor, New Jersey. Plans and companion book are available from www.woodenboatstore.com.

BARBARA ZLOTNIK

COURTESY OF ARTISAN BOATWORKS

BESHERTE is the second modified Buzzards Bay 18 built by Artisan Boatworks of Rockport, Maine. Alec Brainerd and his crew built the 29′ hull with edge-glued cedar planking on oak frames (see WB No. 231). The laminated mahogany backbone included a full keel, a change from the original keel/centerboard design. The Hart Nautical Collections at MIT hold the plans for this 1904 Nat Herreshoff design. BESHERTE sails out of New York City.



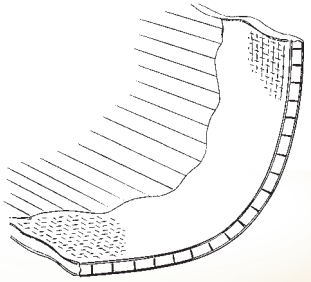
Jami Carhart spent weekends for the past three years building his Karl Stambaugh–designed Redwing 18, AKROTIRI. Construction is batten-seamed Alaska yellow cedar with trim in cherry and tigerwood. The 4-hp outboard is hidden under a motor well cover that also provides storage.

KAROLI CARHART

Batten-Seam Construction

In batten-seam construction, the planks are attached to frames and also to battens running parallel to the plank seams.

using a variety of methods. We present some of those methods here.



Strip-Planked Construction

In this favored method for canoes and kayaks, planking strips are all one size with either beveled or bead-and-cove edges. They are either edge-nailed or glued together. Adding a sheathing of fiberglass cloth set in epoxy significantly strengthens this type of hull.

SHAY SITAR

After taking a class at Woodenboat School with Ted Moores, Paul and Robin Shay of Cheshire, Connecticut, built this 15′9″ Huron Cruiser canoe, TUPELO HONEY, for sister Kathy Sitar and her son, Logan, seen here. The hull is strip-planked from red and white cedar. Plans are available from www.bearmountainboats.com.

DAVID CISE

THE GECKO is a 17′6″ × 2′ Spring Run kayak designed by Joe Greenley (www.redfishkayak.com) and built by David Cise for his wife, Carol. David had previously built a plywood-epoxy Chesapeake 17′ (www.clcboats.com). THE GECKO is his first wood-strip boat and is made from red cedar, white pine, and sapele. After three years of construction, he finally launched her in Utah's high desert lakes.

Reggie, Deb, and Jenelle Miller saw the Joel White–designed Jericho Bay skiff in WB No. 210 and bought the plans soon after. After two years of construction, the family recently launched her on Shuswap Lake, British Columbia. They made some elegant modifications to the basic strip-planked skiff, adding a canvas top and upholstered seats. Plans are available at www.woodenboatstore.com.

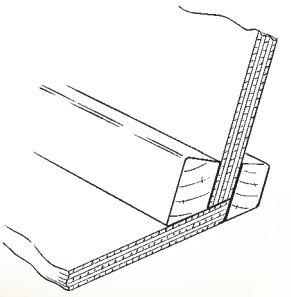
JENELLE MILLER

STEVE LUCAS

Steve Lucas of Lynnwood, Washington, recently completed this Outer Island kayak from plans by Jay Babina (www.outer-island.com). He strip-planked the hull with bead-and-cove-edge cedar strips. Steve enlarged the cockpit to 19″ wide × 26″ long. He writes that the 17′-long, 40-lb hull is a bit of a squeeze for his 6′2″ frame, but she's a joy to paddle.

Plywood Construction

In basic plywood construcion, panels are joined together with longitudinal members called chine logs. Because plywood does not bend in more than one direction at a time, designs are often multichined.



TOM GREGORY

Elizabeth Martin started building her 14′5″ BAY RUNNER as an eighth-grade project. She did quite a bit of research before choosing the Biscayne Bay 14 design. She bought the plans from The WoodenBoat Store (www.woodenboatstore.com) and built the boat with marine plywood on steam-bent white oak frames, fastened with bronze screws, following instructions in WB Nos. 96 to 98.

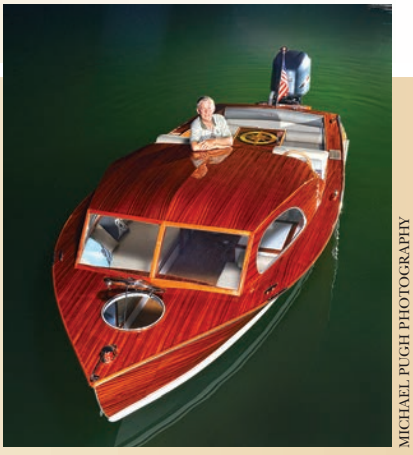
This 14′4″ Glen-L Zip was built by the father-and-son team of Wayne and Dan Brown, over four-and-a-half years. They launched THE MAIN SQUEEZE, a plywood-and-mahogany construction, on Mary Lake in Ontario last September. The pair had to build a new workshop halfway through the project, and enlisted 24 friends to help lift the boat over their fence before her launch.

WAYNE BROWN

JOHN BOUGHTON

“What if Jackson Pollock was raised by Tlingit tribesmen and decided to build a canoe in his Nautical Science class?” This was the interdisciplinary question put to the Montrose, Colorado, Navy Junior ROTC “Building to Teach” class that led them to create this 18′ Peace Canoe from plans by Chesapeake Light Craft. SEASICK SERPENT was one of six canoes launched at an NJROTC Adventure Week last August.

In March 2013, father and son Bill and Scott Turner launched this new Aristocraft Holiday 25. Bill’s father, Claude, designed the Holiday 18 when he ran Aristocraft Boats between 1946 and 1980. Bill and Scott extended the design’s 18′ length to 25′ and its beam to 9′. The hull bottom is meranti plywood and has ribbon-stripe plywood on the sides and deck. Trim is mahogany. More information at www.aristocraftboats.com.



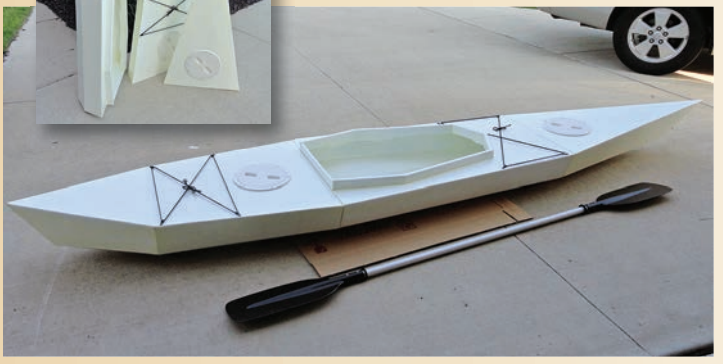
MICHAEL PUGH PHOTOGRAPHY

Plywood Construction

This construction method is often much cheaper and simpler than traditional plank-on-frame methods, and because plywood is dimensionally stable, boats built from it can be dry-sailed without leaking when launched.

Tony Greco built a 12′6″ SEA GAL, designed by William D. Jackson, in Brooklyn, New York, in 1958. After his son, Robert, found the Sea Gal plans online, the pair built a second one in 2013. This SEA GAL is powered by a similar 1956, 30-hp Johnson outboard, and the same Sea King steering wheel with drum-and-pulley steering that their original had.

ROBERT GRECO



EUN S. YOO

Young Soo Chung designed and built this take-apart kayak that he calls a Stealth K12 design. It can be transported as three 4′ sections, and then fastens together into a 12′-long kayak in a matter of minutes. It cost about $300 and takes 20 hours of work. More center sections can be added for more paddlers. Contact Young at peteryschung@yahoo.com.

Seeking a seaworthy craft for camp-cruising, Burton Blais decided to build a Chesapeake crab skiff designed by Doug Hylan (www.dhylanboats.com). Burton, who lives in Ontario, spent a year putting the hull together, using mahogany plywood, Douglas-fir, pine, and black walnut. JACKRABBIT III is named after Burton's hero, cross-country skiing legend Hermann "Jackrabbit" Johannsen.

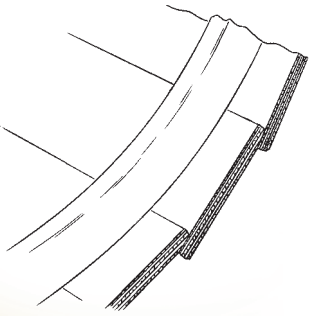
NATALIA LISOVSKY

STEVIE ADDISON

Desiring a sea kayak stable enough to paddle on the Great Lakes, Rick Turney of Indianapolis, Indiana, created this catamaran sea kayak that he calls the Oceansled 19. Each of the 4mm okoume plywood hulls is 20″ wide and 19′ long and weighs 49 lbs. The overall beam is 9′. The detachable plywood akas each weigh 11 lbs. Contact Rick at 317–254–2087.

Glued-Lap Construction

Many designs covered in *WoodenBoat* in recent years are of glued-lapstrake construction. Glued-lap boats look like traditional lapstrake hulls with fewer (and often no) frames and thinner planks, which results in an overall lighter, stronger, and more weather-resistant hull than traditional lapstrake construction.



DON MILLER

PATIENCE is a Marisol sailing dinghy designed by Gifford Jackson (see WB No. 12) and built by Steven Liebhauser. It took Steve two years to build the plywood-over-oak hull in his garage. PATIENCE has mahogany trim, spruce spars, and a cedar mast. Her hull is covered with Dynel. Steve says she's a joy to sail and row on Narragansett Bay near his home.

John Hutton built this Acorn 12 dinghy in Golden, Colorado, and trailered her to Guilford, Connecticut, where his family has had a summer home for generations, for her launch. EALA's glued-lapstrake, 11′9″ hull is made from okoume plywood, yellow cedar, white oak, and mahogany. John built EALA, Gaelic for swan, from plans by Iain Oughtred (available from www.woodenboatstore.com).

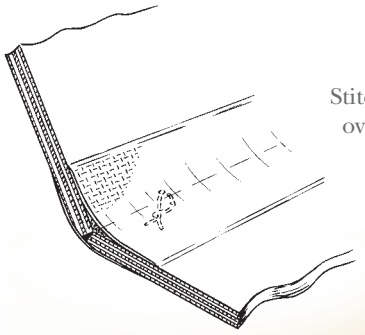
CHRISTINA HUTTON

FRANK KIELISZEK

François Vivier (www.vivierboats.com) and Clint Chase (www.clintchaseboatbuilder.com) collaborated on the design of the Jewell Class yawl, a 20′ family weekender. Frank Kieliszek of Norway, Maine, owns the first Jewell class, LEILU, built by French & Webb of Belfast, Maine, and launched last August. Plans and CNC-cut kits are available for this glued-lapstrake design at www.vivierboats.com.

Ellery Down of Victoria, British Columbia, recently launched this 12′ peapod (see WB Nos. 222 and 223) designed by Arch Davis (www.archdavisdesigns.com). He borrowed space in a friend's garage to build CHARI. The hull is made from marine plywood and epoxy. Ellery and his wife, Chari, take CHARI rowing or sailing on the waters near their home.

ELLERY DOWN



Stitch-and-Glue Construction

Stitch-and-glue is another plywood construction method, in which the hull planks are not built over a mold, but instead are stitched together with wire to form a boat-shaped skin. Fiberglass tape and epoxy fillets permanently close the seams, and the wires are removed.

LORENZ RUTZ

Lorenz Rutz built this Firefly design from Ken Bassett with some construction modifications. Bassett specified a stem, keel, and chine. Lorenz built a stitch-and-glue hull without those components; two bulkheads provide stiffness. Lorenz rows BLACK DAMSEL on the Connecticut River in northern Vermont. Plans are available at www.woodenboatstore.com.

DON SANDALL

Susie Sandall of Edmonds, Washington, was inspired enough by her husband's boatbuilding skills to build her own boat. At age 78, she built BOA-T, a 13′ Mill Creek kayak kit from Chesapeake Light Craft. The kit is of stitch-and-glue construction, then covered with epoxy and fiberglass. Susie launched her kayak last July at Point No Point on Puget Sound.

JOSHUA FEIL

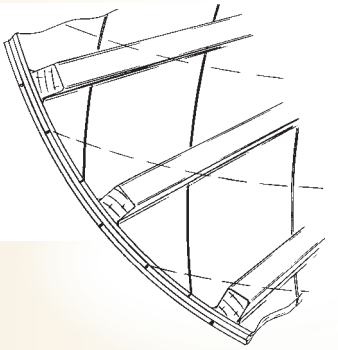
BLACK AND TAN is a 14′ × 5′ Rapid Robert driftboat designed by Tom Kaarhus. Mack Hodges and Josh Feil built her stitch-and-glue hull from okoume and sapele plywood and mahogany. They launched her last fall and use her for fly-fishing on the rivers of northeastern America. Plans are available from www.riverstouch.com. The build is documented at www.btdriftskiff.blogspot.com.

DUSTIN CASTLE

Tom and Kelli Zeidlik love sailing their new Northeaster Dory, FAIR WINDS, in the lakes of North Dakota. Thomas built the Chesapeake Light Craft (www.clcboats.com) design using their LapStitch construction which is an adaptation of stitch-and-glue. Tom reports that he built this boat during a time of grief, and he's sure it saved him a lot of money at the psychiatrist's office.

Cold-Molded Construction

Cold-molding involves laminating a hull with layers of wood veneer and epoxy. Starting with a solid mold covered with plastic, the builder lays veneer sheets, a few inches wide, on the diagonal, typically with each layer perpendicular to the one below it. It is labor intensive, but allows complex shapes to be built.



DAVID PATTERSON

David Patterson launched this Barrelback 19 (www.glen-l.com) runabout, DEVIL WOMAN, at the International Classic Wooden Boat Show in Branson, Missouri, last September. The boat is cold-molded mahogany plywood on mahogany frames. David powers this Ken Hankinson design with a 351 Ford Pleasurecraft engine.

