# WoodenBoat

THE MAGAZINE FOR WOODEN BOAT OWNERS, BUILDERS, AND DESIGNERS



The Return of the Long Island Sound Interclubs
Meade Gougeon: Counter-Revolutionary Craftsman
Motorboats of the Future



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# WoodenBoat



## **FEATURES**

## 22 Rebirth of a Westport Pond Boat

An exact copy of a derelict original Tim Sullivan

## **28** Catching Up with Meade Gougeon

The ever-fertile mind of a counter-revolutionary craftsman

Jim Brown



### **38 CAPRICE and GHOST**

The unlikely return of the Sound Interclub class *Matthew P. Murphy* 

• 49 Making Cabin Trim for CAPRICE and GHOST Matthew P. Murphy

#### **52** Motorboats of the Future

Nigel Irens and the fast and frugal power cruiser Nic Compton

## 62 A Strip-Built Baidarka—Part 1

Simple beauty in a complex and highly functional kayak Rob Macks



#### 72 A Dream Fulfilled

Staying on-task for the charter boat DAVID B's conversion *Christine Smith* 



## **80** Sailing Off the Anchor

A matter of careful preparation and planning Bruce Halibisky





### **DEPARTMENTS**

- **7 Editor's Page**To Rebuild a Derelict
- 8 Letters
- **12 Currents** *edited by Tom Jackson*
- **84 Wood Technology**Tracking Legal Timber from the Tropics
  Richard Jagels
- **86 Launchings...and Relaunchings** *Robin Jettinghoff*
- 90 Designs: Sketchbook
  STELLA MARIS: A 42' Shrimp Yacht
  Laurie McGowan and Michael Schacht
- 94 Designs: Review

  Three Pulling Boats: Low cost
  and good fun Mike O'Brien
- 98 The WoodenBoat Review
  - Polish for Brightwork Aaron LeDonne
  - Books Received
- **128 Save a Classic**TENANGO—An Elco Flat-top *Maynard Bray*

## **READER SERVICES**

- 100 How to Reach Us
- **104** Vintage Boats
- 106 Boatbrokers
- 109 Boatbuilders
- 114 Kits and Plans
- 118 Raftings
- 120 Classified
- 127 Index to Advertisers



Cover: On Lake George, New York, the Long Island Sound Interclub sloops CAPRICE (foreground) and GHOST sail in company on an August aft ernoon. The pair were recently restored by Reuben Smith's Tumblehome Boat Shop, sparking a revival of interest in the long-dormant class. Page 38.



Photograph by Matthew P. Murphy

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#### 9'6"Martha's Tender

Joel White

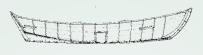
Shapely plywood hull that is pretty easy to build. Featured in WBs 45, 46, 47 #400-025 **\$45.00** 



#### 16<sup>1</sup> San Juan Dory

David Roberts

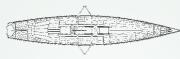
A 15-20hp outboard will push her at 12-18 knots. #400-123 \$75.00



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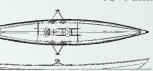


#### 14'10" Outboard Skiff, Sprite

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Traditional lapstrake. Stable, wide enough aft to carry a 6hp outboard. #400-132 **\$60.00** 





Ken Bassett An entry- level sliding-seat pulling boat. Provides

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Phil Thiel's

Phil Thiel's

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**JOLIBOAT** 

An 22'-9" Canal Boat for

Sheltered Inland Waters

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**SHARPTOWN** 

**BARGE** 

PRESTO

Plans in PDF for

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A Catboat FOOTY

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#### **Building the Sea Urchin**

This 10'-2" dinghy includes 26 pages of instructions, and two sheets of plans, by Simon Watts. \$30.00

#### **Building the Lapstrake Canoe**

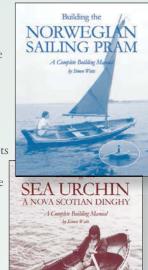
This canoe is 16' long with a 34" beam. Digital file includes two pages of plans, plus 32 pages of instructions, by Simon Watts \$30.00

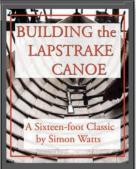
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# Building the Silver Thread



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Designed by Robert Steward, the PDF file includes 7 pages with offsets and details, profile, lines, planking option details (solid lumber and plywood), plus writeups from *The Rudder.* \$30.00

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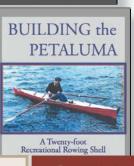
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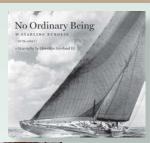
by H. Lewis Jones

Originally published in 1892, it's about adventures and encounters in the Thames Estuary, in late Victorian England. The photos included are from the original book, and the notes tell us they are reproduced at size, the originals taken by an Eclipse folding camera. 144 pp., softcover, #300-836 **\$21.95** 

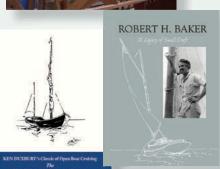
## Gear List of the Golden Moon

by Dick Callahan

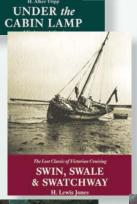
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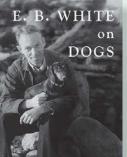












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#### To Rebuild a Derelict

Each morning on my commute to work, I see from my car a derelict old 28' Herreshoff S-class sloop that's slowly going back to the earth of a local boatyard. The boat has sat for years, quietly taunting me with the vision of restoration—a job that would require every single piece of wood in it to be replaced. If I think too long about it, that process typically strikes me as an unreasonable thing to do. But every now and then comes an inspiring story that makes a complete rebuilding seem not only approachable, but logical, too.