GORDON LEIGHTON

Jeff and Colleen Stobbe recently launched SPARKLE, a highly modified Joel White Haven 12½ design, in Monterey Bay, California. They lengthened her from 16′ to 18′, removed the centerboard, installed an 11-hp diesel engine, and added a 700-lb lead keel. She won the Santa Cruz Concours d'Élégance last summer. Contact them at cjstobbe@live.com. Get Haven 12½ plans at www.woodenboatstore.com.

BRIAN BUNTON

Dave Higby of Maiden Michigan Marine recently launched this 16′ Gentleman's Racer, called MAIDEN MICHIGAN III, based on boats by Nelson Zimmer, Hacker, and Chris-Craft. He used only wood grown in Michigan including walnut, cherry, white oak, and basswood. The hull is triple-planked and covered with epoxy and fiberglass. Contact Dave at dhfinishcarpentry@gmail.com.

BUD McINTIRE

Pat Mahon's second-year class at the Great Lakes Boat Building School built this 26′ cold-molded replica of a John Hacker–designed gentleman's racer. The design, sponsored by the American Power Boating Association, debuted in *Motor Boating* in June 1922. Joe Adams, a wooden boat collector, commissioned the project. The school was fortunate to have Tom Flood, a leading expert on Hacker's designs, as an advisor.

RELAUNCHINGS

These pages, along with the Boat Launchings section of www.woodenboat.com, are dedicated to sharing recently launched wooden boats built or restored by our readers. If you've launched such a boat within the past year, please write us at Launchings, WoodenBoat, P.O. Box 78, Brooklin, ME 04616 or email us at launchings@woodenboat.com.

Moores Marine of Riviera Beach, Florida, recently restored SHIREAN, a 1929, 46′ power cruiser built by Morton Johnson & Co. of Bay Head, New Jersey. During World War II, she was conscripted by the U.S. government to patrol for submarines. Moores Marine (www.woodenboatrepair.com) restored her to her former glory, removing several structural and cosmetic modifications, and refinishing her completely.

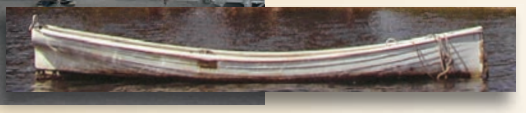
COURTESY OF MOORES MARINE

ELIZABETH McLEOD

Bob Oliva, a WoodenBoat School alumnus, built ten canoes for his family over the years. Last summer, he restored five of them. The canoes seen here are two Wee Lassies, two Wee Lassie IIs, and a Rob Roy, all between 12′ and 13′6″ long. They're made from red and white cedar, mahogany, maple, ash, and pine. Bob builds and paddles canoes in Newbury, Massachusetts.

PPALU is a 75′ catamaran, designed and built by Peter Spronk, that Randy West helped launch back in 1978. Randy wanted to buy her then, but didn't have the means. He finally did buy her in August 2013. Randy and his wife, Joanne Roberson, worked at St. Kitts Marine Works on a complete overhaul that included replanking and renovating her interior. They sail PPALU in the Caribbean.

JOANNE ROBERSON



DIANE BEDELL

Jim Flood saw his first 14′ Glass Slipper skiff at a Coconut Grove Boat Show in the 1970s. He couldn't afford one then, but years later found a neglected skiff in a Fort Lauderdale boatyard. Jim bought her and then made a few changes, including flaring her bow, widening her transom, building a new cuddy cabin, and adding a steering station. Jim and DUCHESS cruise on Florida's coast.

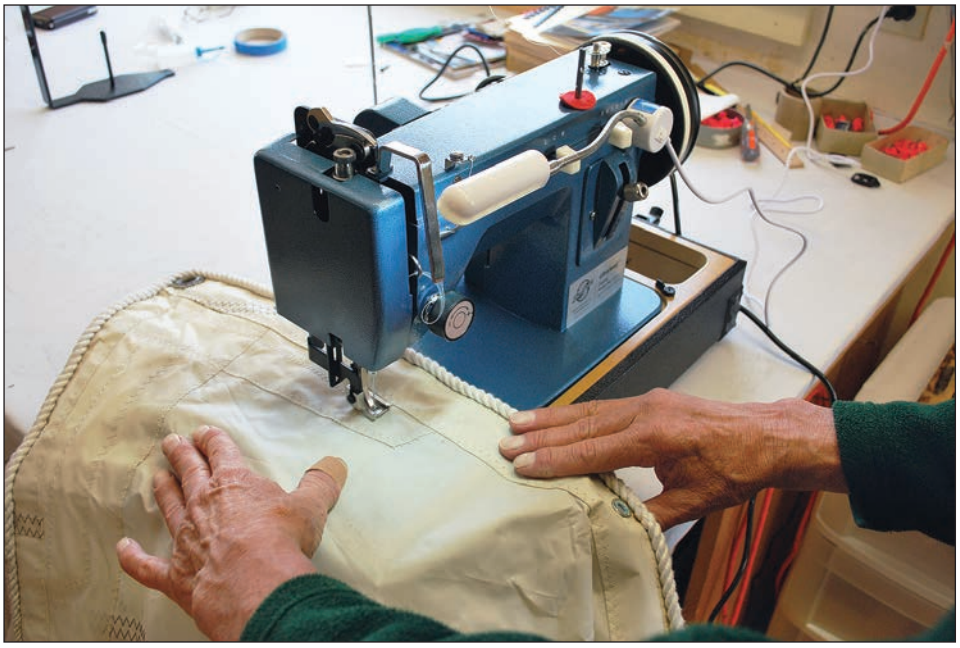
WoodenBoat
REVIEW
PRODUCTS • BOOKS • VIDEOS • STUFF

The Sailrite LSZ-1 Plus Ultrafeed Sewing Machine

Reviewed by Robin Lincoln

A sewing machine is a practical tool. Sooner or later, every sailor must sew something or have something sewn for them—whether it be a new sail, an emergency repair, or an awning, sailcover, or sailbag.

The Sailrite LSZ-1 Plus Ultrafeed is a lightweight sewing machine with some big-machine capabilities. It sews both straight and zigzag stitches, making it versatile for canvaswork and serious sailmaking and repair. It features a "walking foot," which feeds the top material through the machine at the same rate as the bottom material, thus eliminating unevenness, puckering, and skipped stitches. There is an optional powerful hand crank, which allows for sewing onboard (or elsewhere) without AC power. The user can easily switch back and forth between the hand crank and electric power, so the hand crank also gives precise slow-speed control, if that's needed.



PHOTOGRAPHS BY MATHEW P. MURPHY

At just 48 lbs, the machine is quite portable, an advantage both onboard and at home if the machine is to be stored when not in use. It is quick and simple to put away and get out and start sewing again. One drawback to any portable machine is that, in order to keep the weight and size down, the throat must be rather shallow. On this machine the throat is a little over 7″. You'd have a tough time reaching the middle of a 400–500-sq-ft mainsail to repair a seam without some careful maneuvering of the cloth through the throat. It could be done, but you might need a second pair of hands.

But that's a small compromise for a machine that's heavy-duty, reliable, durable, and portable. All the components that go into this machine are high-quality and rugged. The housing and all the inner parts are metal.

A stitch sample from the Sailrite LSZ-1. The machine is rugged enough to sew through eight layers of Dacron. It will also stitch through webbing, and 10 layers of canvas.

If you compare the inner working parts of the Sailrite Ultrafeed machine to others in its niche, the Sailrite's are of superior alloys and better cast. They don't show pitting over time. In fact, after examining other machines, I would say the Sailrite Ultrafeed is the best semi-industrial portable machine available on the market today. If you take care of it, and keep it clean and oiled, it should last a lifetime.

Sailrite is a second-generation family-owned business. It has a consistent and excellent reputation for customer support and high-quality products. When it first opened in 1969, Sailrite was somewhat of a novelty, offering instructions and tools to amateur sailmakers—people who were fascinated, as I was, by the idea of building something beautiful and functional, such as a sail. They were pioneers in the field of do-it-yourself sailmaking, and they geared their products toward a small niche of liveaboard cruising sailors and people wanting to learn how to sew and make their own sails or do their own canvaswork.

Sailmaking was somewhat of a mysterious art in those days. There were some books on the topic, but mostly the art was passed down from master sailmaker to apprentice in the loft. At the time, Sailrite founder James Lowell Grant, who was a master sailmaker, wrote a 10-lesson course of instruction on sailmaking and also one on canvaswork. The company also offered a good sewing machine. This was the beginning of Sailrite.

Over the years, the company has grown into a sophisticated business. They have expanded their market, offering complete kits for making sails. The kits come with all of the panels cut, labeled, and ready to stick together and sew. All the edge material and hardware is included, as are complete instructions for putting the sail together. Although the cost of these kits is a little lower than what you would pay for a new sail from a good sailmaker, I wouldn't suggest taking on such a project to save money; I would do it for the experience and knowledge. For a knowledgeable sailmaker is a valuable resource, and a deeper understanding of your sails will make you a better sailor.

Sailrite's extensive catalog sells all the tools that a do-it-yourself sewer would need to complete a sailmaking or canvas project. They sell cloth and hardware and tools for making awnings, sails, cushions, sailcovers, and bags There are dozens of Sailrite-produced videos on the Internet that cover in great visual detail how to make just about anything that you might ever want to sew. They have expanded their market to home sewers, upholsterers, and awning makers as well. And they have grown and improved continually over the past several decades. The Ultrafeed sewing machine is a great example of their excellence.

Last spring, I had the chance to work with a brand-new Sailrite "LSZ-1 Plus" Ultrafeed, and gave it a full test by making a custom cover for a wherry. The Ultrafeed arrived well packaged with everything needed to assemble it and get started sewing. The printed guidebook is meant for quick reference, and covers tuning, oiling, parts, and part numbers. The Ultrafeed also includes an in-depth instructional DVD, and I highly recommend that you watch it before you take the machine out of the box. If you are too excited to do this, as I was, at least start by watching the sections on assembling the machine and winding the bobbin. Each phase of using the machine is on the DVD—which is over two hours long. That's a serious commitment to setup on Sailrite's part, but I believe all of your questions will be answered. The DVD is so complete that a novice sailmaker could learn to sew from it. After you've watched the DVD, use the machine—a lot. As with any tool, an accumulation of experience will make you comfortable and confident, and able to take on more and more projects.

A patented clutch system transfers 100 percent of the machine's power from the balance wheel to the needle, without slipping.

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The LSZ-1 has the power of an industrial machine. The trade-off for its portablity is the machine's shallow throat, which will make it a challenge to reach the middle of a 500-sq-ft mainsail. It could be done, though—with some help.

What impressed me the most was that once we got the machine assembled, we were immediately ready to start sewing our project. Everything we needed to start sewing—thread, needles, and tools—was in the box. It was a very simple and straightforward setup process. Throughout the project, the machine gave me no trouble at all. The foot pedal allowed smooth speed control, the timing was perfect, and the stitches were even. There were no surprises and no disappointments.

We used Sunbrella cloth, No. 69 Dacron thread, and a No. 18 needle. The Sailrite machines will take No. 138 thread and smaller (No. 92, No. 69, No. 46) and use No. 22 needles and smaller (No. 20, No. 18, No. 16, No. 14). The stitch width and length range is 6 mm. The machine has aggressive feed dogs and powerful transfer of power from the balance wheel to the needle bar, which is why the Ultrafeed can sew through eight layers of Sunbrella or 6-oz Dacron without strain. It also can sew through two layers of cotton duck, and would be fine for lighter duty.

The Ultrafeed LSZ-1 may be a bit more expensive than other machines in its niche, but the things that set it apart are its durability and excellent product support—not to mention the instructions. Sailrite listens to their customers and consistently makes improvements. The machines they sell today are of better quality than those sold 30 years ago—which seems to be the opposite of the saying, "They don't make them like they used to." From what I can tell, Sailrite has worked hard to improve their machines, rather than cheapen them.

No tool can do everything. But if I were in the market for a portable semi-industrial machine to do canvas or sail work, I would seriously consider buying this machine.

Robin Lincoln is an occasional contributor to WoodenBoat *and was, for many years, proprietor of Center Harbor Sails in Brooklin, Maine.*

The Sailrite LSZ-1 retails for $899. For more information, contact Sailrite Enterprises, 2390 E. 100 South, Columbia City, IN 46725; 800–348–2769; sailrite@sailrite.com, www.sailrite.com.

GUY LAUTARD

Kai Scissors

Reviewed by Guy Lautard

A few years ago, I came across a pair of scissors for sale. They were not just any old pair of scissors: They were 17″ long and about 120 years old. They had a little surface rust on them, but were in perfect working condition. However, I felt the asking price of $300 was way too steep. I wanted them, and wracked my brain for weeks trying to justify their purchase, but with no luck.

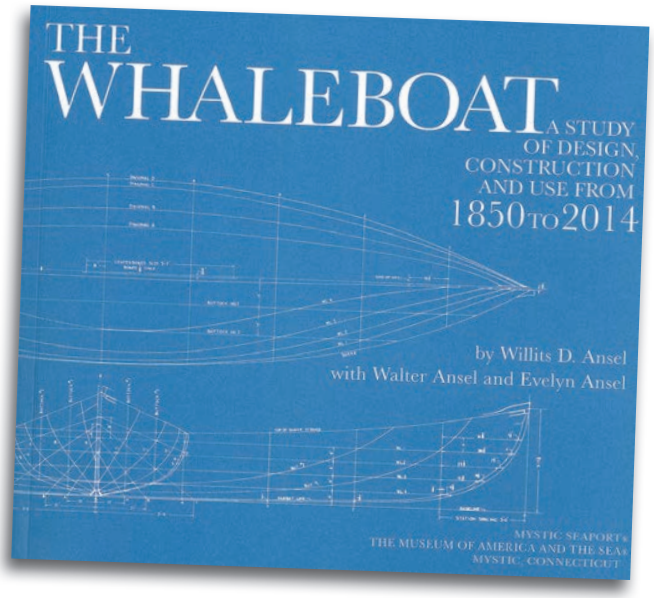
But after that episode, I began noticing scissors. One day I was in a sewing store with my wife, and there on the counter was a pretty decent-looking pair of scissors. I picked them up, and opened and closed them once. They were manufactured by a Japanese company called Kai, and it was immediately obvious they were of high quality. A while later, I bought a 10″-long pair of Kai scissors, at a cost of about $70. (Kai makes 11″ and 12″ ones, too.)

Scissors made by Wiss and Fiskars seem to be industry standard in most sail lofts, and with good reason. But I've learned that many scissors aficionados consider Kai to be the best scissors made today. The cutting edges on mine (Model 7250) are 3¾″ long. The handle areas are encased in a black rubber material, and are comfortable in the hand. I cut a strip off a piece of once-washed blue denim cloth at least as heavy as you'd find in a serious pair of jeans, folded the strip in half three times (eight layers), and then cut right through the pile virtually effortlessly. That's right: eight layers of denim in one easy cut. So I rearranged the layers, and cut through the pile again—this time 16 layers. This took a little effort, but still very little, and there was no munch-munch-munching of the scissors to get through it all.

I have an old pair of Wiss No. 27 scissors, of a similar size to my Kai scissors. They are good, and are not dull, but they will not cut through eight layers of denim fabric in one cut. They would get through it, but only by the munch-munch-munch method, and it would definitely *not* be effortless. Kai simply makes a great pair of scissors.

Guy Lautard is an occasional contributor.

For more details, visit www.kaiscissors.com; 800–481–4943.



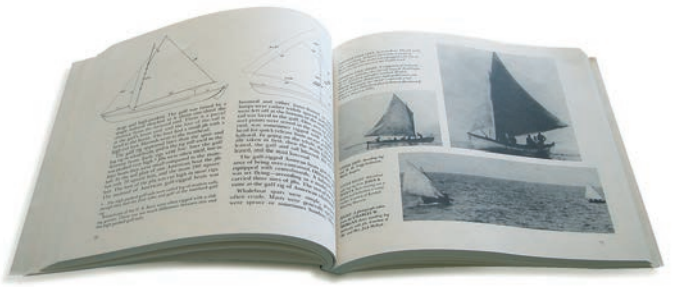
The Whaleboat:
A Study of Design, Construction, and Use from 1850 to 2014

The Whaleboat: A Study of Design, Construction, and Use from 1850 to 2014, Third Edition, by Willits D. Ansel, with Walter Ansel and Evelyn Ansel, Mystic Seaport, 75 Greenmanville Ave., Mystic, CT 06355. 178 pp., paperback, $24.95.

Reviewed by Tom Jackson

The books on my sagging shelves at home are all like old friends to me, and just taking one down refreshes the acquaintance. With a turn of the page, everything comes back. I experience the same effect when a reissue of a book arrives on my desk—in this case, the third edition of *The Whaleboat: A Study of Design, Construction, and Use from 1850 to 2014.*

The book first came out in 1978, at a time when many changes were afoot at the Mystic Seaport Museum. Author Willits Ansel was then becoming a new kind of employee, what Maynard Bray calls a "scholar-ship wright" in his new foreword for the third edition. Bray hired Ansel for the Henry B. duPont Preservation Shipyard at the museum, but Bray himself came from the same mold—founding director of the shipyard, long the technical editor of *WoodenBoat*, a lifetime collector and matchmaker for all kinds of classic wooden boats, and most recently a co-founder of the Off Center Harbor video website. It was Bray who enabled the independent-minded Ansel's foray into whaleboat research.



I can't remember when I first saw *The Whaleboat*, with its horizontal format, a simple paperback with an understated blue cover design that allowed whaleboat hull lines to stand as artwork. It was soon after publication, I'm sure, but I know that as a then-recent college graduate I let years elapse before buying my own copy. I came to know Willits by working alongside him during the construction of a whaleboat at Mystic Seaport in 2002 (which I wrote about in WB No. 171). I got to know his son, Walter, somewhat earlier, along with Walter's daughter, Evelyn, a young teenager at the time. Willits worked 30 years in the Seaport shipyard. Walter, a frequent contributor to *WoodenBoat* and teacher at WoodenBoat School, is now a senior shipwright there. After graduating from Brown University a few years ago, Evelyn among other things has worked on restoring Mystic Seaport's 1841 whaleship CHARLES W. MORGAN alongside her father (see WB No. 226) and as a researcher at the VASA Museum in Sweden (see Currents, WB No. 238).

The new edition of *The Whaleboat* reflects this extraordinary three-generation lineage. Walter has contributed an informative chapter on construction details gleaned from the 2002 project (supplemented by a video documentary that is sold separately). Evelyn contributed a chapter about the extraordinary 2012–13 effort by nine different institutions (see Currents, WB No. 226) to build ten new whaleboats in cooperation with Mystic Seaport to help outfit the MORGAN as part of its just-completed restoration. During the summer of 2014, those whaleboats accompanied the ship on its "38th Voyage," leaving Mystic for the first time since 1941 to sail to historic whaling entrepots of New England.

Other than the additional chapters and updated front matter, the new edition hasn't changed a whit since the second edition of 1983. That is a testament to how thoroughly Willits did his work to begin with. The second edition was itself little changed from the first, substituting a photograph or two and most notably adding a tenth historic boat to the plans appendix. The book emphasizes and thoroughly documents the American whaleboat type, which reached a perfection of form and function while being built by the thousands for what became a global industry dominated by the United States. The book supplements the story with modern detail drawings and archival illustrations and photos used to excellent effect.

Building whaleboats for hard use—aside from being

highly entertaining for Mystic Seaport visitors—shed new light on the much-admired type. For example, an offhand remark stated that a whaleboat at full speed could come to a dead stop within its own length. Such a claim aroused Willits's innate suspicions. "This was tried and, to our surprise, found possible by a crew at Mystic Seaport," he wrote. Other experiments extended to sailing, peaking oars, fast tows emulating Nantucket sleighrides, and striking and restepping the mast under way, among many others. To test another suspicion, Willits weighed pieces of equipment from the museum collections one by one to try to get an accurate total weight: "An equipped boat, therefore, weighed about 2,000 pounds without its crew. This is heavier than the earlier claims, but is still very light for a twenty-eight foot boat." The simplicity he found in whaleboats and other workboats influenced Willits's own boatbuilding style and still does today.

A real strength of the book comes, now as always, in its format. A long, slender boat seems to cry out for a horizontal layout. The boat-by-boat appendix has fold-out pages to display hull lines for the 10 recorded versions. These are well sized and well detailed drawings, as are the accompanying sail plans. I've lost myself in them for many an hour.

Although this story is told primarily from the American perspective, Willits's first chapter, unchanged since the original edition, includes a review of historical whaleboat development. Early lines drawings, from Fredrik Henrik af Chapman, David Steel, and Henry Hall, are shown. It was probably beyond the scope of this republication, but I have to say that one change I would have argued for—or maybe fought for—would have come in this chapter. The year of the original publication, 1978, happens also to be the year that Canadian archaeologists discovered important Basque whalers wrecked in 1565 in Red Bay, Labrador. One of the excavated whaleboats, reassembled nearly intact for exhibit on land, should have a place in these pages. For openers, it is a double-ender remarkably similar in concept to the American type. Enticingly, this boat's upper two courses of planking are lapstrake while the rest of the hull is carvel-planked, a configuration very similar to the famous boats James Beetle built in New Bedford about 300 years later. Beetle's boats were much lighter, using steam-bent frames and the additional innovation of batten-seam lower hull planking. The British and Dutch inherited much of their early whaling expertise from the Basques, and the influence may well have

carried over to the American industry, a prospect that merits serious mention, if not a much deeper exploration.

As traditional wooden boat building declines in favor of cold-molding and the like, Mystic Seaport has long understood its role in preserving not only boats but also the skills demanded to conserve, replicate, and understand them. It is a worthy goal. Willits long ago added his skills to that effort but also saw the importance of getting it all down in print. This volume will always remain an essential contribution, an old friend.

Tom Jackson is WoodenBoat*'s senior editor.*

BOOKS RECEIVED

* ***The Annapolis Book of Seamanship: The Definitive Guide to the Art and Science of Sailing***, by John Rousmaniere. Fourth edition, published by Simon & Schuster, Inc., Rockefeller Center, 1230 Avenue of the Americas, New York, NY 10020; www.simonandschuster.com. 404 pp., hardcover, $49.99. ISBN: 978–1–4516–5019–8. *Covering practically every aspect of sailing, this fourth edition is an extensive revision of the 1999 third edition, updating many topics and adding new ones.*

The Trumbly Show: A Narrative of Training Under Legendary Boatbuilder Joe Trumbly, by Matthew H. Dick. A Kindle book, available at www.amazon.com. 128 pp., e-book, $3.99. ISBN: 978–0–9910356–0–1. *Written by a student of Joe Trumbly, who taught boatbuilding for 24 years at the L.H. Bates Vocational-Technical Institute in Tacoma, Washington.*

The Spirit of Sailing: A Celebration of Sea and Sail, by Michael Kahn. Published by Michael Kahn Books, 506 Wertz Rd., Coatesville, PA 19320; www.michaelkahn.com. 126 pp., hardcover, $30. ISBN: 978–0–615–47137–2. *Stunning black-and-white photographs are accompanied by quotations from a variety of sailors and literary sources in this large-format volume.*

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Authentic Shanties **and** ***Don't Forget Your Old Shipmates***, by the Hardtackers. Produced by the Hardtackers, www.hardtackers.com. 16 and 21 tracks respectively. CD, $15.00, individual song downloads, $0.99 each, entire CD download, $9.99. *The Hardtackers sing of "all navigable waterways" in voices as rich and diverse as the songs (all a capella, mostly traditional) on their two CDs.*

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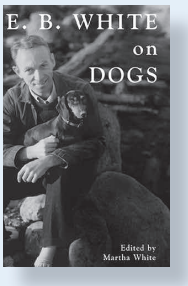

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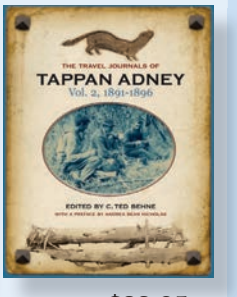

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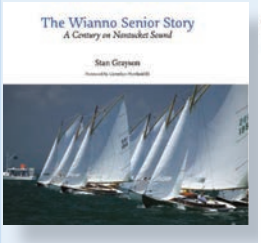

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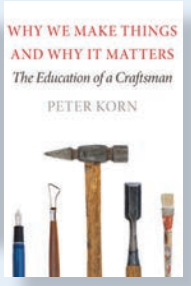

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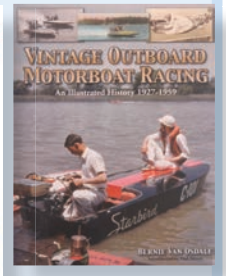

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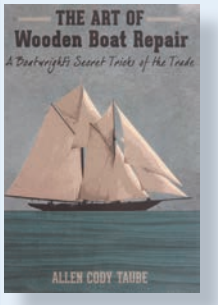

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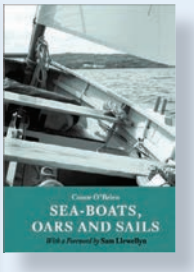

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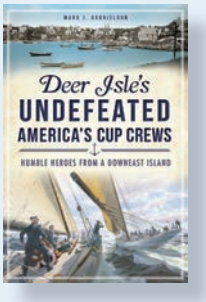

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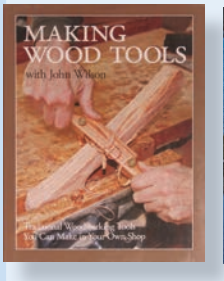

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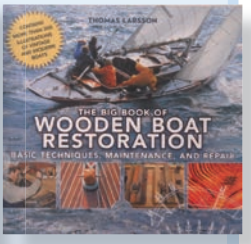

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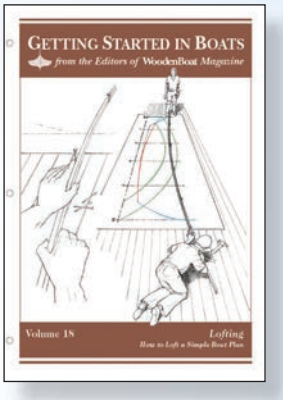

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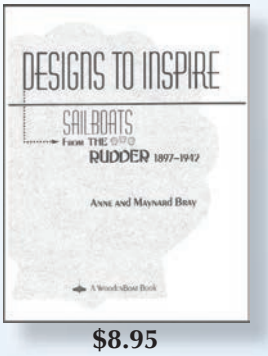

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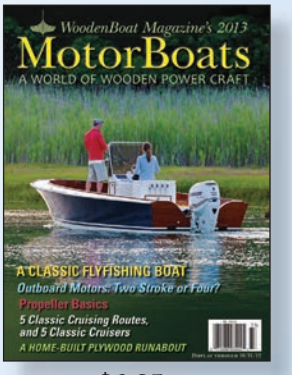

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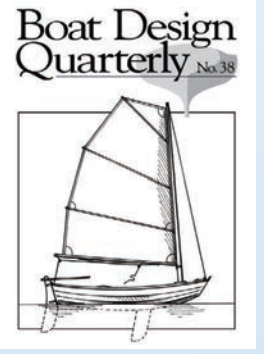

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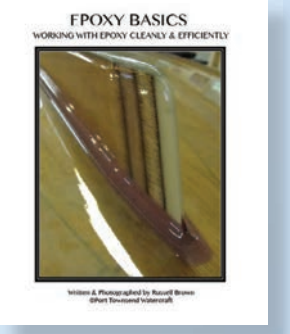