For such a project, the old boat serves as a sort of living construction drawing, yielding dimensions, details, and patina that would be difficult to replicate if starting from scratch. Three such stories in this issue are making me slow down each morning to crane my neck for a better look at that S-boat.

The first, and most approachable, is Tim Sullivan's replication of a sweet little Pond Boat from Westport, Massachusetts. Tim, as we learn beginning on page 22, acquired a worn-out and falling-apart original pond boat. It was beyond repair, and he knew that when he acquired it. Careful bracing and measuring yielded the information to build the boat anew. Armed with photographs and measurements of the shored-up old boat, he took the hull apart and used the resulting pieces as patterns. Piece by piece, he created a new boat in place of the original.

And then there's Reuben Smith, John Kelly, and the tale of the Sound Interclubs beginning on page 38—a piece I wrote late last fall after thinking about it for several years. One of the boats in that article, CAPRICE, was my personal boat for years. Her sistership, GHOST, was a fiberglassed, rotted mess in 2001 when I visited her in a Rhode Island boatyard with an eye toward restoration. There was simply nothing left of her then, that I could see, on which to base a restoration, and so I left her where she was. John and Reuben didn't. They peeled her back to good wood and took on a fearless and total rebuilding, the result of which challenges me to tell her apart from her sister, CAPRICE.

And then there's DAVID B. This salmon-cannery tender would likely be gone by now had it not been for the herculean efforts of Christine and Jeffrey Smith. They acquired the boat with an eye toward using her as a charter boat, planning to spend two years refurbishing her. After seven years spent rebuilding the deck, hull, superstructure, and interior, the boat was relaunched with the first charter booking just weeks away. There's one particularly poignant description of the project that Christine shares in her article, and any would-be restorer would do well to keep this in mind: "[S]oon," writes Christine, "I noticed that at the end of the day I was no longer cleaning up old wet rotten wood, but curls of bright freshly planed wood. The change in the boat was more than just how it looked, but also how it smelled. The depressing, musty old smell of rot and fungus was gone, and the new scent of new Douglas-fir and fresh paint brought new life to the boat."

# **LETTERS**

#### Rough Measurement

Dear WoodenBoat,

In the Wood Technology column for July/August 2014, the sentence "It is common practice to dry boards that are 8/4" or more in thickness" combines 8/4 with inch marks. I understand that 8/4 means a rough-surfaced board, while 2" is milled. They both may be exactly the same thickness; however, in use, the 8/4 would yield a thinner piece when milled. For instance, if you need a 1"-thick board in a project, you have to purchase a 5/4 to get it, as the 4/4 will dress to less than 1". Combining 8/4 with inch marks blurs this distinction. I stand ready to be corrected if I'm

> John Wilson Charlotte, Michigan

Dear John,

The quarter system of rough hardwood lumber measurement states the number of quarter inches of thickness in a rough board. In other words, a 5/4 board measures five quarter inches, or 11/4". As you note, someone needing a 1" finished board would specify a 5/4 rough board, to allow for planing. Using inch marks in the quarter system is redundant—to those who know the system.

However, in practice one may encounter inch marks when purchasing rough lumber. We asked our friend Ted Pike, a longtime lumber dealer in Washington State, about his experience with this nomenclature. He tells us that in his 20 years in the business, he's seen inch marks applied to the quarter system more often than not-but that the dimensions are always annotated as "Rough." Dr. Jagels likewise tells us that he's encountered it both ways over the course of his career. The use of inch marks, and the notation "Rough," provides a clearer way of stating the thickness and finish of a board to customers who are not versed in the quarter system, and it avoids misunderstandings. But, as with the nautical lexicon, the quarter system is a more elegant and economical way of stating it-as long as everyone is speaking the same language.

-Eds.

## Hickman, Not Higgins

I'm not a scholar on the subject, but I believe Jon Wilson's specifications for the trailerable houseboat Gypsy in WB No. 240 mistakenly cite Higgins as the creator of the Sea Sled where Hickman is appropriate. There seems to be some later connection with some Higgins bid or non-bid on a Sea Sled contract, but surely when citing Sea Sled as a design, Hickman is the proper name to reference.

Irwin "Sharpshooter" Schuster via e-mail

Jon Wilson replies:

Yes! That's correct! Even though Higgins was later involved with Sea Sleds, it was Albert Hickman who developed the concept, and he's the one I should have cited.