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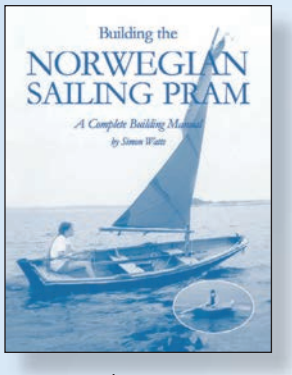

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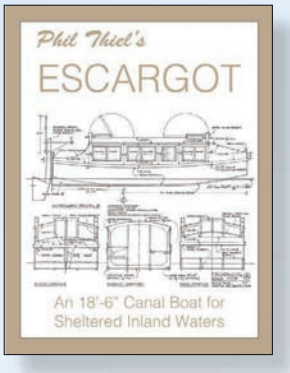

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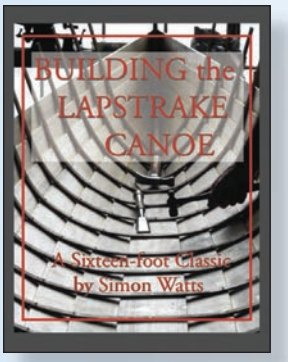

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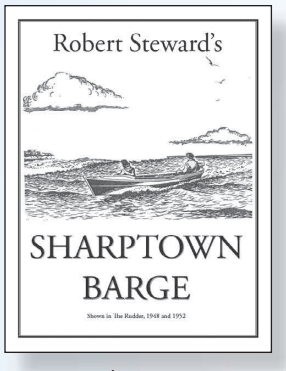

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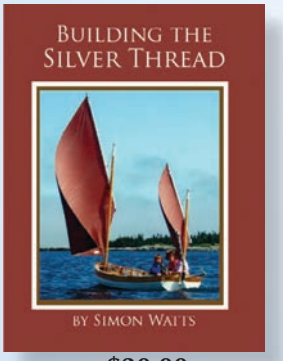

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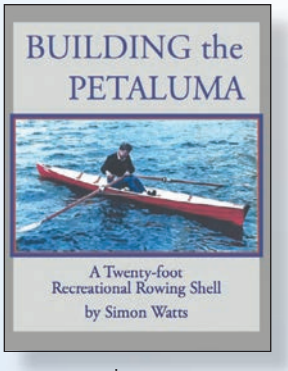

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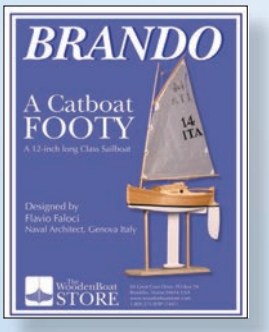

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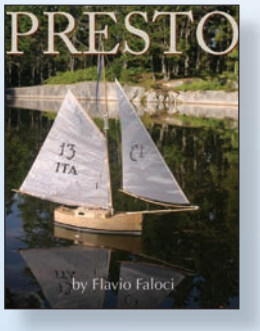

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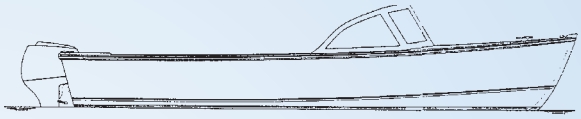

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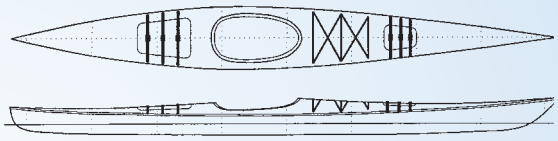

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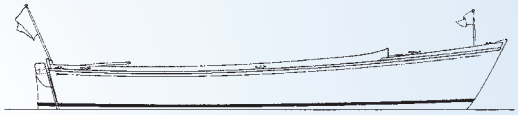

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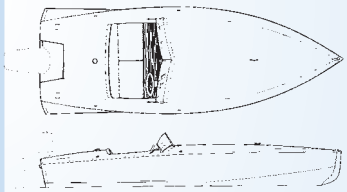

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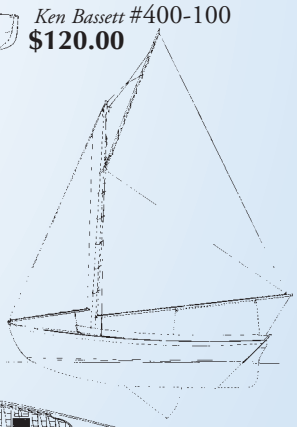

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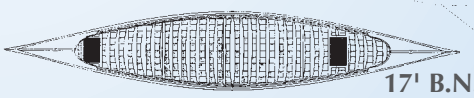

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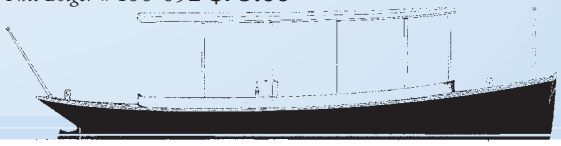

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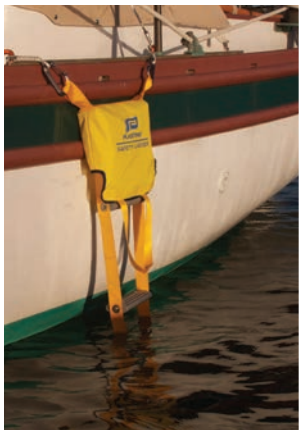

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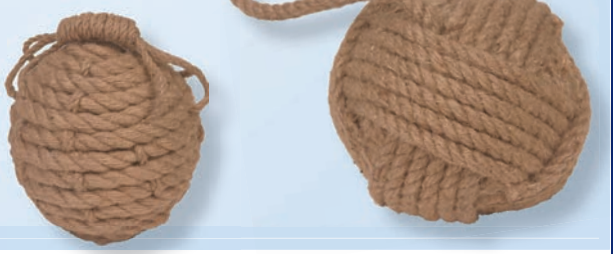

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Gypsy

A trailerable houseboat

Design and commentary by Laurie McGowan and Michael Schacht

Dear Designers,

I've been doing some daydreaming about a small amphibious houseboat—one that is self-powered on the water and trailerable over the road. Basically, I'm thinking of an amphibious travel trailer, but with a measure of grace and more than a modicum of seaworthiness. I'm reminded of a couple of amphibious sailing ideas from about a half century ago: Uffa Fox's Atalanta design, and Cy Hamlin's Amphibi-Con. Both of these were small (about 26′ overall), centerboard-equipped shallow-draft cruising sloops capable of sleeping four friendly people, and capable of being hauled and launched on well-constructed, over-the-road trailers. The greatest challenge that went with amphibious sailing craft lay in raising and lowering the tabernacled mast and securing it safely with the boom for the driving. That may have a lot to do with why neither type ever became a runaway success, but the amphibious idea is perhaps more valuable now than it ever was, given the way we must try to make what we own capable of multiple uses.

I'm unaware of many serious attempts to apply the amphibious principle to the powered houseboat concept, and it seems to me that this is an idea worthy of exploration. But the challenge is to create something that can function well on the road and in the water, both safely and gracefully. We've all seen those boxy travel trailers and those boxy houseboats. They always make us wonder why they have to be so boxy. If it were easy to make them graceful and capacious, designers would have done that long ago. And of course, stability requirements on the water are very different from those on the road, so the challenges are pretty complex. If we like the aesthetics of, say, Airstream trailers for example, it's not necessarily easy to translate those aesthetics to watercraft. On the other hand, Airstream and others have proven that a lot of function can fit into a small amount of space, and they provide a good starting point. On the water side, we must start not from the boxy houseboats we are so accustomed to seeing but from something rooted in maritime traditions; something like the far more graceful and functional narrowboats of Britain and canal boats of France—a seemingly perfect embodiment of form and function in a small space.

Narrowboats and canal boats are designed for sheltered, quiet canals, whereas what I'm looking for is a design that could make 8 knots and stand up to, say, 3–4′ seas on the beam. (Not much fun to imagine in such a craft, but sometimes what we have to put up with to get home—or to the launching ramp.) There are threads here that can begin to be woven into exciting possibilities.

So here are the parameters so far:

1. The hull bottom could be an inverted shallow-V shape, like the old Higgins Sea Sleds, but in any case shaped such that it can be built from planks, sheet plywood, or cold-molded veneer, and sheathed with an owner's choice of material. I imagine 26–28′ overall by a maximum width of 8′, for permit-free trailering.

2. The forward end of the hull must not be barge-like, but should part the water in an efficient manner, perhaps inspired by the bows of the old sailing scows of New Zealand, or even by some of the simpler, more modern metal-panel houseboat hulls.

3. Inboard propulsion should drive through a tunnel-stern configuration so that shallow-water navigation is easy, the craft can beach out at low water with ease, and loading onto the trailer can be relatively simple.

4. The house must be designed and built in a light-but-strong manner, preferably with a bit of an inward slope to the sides, a slightly cambered roof, and an option for the roof to be accessed by ladder and used as an upper deck for sitting out in good weather.

5. There should be short forward and aft house-level decks for entrance and exit, for handling docklines, and for accommodating ground tackle below.

6. There should be a short tabernacled mast for a steadying sail—and perhaps even a small jib.

7. Steering and maneuvering controls could be from inside forward, or—as in narrowboats and certain other canal and river craft—from all the way aft with windshields above the upper deck level.

8. In addition to the "wheelhouse," wherever it may be situated, this houseboat needs sleeping accommodations for four. The interior space needs to be bright and easily ventilated—and yet also made warm and cozy with ease.

9. The interior living-and-dining area could be along the standard houseboat/trailer lines, with galley/kitchenette, head/bathroom with shower, and settee/dinette converting to beds.

10. It needs easily accessible stowage for clothing and gear, and it needs options for entertainment, from recorded music to television to computer and Internet access.

11. It needs provision for both battery power and for shore/campground power.

12. Fuel, water, and waste tankage should be provided in the hull, and the latter equipped for pumpout stations, whether at a marina or a campground, where fresh water can also be supplied.

There may be numerous ways to approach this challenge, and I hope you'll feel free to think way outside the "box." Grace and seaworthiness are not so easily achieved in this dream, but it will be wonderful to see what you come up with.

Jon Wilson
Brooklin, Maine

Dear Jon:
Thank you for your excellent and challenging letter. We scratched our heads a few times on this one. You ask for a type of boat that many have taken a stab at designing, with varying degrees of success.

We started the design exploration with two distinctly different boat types: a Sea Sled, as mentioned in your letter; and a narrowboat, or European canal barge–inspired mobile cottage. The rectangular planform and slab sides of the Sea Sled provides plenty of flexible interior space; however, the final determiner was pace: Sea Sleds are fast planing hulls, while narrowboats are relaxed displacement hulls. The 8-knot cruising speed specification favored the narrowboat approach.

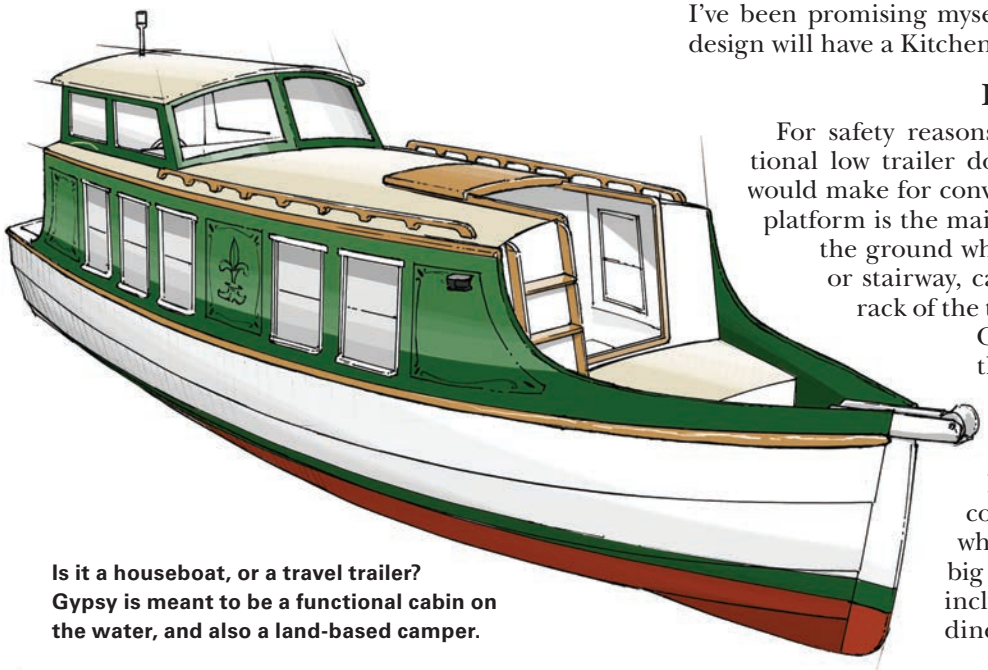
To achieve trailerability and standing headroom, the boat must have shallow draft and the cabin sole should be right in the bottom of the boat. This implies a wide bottom and shallow hull, without a deep keel or exterior ballast for stability. To accommodate the requested sailing rig, we decided on a motorsailing setup where the lugsail is an assist to the engine. It is said that "gentlemen never sail to windward," and at least on Gypsy, that remains an accurate truism.

We eventually settled on a 27′ length × 8.3′ beam × 1.4′ draft hull, while keeping in mind seaworthiness, trailering, ease of construction, pleasant motion underway and at anchor, simplicity, and a unique look. We chose plywood as the construction material, and three strakes for the topsides—to break up the flatness in a stylish way, and a box keel that blends into a tunnel aft. Fans of John Atkin and Phil Bolger will recognize the last two features from some of their excellent boats: the tunnel of Atkin's Sea Bright Skiffs (popularized by Dave Gerr today, see Summer Kyle, profiled in WB No. 121) and the box keel of Bolger's many small outboard-powered cruisers. The tunnel allows for a big, slow-turning propeller, which is more efficient at the 8 knots specified.

In Gypsy, the cabin sole may be just above the keel flat, and as in the Sea Bright Skiffs the after end of the lower part of the hull tapers nicely, allowing the engine to be both aft and low, and with clean water arriving at the propeller.

Surprisingly, even with the large tunnel, the "curve of areas" (the curve that graphs the immersed sectional area from stem to stern) is a nice and fair shape. We thought it would have a chunk out of it due to the tunnel, but it doesn't. When cruising, the stern will lower from the weight of the tunnel filling, but not by much. Dave Gerr asserts that this type of tunnel makes the boat more stable, and owners of his designs say that the motion underway is excellent. In use, displacement speeds are higher than expected with a very low bow wave, trough, and stern wave. These boats regularly exceed the usual speed/length ratio formula for displacement boats, even up to 1.75 times the theoretical limit.

Because of the box keel, Gypsy's hull will counteract leeway better than the Sea Bright Skiffs, which should help with docking and while motorsailing. The modern Sea Bright Skiffs have bow thrusters to help with docking, but we're going with a 100-year-old rudder design that allows for excellent control at all times, the Kitchen Rudder (see "Gertrude and Her Kitchen Rudder," WB No. 185). In Gypsy, instead of having a worm gear at the top of the rudderpost that activates the two halves of the rudder, we've chosen a small hydraulic ram with levers at the rudderhead, and a shift lever at the helm that would allow for instant control. With the boat moving forward, push down to fully close the rudder (full astern); pull up to open it (full ahead); adjust to positions in between for neutral, ahead, or astern slow, or for crabbing sideways. Gerr is also a fan of these rudders and though he doesn't have one on a boat, he writes in his *Boat Mechanical Systems Handbook*, "For years I've been promising myself that the next motor cruiser I design will have a Kitchen Rudder."



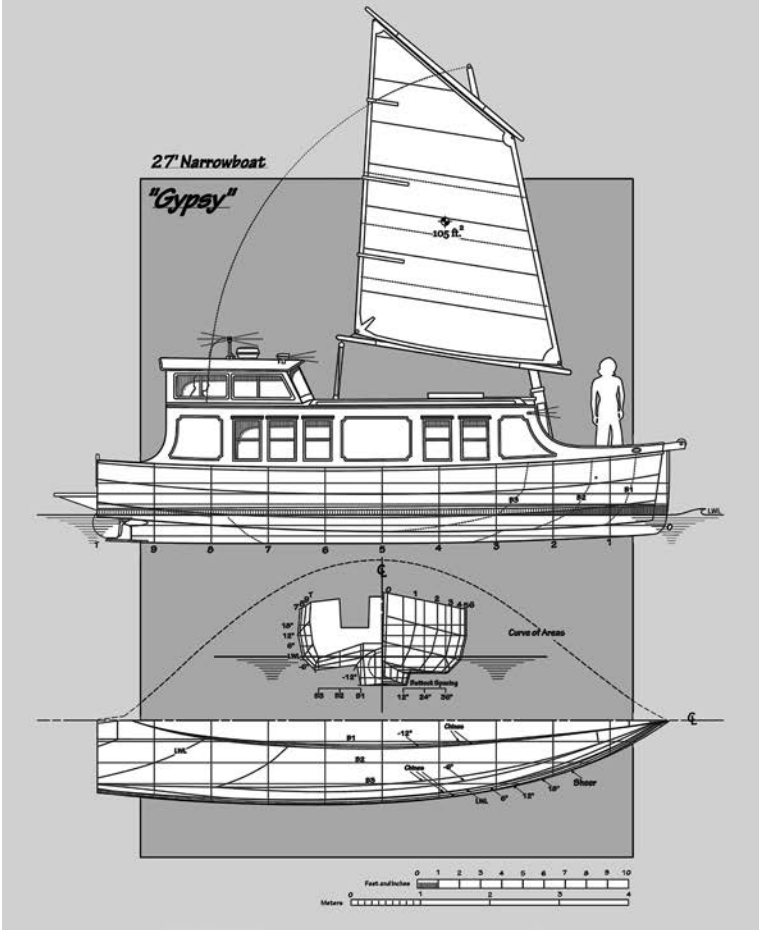
Is it a houseboat, or a travel trailer? Gypsy is meant to be a functional cabin on the water, and also a land-based camper.

Layout

For safety reasons we decided against the traditional low trailer door on the side, even though it would make for convenient ground access. The swim platform is the main access to the boat and is 4′ off the ground when trailered, so a folding ladder or stairway, carried on the trailer or the roof rack of the tow vehicle, is a needed accessory. Once aboard, we step through the transom door into a small aft cockpit, and then a wheelhouse with helm to starboard and navigator to port, and an excellent 360-degree view. Down the companionway is the main saloon, which is a large space with plenty of big windows for light and air. Seating includes a settee to port and raised dinette to starboard; both convert to

Gypsy Particulars

LOD	27′1¼″ (8.26m)
LOA	29′10″ (9.1m)
LWL	26′11″ (8.21m)
Beam	8′2¼″ (2.5m)
Draft	16⅜″ (0.41m)
Displacement (full load)	6,600 lbs (2.99t)
D/L	151
Trailering weight (est.)	5,500 lbs (2.49t)
Power	27-hp diesel or 9 kW 48-volt electric
Sail area	105 sq ft



Gypsy's shallow draft and tunnel stern will allow her to explore thin water. Although meant for calm water, she'll handle a modest chop if the need arises.

berths at night. A small galley with pantry, and a hanging locker forward complete the saloon.

In order to increase storage, we have taken a page from commercial airliners and included overhead storage bins running the length of the cabin, port and starboard.

Continuing forward is the walk-through head compartment. This arrangement is fairly common on sailboats but not so with powerboats. It solves the problem of the narrow keel walkway, but at the cost of some convenience if desiring to go from the forward stateroom to the saloon while the head is occupied.

Forward of the head, the floor remains flat and the headroom full to a double cabin with a large V-berth, with steps in the middle to the companionway to the foredeck. A swinging door (with deadlight) opens out to port, and a sliding hatch allows for good access and excellent light and air in fair weather. The V-berth converts to a double by swinging the steps up and out of the way, and employing a filler cushion in the center.

The foredeck has a nice seating area and is a comfortable place for handling ground tackle, tying up, or raising or lowering the sail or tabernacled mast. A ladder to starboard takes you up to the deckhouse roof to enjoy the view in pleasant weather.

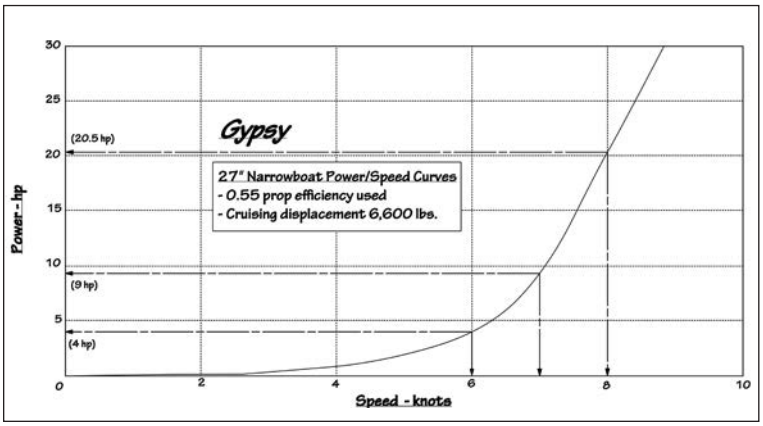
Gypsy is decidedly canal boat in character, with the arched coach roof, windows, and full-beam deckhouse of the type. She also calls to mind a Gypsy Vardo, at least from a distance (if you squint a bit). The cabinside panels could be adorned with painted-on or carved ivy and roses, Celtic knotwork, or mermaids. The forward wall of the deckhouse has a moderate slant aft for better aerodynamics in trailer mode.

Construction

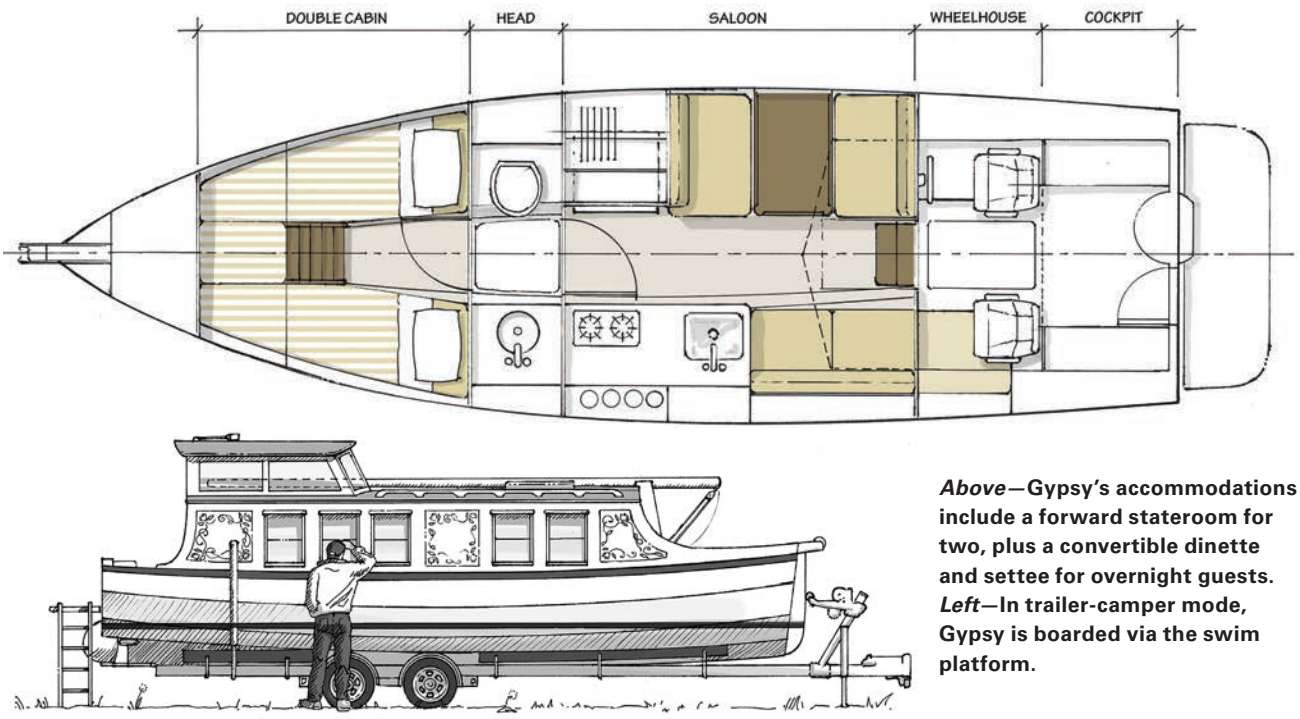
Gypsy's construction is standard plywood/epoxy/'glass, and full-sized plank and frame patterns could be provided, as well as CNC machine cutting files. Some of the plywood scantlings are:

Keel bottom: double ¾″ (19mm) with heavy 'glass sheathing

Keel uprights: ¾″ + ½″(13mm)



As this speed/power curve shows, Gypsy requires only a 4-hp motor to reach six knots. Driving the hull at eight knots requires a considerable increase of power.



***Above*—Gypsy's accommodations include a forward stateroom for two, plus a convertible dinette and settee for overnight guests. *Left*—In trailer-camper mode, Gypsy is boarded via the swim platform.**

Tunnel: ¾″
Topsides and cabinsides: ⅝″ (16mm)
Decks: ½″

There are 5, ½″ plywood main bulkheads; furniture is ½″, with ¼″ wherever possible (where hull strength isn't compromised); and frame spacing is 38″ (965mm).

Rig

As mentioned, Gypsy's standing lugsail is designed as an assist to the motor—for a boost while powering and to create a steadying effect against roll, but it may also be considered a "get-home" option, as long as you don't need to sail to windward. Gypsy won't sail well upwind with her lack of underwater foils, and the tunnel will create drag when unfilled by the prop. As with all motorsailers, use of the sail will usually allow the engine to be run at lower, and quieter, rpms, and can boost fuel efficiency numbers significantly.

The mast and tabernacle are offset to port to be clear of the forward companionway, to allow clear viewing from the helm, and to rest beside the wheelhouse when lowered. "But the sail is off-center!" you say, "Won't that affect performance?" No problem at all...just ask a proa sailor. Proper stability analysis would have to be completed for the final design, which might find that some water ballast would need to be added for safety." (Please note that all of the designs presented in Sketchbook are well-developed concepts, but not finished designs.)

For lightness and ease of handling, the spars will all be hollow spruce, and the tabernacle of aluminum channel. Raising and lowering the unstayed mast will be a snap as a quickly attached block-and-tackle from the heel of the mast to the base of the tabernacle will control the process very well. The sail may be quickly and easily reefed, and for safety the mainsheet will need to lead to near the helm.

The windows will have to be robust—perhaps more than shown—to handle a possible knockdown.

Performance

As the speed/power curve shows, Gypsy doesn't require a lot of power to cruise at 6 knots, but to cruise at a steady 8 knots in smooth water she'll need a 27- to 30-hp diesel engine. The Kitchen Rudder doesn't require a reversing gear, though it's likely easier to buy the engine with one than without. Since the sail does add speed in most instances, a 20-hp engine or even a 9kW electric setup becomes a real possibility, and the latter could have charging solar panels on the roof as well as a small wind generator. Imagine the pleasant, silent exploring that could be done with this setup! A small backup generator would be needed to keep the batteries topped-up for a day of windless motoring. This could be located under one of the cockpit seats.

Trailering

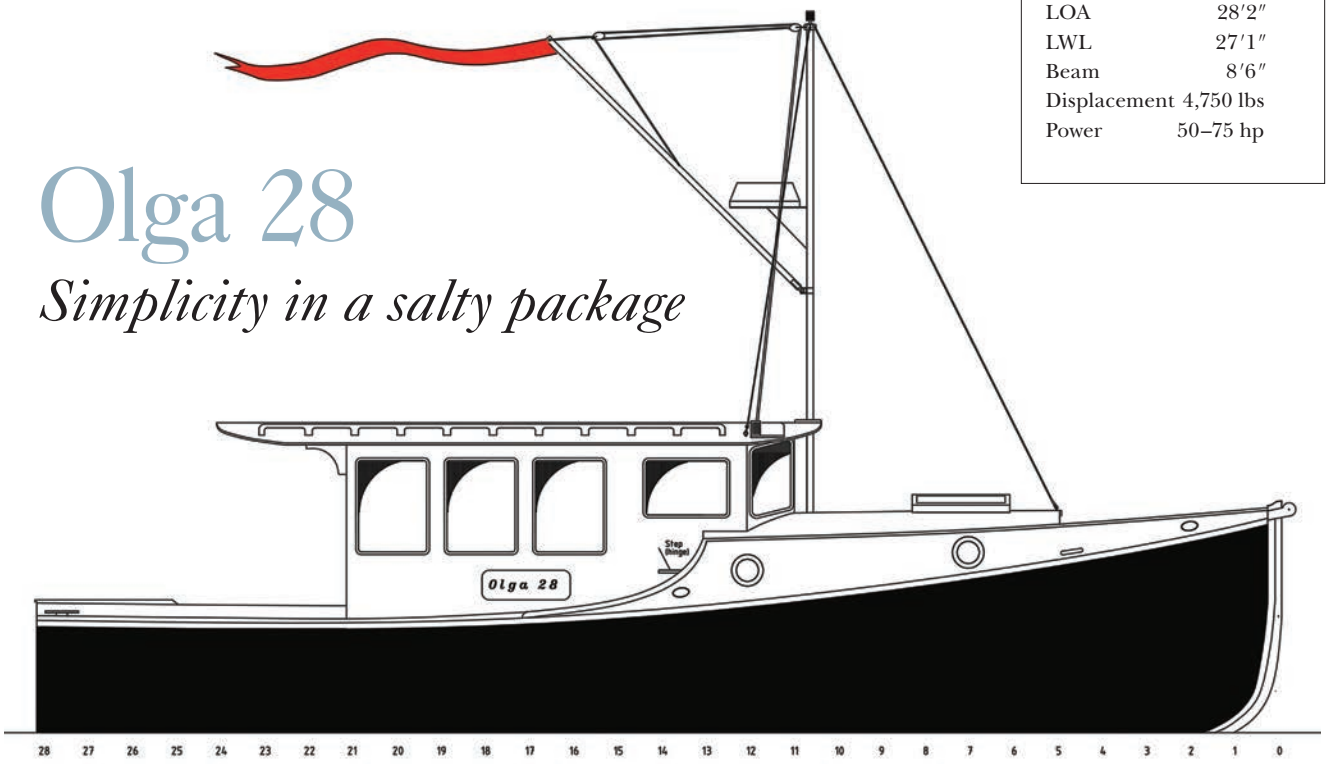
Gypsy has a trailering height of 10′9″ (3.28m) and a trailering weight of about 5,500 lbs (2.49t) with empty tanks and half boat and crew supplies. Launching from a twin-axle trailer will be very simple, and the shallow draft means she may be beached to load crew.

We think Gypsy would make a fine wooden boat festival circuit vehicle. Tow her cross-country, and visit shows from Maine to Washington state. She would be the talk of any trailer campsite where she was parked, and provide a comfortable and relaxed style of cruising by water.

Particulars	
LOA	28′2″
LWL	27′1″
Beam	8′6″
Displacement	4,750 lbs
Power	50–75 hp

Olga 28

Simplicity in a salty package



Design by Mark Smaalders

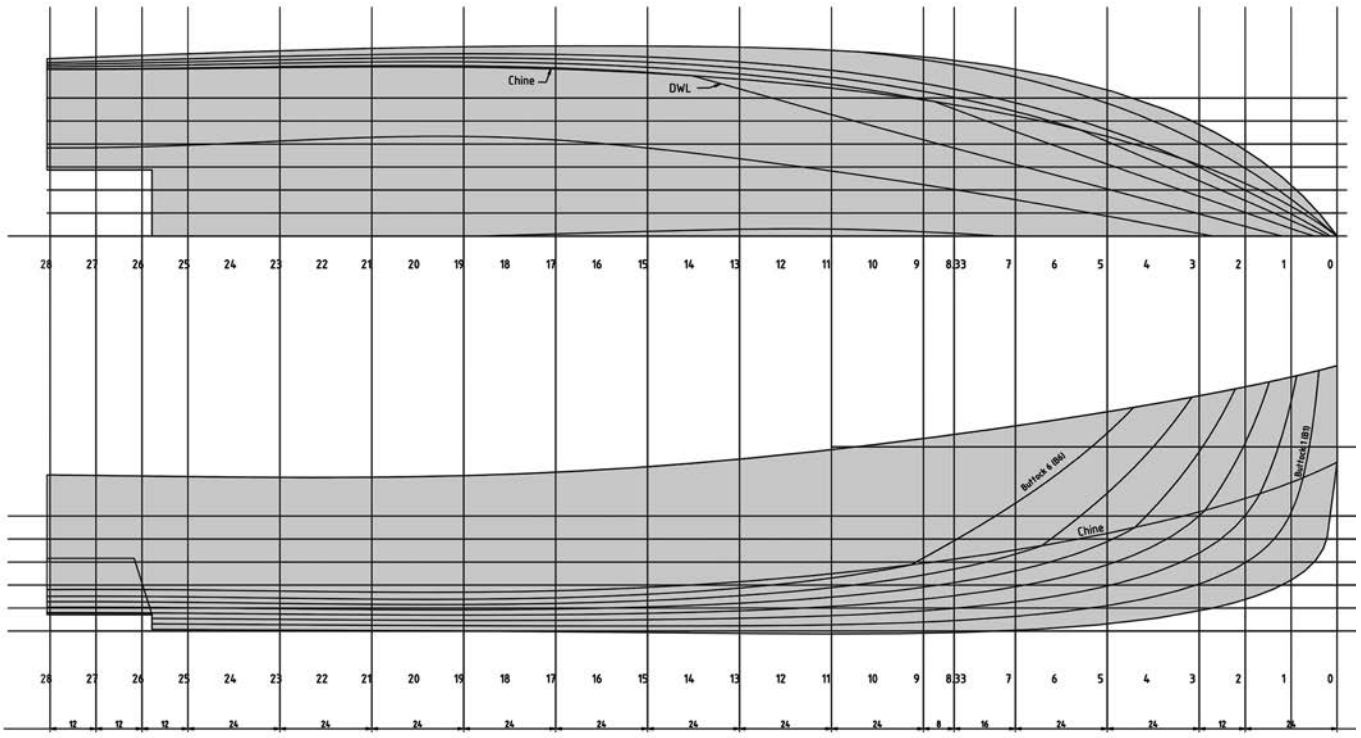
Commentary by Robert W. Stephens

The world of amateur boatbuilding has a legacy of simple, no-nonsense powerboats intended to dispense with frills and fussy details and to get an ambitious builder on the water with a minimum investment of both time and money. When your objective is not to craft the most gorgeous piece of joinerwork ever, nor to bask in the reflected glory of a sophisticated sheerline or a meticulously shaped cambered transom, but to get yourself and your family out fishing or cruising, designers have been drafting boats just for you for nearly a century, and publishing the plans in boating magazines.

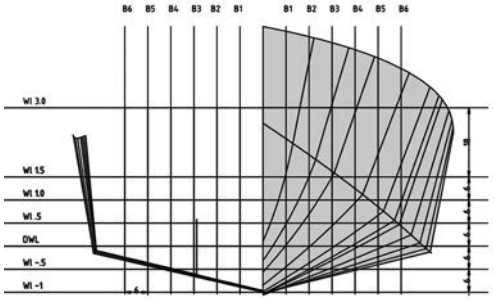
When I first set eyes on Mark Smaalders's Olga 28 power cruiser, I immediately thought of several boats drawn by the Atkin family. Over more than three decades, father William and son John presented readers of the classic magazines *The Rudder* and *Motor Boating* with several examples of straightforward powerboats that would provide simple and cost-effective pathways for hundreds of families in mid-20th-century America to introduce themselves to the joys of boating. Never ones to waste time, material, or money, the Atkins drew boats that made the best use of simple, easily available building stock and power plants, and that went together in the fastest time possible within the constraints of delivering safe, seaworthy, and useful watercraft. And oh, yes, if they didn't proudly display the beautiful details and complexity of the professionally built yachts of their time, they must at least exude the confident air of a salty boat of solid workboat origins with a serious, traditional sheerline and attractive massing of superstructure—in short, if not knockouts, they must look good.

Smaalders's Olga 28 is heir to this legacy. Smaalders has studied the same mission—to provide simple, low-cost boating to a cost-sensitive public—and has evolved a solution with many similarities and a few distinct differences.

The biggest difference is the materials and building methods. When Billy Atkin began designing, plywood was a new material, hardly to be trusted, and epoxy and fiberglass weren't even gleams in the chemists' eyes. Easily available materials meant good-quality oak and cedar milled to your specifications from the local lumberyard. Atkin worked hard to reduce the amount of complex boatbuilding skill required for an amateur to assemble one of his boats, but access to reliable building materials was not the issue it is for amateurs today.



Drawn by Mark Smaalders, the Olga 28 combines straightforward style with simple construction and versatility. The shallow V-bottom and light overall weight offer efficient cruising with either a low-power outboard or an inboard engine.

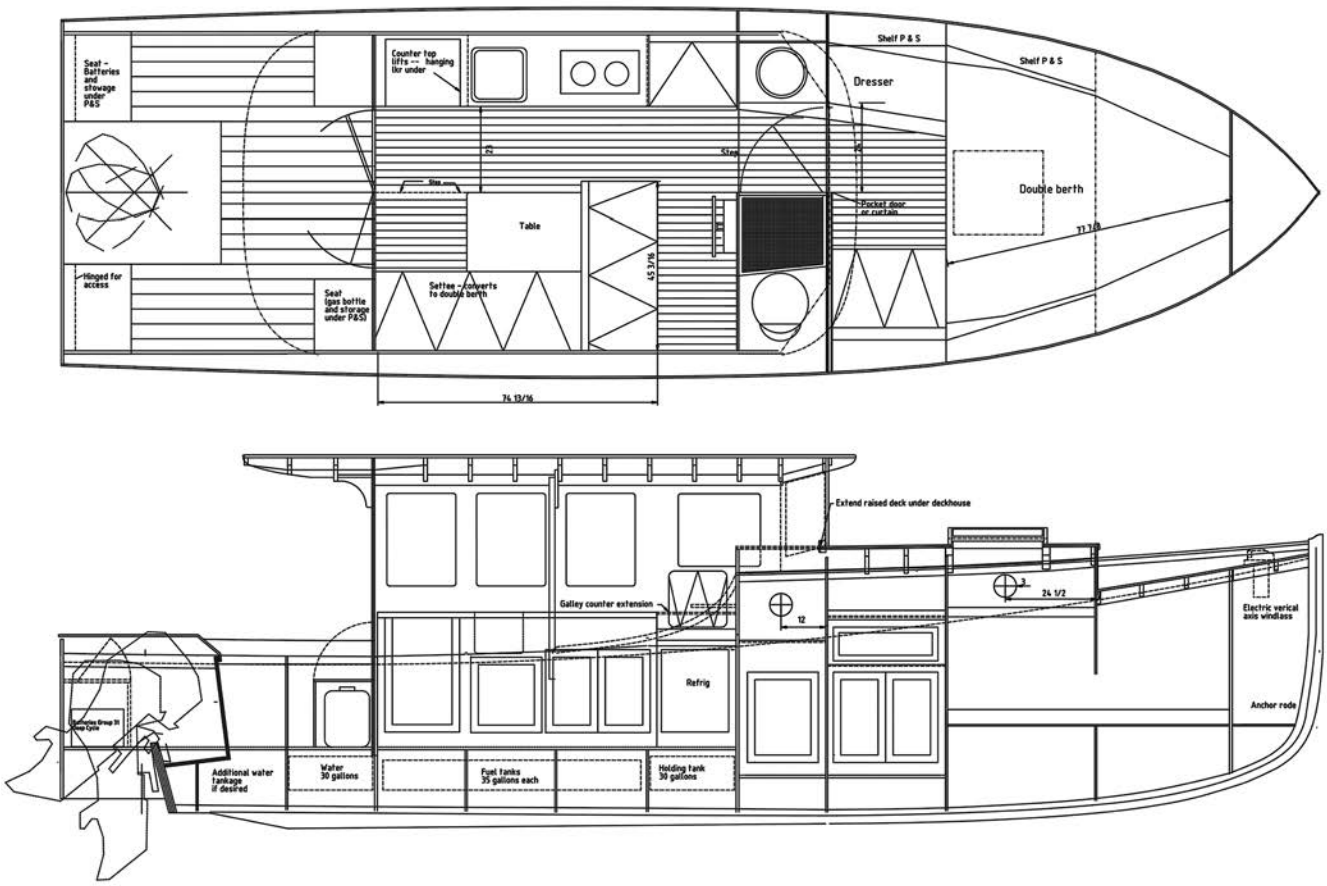


Consequently, building a boat to an Atkin design could give you the best of both worlds—a cheap, able boat *and* the delightful sensory experience of planing long, curly shavings off the edge of a cedar bottom plank.

The world gives with one hand and takes away with the other. Olga 28 goes together from standardized sheets of high-quality marine plywood—light, strong, dimensionally stable, and just a phone call or mouse-click away. Rugged, forgiving epoxy glue and fiberglass tape and sheathing form sturdy, reliable bonds and prevent damaging water ingress. The end product is lighter and more durable by far than anything we could have built in our backyards in the 1930s or 1960s, and so performs better, runs faster with smaller fuel consumption, and will last longer with less maintenance than Billy Atkin could have imagined. But we've exchanged that delightful process of hand-fitting fragrant woods together for the much less aesthetically pleasing process of out, smearing, wiping up, sanding... repeat as necessary. Best to keep our eye on the prize—that maiden sail.

That unpleasant process aside, Smaalders's construction methodology results in a boat that goes together easily and speedily. He has defined bulkheads and temporary molds that eliminate traditional lofting—just lay out the shapes on plywood stock, cut to shape, and set up. Most bulkheads are ½″ (12mm) plywood, with a few of the more heavily loaded elements of ¾″ (18mm) ply. The framed setup allows good control over the shape of the planking—simply use the frame structure on a strongback to form the mandrel for shaping and fastening the planking. His method relies on "liquid joinery" techniques—most structural attachments are formed by fiberglass tape over epoxy fillets. He offers two methods of making the crucial chine joint—shape a conventional laminated chine log and bevel it to accept the bottom and topside planking, or eliminate that wooden frame member and fillet and tape the joint. The options will play to the skill-sets of individual builders, the conventional chine offering more support for creating a fair chine line, at the expense of more time spent fussing with challenging joinery.

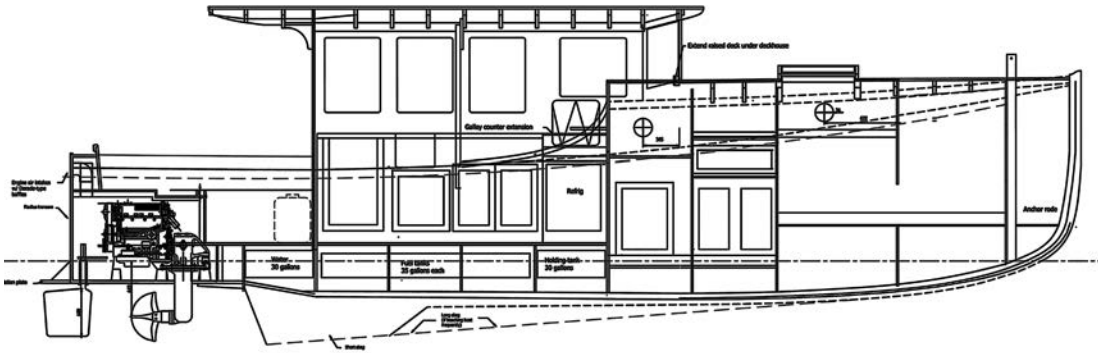
But the building of this boat, while satisfying, is really a means to an end, so let's look at what living



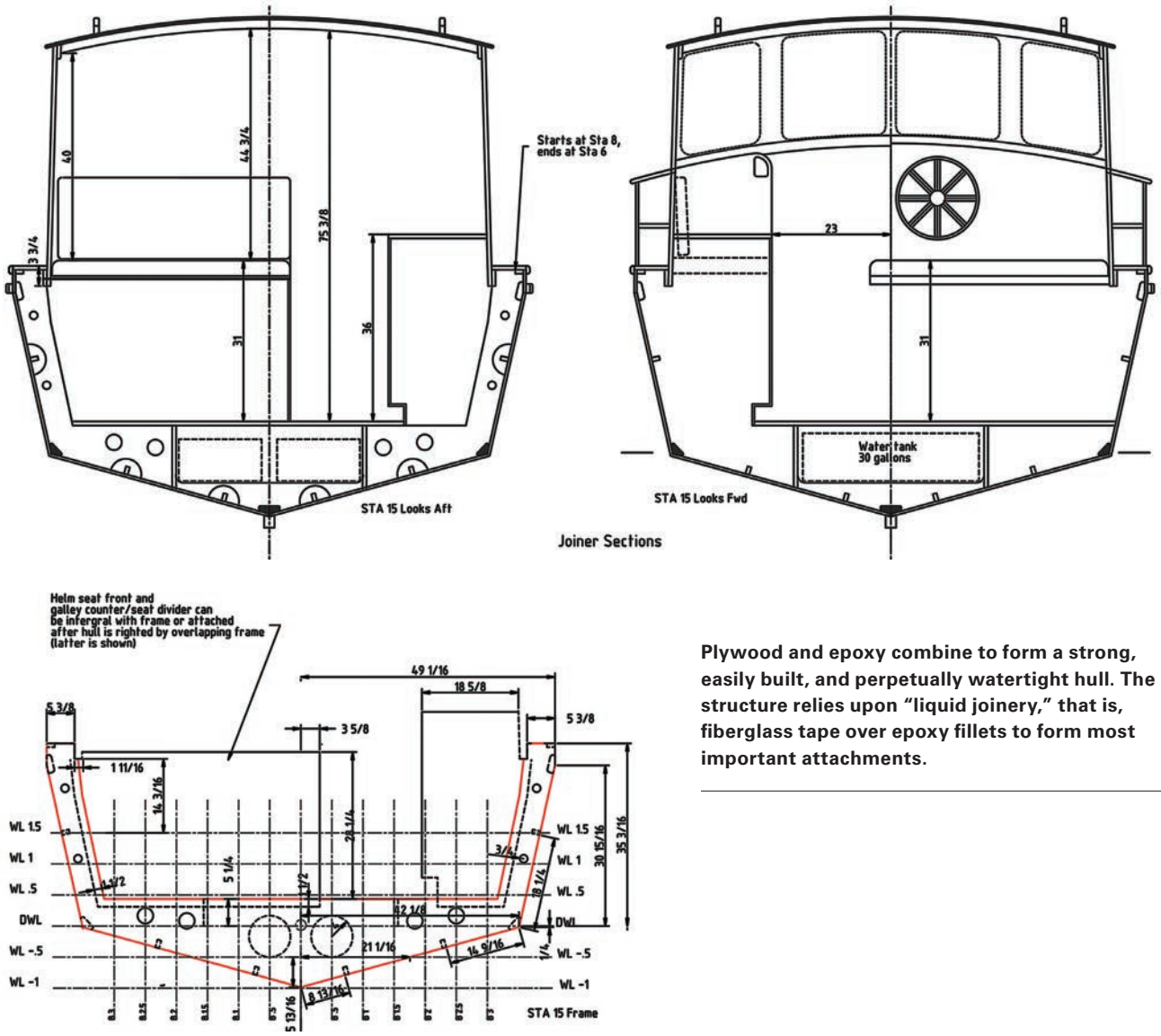
Well-designed accommodations provide a good all-around view from the main cabin. An unusually spacious head spans the full breadth of the hull. The forward cabin contains a V-berth and a seat that might be used for changing clothing or as a quiet nook for reading.

aboard the finished boat will be like. The salty sheer and raised deck provide a spacious down-below living area enclosing a forward stateroom featuring V-berth, dresser, and a welcome seat for pulling on your trousers. A truly useful head spans the full beam, cleverly allowing a good roomy shower, and a sink that can be used while the head compartment is otherwise occupied. Headroom below the raised deck is about 5′0″, more than adequate for moving around in a crouched position.

A single step up separates the belowdecks space from the pilothouse. A double helm seat to starboard converts to be part of the L-shaped settee when at anchor—a settee big enough to convert to a double bed. A roomy galley occupies the port side, affording the cook excellent views of the scenery sliding by. The settee is raised one step to bring diners' eyes to a good height for 360-degree views. It's a direct step outside to the cozy but



Smaalders's profile drawing shows an optional inboard diesel-engine installation. Note the deeper skeg, which will help protect the propeller and rudder.



Plywood and epoxy combine to form a strong, easily built, and perpetually watertight hull. The structure relies upon "liquid joinery," that is, fiberglass tape over epoxy fillets to form most important attachments.

adequate cockpit, largely taken up with an engine box over the quiet, efficient, four-stroke outboard motor (Smaalders has drawn a diesel version as well, but the outboard's simplicity and silence will be the bigger seller).

Narrow side decks allow you to sidle to the raised foredeck (be sure you install those grabrails solidly!), where a recessed well-deck keeps anchor gear and bottom mud contained. Smaalders shows a salty mast placed just forward of the pilothouse windshield; this can be sized for light duty like flag etiquette and antenna mounting, or beefed up to allow hoisting of a sizable dinghy or other water toys (a pair of kayaks would extend cruising range into some very thin water).

The hull's a standard shallow-V bottom and her light weight will offer efficient cruising with small power. Smaalders recommends 50–75 hp, and tells us that 65 hp should produce 12 knots tops. He says she'll handle more power for a higher speed, but the hull's shallow deadrise means that driving her faster than 12 knots will only be practical in absolutely smooth conditions without applying lots of pounding stress to the boat's light structure—and to the crew's state of mind!

We build boats for personal reasons. Some do it for the building experience, some for the aesthetic enjoyment of a gorgeous work of art when completed, and some for the delight of using the boat. If your prime focus is in creating a cost-effective way to get afloat and cruising, the Olga 28 will do you proud.

Bob Stephens is a partner at Stephens Waring Yacht Design, in Belfast, Maine.

Plans from Mark Smaalders, P.O. Box 1364, Eastsound, WA 98245; 360–376–1042; mark@smaalders.net; www.smaalders.net/yacht_design.

Wood ID, Cementing Bilges, and Gluing Paddles

by Richard Jagels

Reader queries are beginning to stack up, so here are my responses to three:

Wood Identification

During the decades of writing this column, readers have occasionally asked about identifying some piece of wood. In many cases, this inquiry was predicated on pure curiosity—maybe a chunk from a yard tree or a piece of driftwood. Definitive identification of wood involves making thin sections from three planes (cross, radial, tangential) and examining these through a microscope. If the wood is native to North America, I am reasonably certain that I will be able to provide an answer. However, this would involve some costs, so for the curiosity seeker I recommend Bruce Hoadley's book *Identifying Wood*, published by The Taunton Press. (The WoodenBoat Store, www.woodenboatstore.com, carries Hoadley's other book, *Understanding Wood*).

The identification book is relatively easy to use, only requiring the use of a hand lens. But this limits the range of woods that can be positively identified. If the wood in question could come from anywhere in the world, the chances of a correct identification becomes much slimmer. (Hoadley's book covers only North American woods and a few of the more common tropical woods.)

In some cases, the request to identify wood has a serious purpose. Recently, a reader wanted to ascertain whether a classic speedboat he owned had been built in the Northeast or Northwest. When I indicated the size samples I would need (preferably a 1″ cube), he decided that he couldn't sacrifice samples even approaching that size.

In retrospect, I'm not sure that my analysis would have helped anyway. If the boat contains Sitka spruce or Douglas-fir, it could have been built on either coast. From a boat photo he sent, I could see that the decks and possibly the planking were a tropical hardwood, probably mahogany or Spanish cedar, so identification of these parts would be unrevealing. What about frames and other interior parts?

More than three decades ago, I briefly held the position of wood analyst at Winterthur Museum in Delaware. My main task was to determine if 17th- and 18th-century pieces of furniture were built in Europe or America. If the latter were true, the value would be considerably higher. Usually, my first approach was to take samples from hidden glue blocks. If these were yellow poplar (*Liriodendron tulipifera*), the piece was confirmed as American in origin since this wood is not native in Europe. Sometimes we would get expertly done fakes, but the faker might carelessly use something like California redwood for backing boards—and then the jig was up.

So, for antique furniture, wood identification can be very useful. For 20th- and 21st-century boats, the issue is more muddled. Watercraft travel around the world and frequently need repairs, plus trees are now planted as exotics throughout the world. In these situations, wood identification to determine origin is likely to be less revealing than for pre-1850s furniture.

Bilge Concrete

WoodenBoat contributor Bruce Halabisky states in a letter that "There is a long history among working sailing vessels to fill their bilges with concrete. This serves two purposes: First, it is a cheap and secure way of adding weight to boats that may have no external ballast; second, it raises the level of the bilge enough to clear the frames and floor timbers, thus obviating the need for limber holes in an area where maximum strength is wanted. What is interesting to me as a boatbuilder is how well wood encased in concrete maintains its integrity. On some of the 60-year-old boats that I've helped restore, the concrete-covered wood is the soundest area of the boat." Bruce then asks: "Is there a reason that concrete and wood seem to live so happily together? Thick pieces of solid wood covered in other materials such as fiberglass or epoxy resin seem doomed to rot while concrete, although not very 'yachty,' helps the wood to endure."

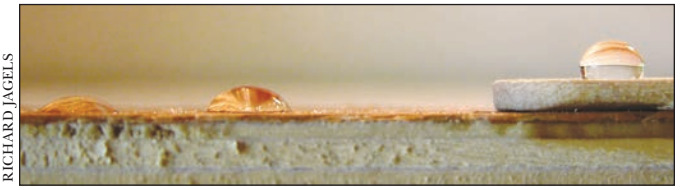
In my column in WB No. 232 (May/June 2013) I discussed brown rot, which is the most prevalent rot in boats. The decay fungi that cause brown rot thrive in quite acidic conditions and reach maximum growth when the pH of wood is between 3.0 and 6.0. I discussed some ways of raising the pH of wood to higher levels—especially the use of borates.

Concrete is made of Portland cement mixed with sand and other coarse materials. Portland cement consists primarily of calcium silicates, with a small component of calcium sulfate and magnesium oxide. Depending on the exact proportion of these components, Portland has a pH between 11.8 and 12.1. This is exceedingly alkaline. (The pH scale runs from 1 to 14, with 7.0 being neutral.) When wet concrete is poured into the bilge, water containing dissolved cement components penetrates the ship timbers as the concrete cures. This significantly raises the pH of the wood. Where the wood remains wet, and therefore prone to decay, it will retain a high pH, which repels decay fungi. Since the bilge is below the waterline, decay from the outside of the hull is retarded by lack of oxygen. The concrete may also help to exclude oxygen in the bilge, but so would other coatings, such as epoxy. So I am guessing that the primary antifungal action of concrete ballast is to raise the pH of the wood, making it unpalatable to brown rot fungi.

Streaks in Paddles

Paddle maker Walt Vosicka writes: "I had something very curious happen in laminating paddle blanks. I used very white cedar from a big-box store with white oak from a local mill, through Habitat ReStore. I used Titebond original as glue. It seems that joints between the oak and cedar squeezed out dark brown to black. After shaping and fabricating, it

RICHARD JAGELS



Water droplets placed on a surface prepared for gluing should flatten, like the one at left, within 30 seconds. The rounded droplet on the right indicates a surface that will not produce a strong glue bond.

disappeared. However, when I made my first coat of Cabot Spar Helmsman oil-based varnish, a couple of small black streaks showed up. After sanding, the streaks remain and are deep. In Nebraska, I varnish in a building that is sometimes 30 degrees or below. I bought a lot of oak and cedar at a good price. I fear that bonding them together might cause more reactions and be bad for business. Of course, these marks are in the center of the blade."

Clearly stated on the original Titebond label is the caution: "Not recommended for exterior use or where moisture is likely." Thus, even without the discoloration problem, the glue joints in these paddles would be at risk when the varnish begins to wear and moisture penetrates to the wood surfaces. Varnishing in temperatures close to or below freezing is also not recommended.

What caused the dark brown or black staining of the glue is more of a mystery. Oak contains tannins, and these will react with iron to produce a black solution. This was one of the original recipes for black ink. If the wood surfaces to be glued had residual iron, perhaps in the form of steel wool particles, this might have reacted with the oak tannins when wetted by the glue. But this is just a wild guess. More to the point, I would recommend changing to a different glue that is more water resistant. When finishing the paddles, apply one or two thin coats of shellac to seal the wood before applying varnish—and both steps should be done at temperatures above 50 degrees.

Since oak and cedar are both rated by the *Wood Handbook* as less than ideal woods to bond with adhesives, I would recommend doing some practice glue-ups with small blocks and then applying forces to test the glue bond. If the failure occurs in the wood (most likely the cedar) you can proceed. If the failure is in the glue line, then a different glue or more careful surface preparation will be needed. Another quick test is to put a drop of water on the wood surface after it is prepped for gluing. If the water droplet spreads out within 30 seconds, gluing should proceed without any problem. If the droplet remains oval and does not spread (see photo), the glue joint will be weak.

Dr. Richard Jagels is an emeritus professor of forest biology at the University of Maine, Orono. Please send correspondence to Dr. Jagels by mail to the care of WoodenBoat, *or via e-mail to Assistant Editor Robin Jettinghoff, robin@woodenboat.com.*

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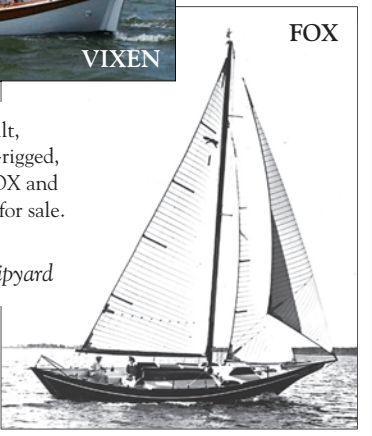

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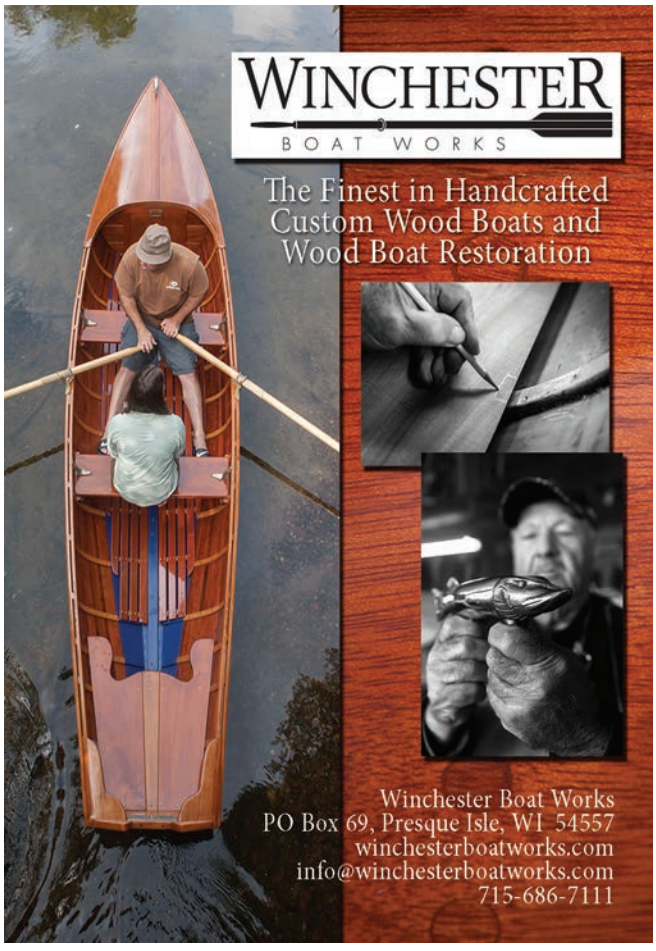

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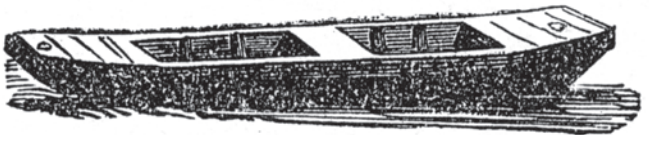

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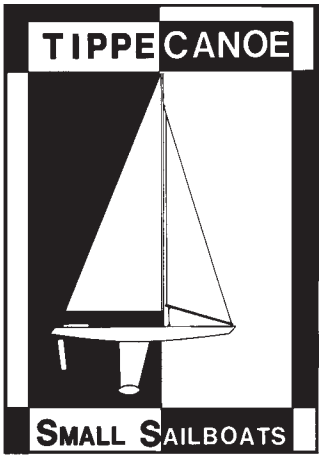

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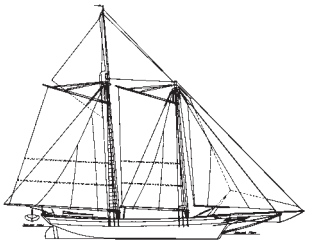

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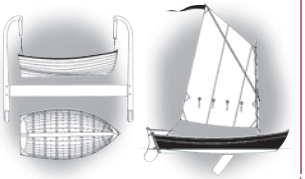

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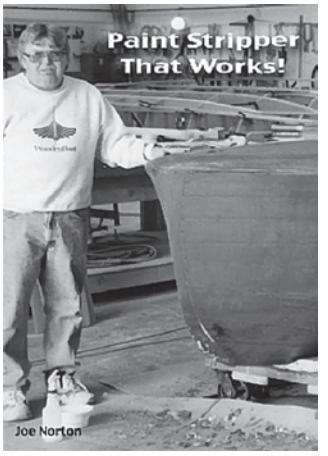

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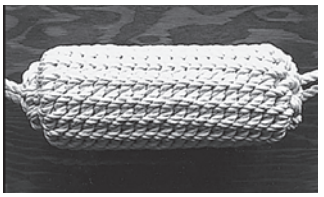

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55′ ALDEN MOTORSAILER, Hodgdon Bros. 1961—Twin Ford Lehmans, 4′10″ draft, 15′ beam. Mahogany on oak, bronze fastened. Well maintained, gorgeous interior. $145,000. lizfalvey@ymail.com.

"VARUNA," A CLASSIC 1951, 37′ Braidwood daysailer, racer, weekender yacht; designed to the Seven-Meter rule. Featured in the movie *The Curious Case of Benjamin Button*, starring Brad Pitt and Cate Blanchett, both of whom have autographed the boat. Classic good looks, and wonderful sailing abilities elicit compliments wherever she goes. Well equipped, and major rebuilding has restored her to very sound condition. Check her out on Yachtworld.com. $34,900. Contact Bill Full, East Coast Yacht Sales, 207–846–4545.

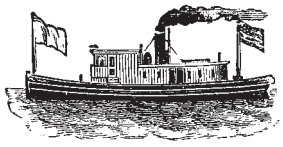
16′ AMESBURY SKIFF FROM Lowell's Boat Shop—Here we have a brand-new, authentic example of the legendary Amesbury skiff—an outboard-powered, transom-sterned dory. This fast, roomy, and stable design was once the workhorse of the Massachusetts North Shore—and it's beautiful, too. It was built at the historic Lowell's Boat Shop for an upcoming how-to-build series to be published in *WoodenBoat*; recently, it was moved to WoodenBoat School for finishwork. Located in Amesbury, MA. $8,900. For details, call or e-mail Graham McKay at Lowell's Boat Shop, 978–834–0050, gmckay@lowellsboatshop.com; or Matt Murphy at WoodenBoat, 207–359–4651, matt@woodenboat.com.

1968 GRAND BANKS 42 CLASSIC—1¼″ mahogany on yacal frames. Twin Lehman 120 diesels give "Granny B" 3–4 gallon-per-hour cruising. 7.4-kW Onan genset. Two double staterooms, each with own head and shower. Dyer sailing dinghy, Zodiac with brand-new 6-hp Suzuki. Ill health forces sale by professional woodworker/owner. Photos and specifications upon request. $45,000. MA, 508–737–0610, woodenrules@gmail.com.

"JOY," 1958 CONSTELLATION—My buddy and I bought this beauty about 10 years ago thinking it would help with the ladies. It did, and now we're both married, and don't have enough time for the old girl. It's time to let her become someone else's dream. Photos and specs here: http://58connie.weebly.com, 423–902–5645.

Boats For Free

18′ PHIL BOLGER, DIABLO GRANDE unfinished—Free to any serious builder willing to complete. Great, stable fishing boat. Plans, directions, and some material included. West Cleveland, OH area. 440–458–5254, schenk2039@windstream.net.



WoodenBoat Classified Order Form

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Issue Date —	Mar/Apr	May/June	July/Aug	Sept/Oct	Nov/Dec	Jan/Feb
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- One boat per ad. Limit: One photo per ad.
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WORD COUNT _____ x $2.75 = $_____

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Signature _____

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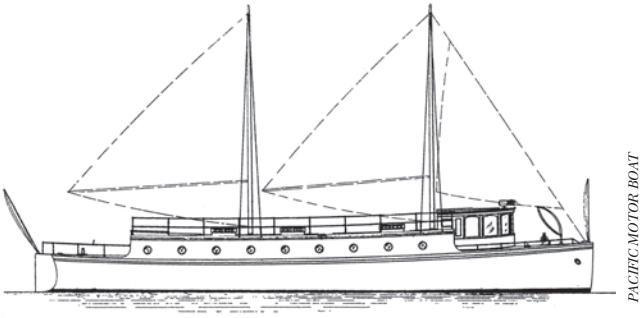
TUSITALA

A different kind of houseboat



PACIFIC MOTOR BOAT

TUSITALA has been regularly maintained and, though she still needs some work, is in the water ready to use now.

TUSITALA Particulars

LOA	58′
Beam	16′
Draft	4′2″
Power	two 54-hp diesels
Doc. No.	205138

Designed by Henry J. Gielow
Built by Anderson Boatyard, Seattle, Washington, 1908

by Maynard Bray

Launched as ELIZABETH for Mr. and Mrs. John J. Sesnon, this yacht changed appearance dramatically in the 1950s when MIT-trained marine engineer Thomas Rowlands enclosed the upper deck to form what amounts to a "second story" containing the galley and dining area, and added a new wheelhouse atop the old one with a flying bridge above that. Either configuration, early-and-slinky or later-and-stately, looks unusual, and to my eye, really very appealing.

This is an exceptionally roomy craft, partly due to her generous beam and original cabin that runs across the entire width of the hull. Small twin engines placed well aft also contribute to interior spaciousness. In lieu of side decks there are narrow catwalks port and starboard, and what was once the cabintop became a second deck after it was enclosed. All in all, this craft received a smart and good-looking modification.

Despite having an East Coast designer (one of the best, in fact), the boat was (and still is) set up with plenty of shelter—perfect for cruising in the Pacific Northwest where it rains often. She came out as a close collaboration between owner Sesnon and designer Henry J. Gielow, intended primarily as a floating home—but one that "does things," according to what Taft Morgan said of her in his 1908 *Pacific Motor Boat* article. Even before he'd been aboard and written about ELIZABETH, as she was then named, her owners had "nosed around the shoals and rocks and tortuous channels from Seattle to central Alaska" during the first season afloat.

COURTESY OF PAMELA OLSON (BOTH)

As a backup to her original pair of 16-hp Frisco gas engines, three sails could be set on two masts. But they're long gone; she's no longer a motorsailer. More reliable diesels now drive the boat. Still extant, however, is a good deal of the lovely raised-panel interior. Photos show staterooms and other spaces to be very well outfitted and nicely cared for. She'd be perfect for elegant living aboard or for long cruises in sheltered waters.

Although I've never laid eyes on this interesting vessel, I understand she's in good condition. The photos I've seen bear this out, particularly ones of the 2012 rebuilding of her stern, a major project that included replacing seven frames, fourteen planks, and the V-shaped transom. The rest of her is structurally solid, according to the owner, but she lists refastening, small cabin leaks, replacement of two deck drains, two 2″ teak toerail repairs, and rebuilding the original wheelhouse as other items needing attention. In her words, "Mostly what she needs is regular maintenance…. My biggest problem with the boat is that I work full-time so I don't have the time to devote to her that I want or she deserves."

From where I sit, this is indeed a deserving vessel.

TUSITALA lies afloat in Poulsbo, Washington. For additional information, or to arrange an inspection, contact owner Pamela Olson at positivelypamela@gmail.com. But before you do this, be sure to look at her exceptionally-well-done video about TUSITALA, www.youtube.com/watch?v=QTFryEiH0z0.

Maynard Bray is WoodenBoat*'s technical editor.*

Send candidates for Save a Classic to Maynard Bray, WoodenBoat, P.O. Box 78, Brooklin, ME 04616.

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