#### **A Clarification**

It was a privilege to read the article about the Northwest School of Wooden Boat Building (NSWBB) written by Lawrence Cheek (WB No. 241). As the brand-new executive director, I want to offer one clarification: It wouldn't be accurate to say that 100 percent of our graduates are employed when they finish school. To be more precise, I'd say that



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for those graduates who seek to become employed, most do find jobs. The school does provide a great program, and it seems that, in our enthusiasm for it, we overstated the job-placement number when speaking with Mr. Cheek.

> Betsy Davis Executive Director, NSWBB Port Hadlock, Washington

#### Remember the Whales

Tom Jackson's well-written and informative article, "Sailing with the CHARLES W. MORGAN," stirs the senses. It's amazing that such a handsome and historic vessel has lasted at all, let alone now sails under her own rig. What struck me as I read the account of its restoration was that this ship was responsible for the slaughter of uncounted whales unceremoniously hoisted up over its rails.

Tim Davis via e-mail

#### Of Church Boats and Plywood

Dear Matt

In WB No. 241, Richard Jagels wrote about the Vendia planks from Rautalampi, Finland. It may interest your American readers to know that a signer of the Declaration of Independence, John Morton, traces his roots to Rautalampi. John Morton's ancestors came to the colony of New Sweden (across the river from New Amsterdam, or New York) in 1650.

Rautalampi (translated as Iron Pond) is still a small, rural village in central Finland where whole villages used to row to church in very large lapstrake row boats with up to 40 men rowing and women and children between the thwarts. When my mother was a child, one of these boats upset in the rapids at Rautalampi with a large loss of life.

Simo Korpisto Coldstream, British Columbia

#### **Rowing Chant**

Editor:

The articles in WB No. 240 on rowing techniques ("The Thames Waterman's Stroke" and "The Geometry of Rowing") took me back to the spring of 1961 when I spent three months teaching recruits rowing at the United States Coast Guard Receiving Center (boot camp) in Cape May, New Jersey. The boats used were wooden U.S. Coast Guard double-ended Monomoy Surf Boats that were 26' long and weighed a little over a ton without crew. The crew consisted of 10 oarsmen sitting tandem in five rows and a coxswain manning a sweep while standing on a small raised

deck in the stern. I stood or sat on this platform to instruct.

The recruits had no problems with knowing when to move the blades of the oars into and out of the water. However, what to do with one's wrists so the blades rotated when necessary was a bit of a mystery. To help with the wrist problem, I came up with a little chant that seemed to help. Starting with the

oar in the water ready to pull, the chant went: "Pull. Roll 'em Down, Lean Forward, Roll 'em Up," with "'em" referring to the rower's wrists. I found that the raising and lowering of the blades happened naturally and I did not have to include those motions in the chant.

John Wetlaufer, Sr. Mechanicsville, Virginia





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ALUMNI WORK WEEK	ALUMNI WORK WEEK	Fundamentals of Boatbuilding with Greg Rössel		Fundamentals of Boatbuilding with Wade Smith		Fundamentals of Boatbuilding with Greg Rössel		Sparmaking with Jeremy Gage	Fundamentals of with	
		Making Friends with Your Marine Diesel Engine with Jon Bardo	Build Your Own Annapolis Wherry with Geoff Kerr	Fine Strip-Planked Boat Construction with Nick Schade	Build Your Own Stitch-and-Glue Kayak with Eric Schade	Build Your Own Baidarka with Mark Kaufman Building Beach Per		ea with Geoff Kerr	Traditional Wood-and- Canvas Canoe Construction with Rollin Thurlow	
		Glued-Lapstrake Plywood Construction with John Brooks	Finishing Out Small Boats with Bill Thomas	Boatbuilder's Hand Tools with Harry Bryan	Lofting with Greg Rössel	Introduction to Boatbuilding with John Karbott	Build Your Own Plank Constructed Pond Yachts with Thom McLaughlin	Marine Painting and Varnishing with Gary Lowell	Introduction to Woodworking with Bill Thomas	
				Blacksmithing for Boatbuilders with Doug Wilson	Elements of Sailing with Jane Ahlfeld and Annie Nixon	Elements of Sailing for Women with Jane Ahlfeld and Annie Nixon	Elements of Sailing with Sue LaVoie and Rich Naple	Vintage Pond Yachts Part II with Thom McLaughlin	Elements of Boat Design with John Brooks	
				Coastwise Navigation with Jane Ahlfeld		Skills of Coastal Seamanship with Andy Oldman	Craft of Sail on TAMMY NORIE with Joel Rowland	Seascape/Landscape in Watercolor with Paul Trowbridge	Bronze Casting for Boatbuilders with Michael Saari	
0								Elements of Sailing with Martin Gardner and Sue LaVoie	Elements of Sailing II with Martin Gardner and Robin Lincoln	
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MAY 4-9	<b>Build Your Own Stitch-and-Glue Kayak</b> With Eric Schade





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AUG	iUST		SEPTEMBER					
26 – 1	2-8	9 – 15	16 – 22	23 – 29	30 – 5	6 – 12	13 – 19	20 – 26
Boatbuilding Warren Barker	Fundamentals of Boatbuilding with Thad Danielson		Traditional Lapstrake Construction with Geoff Burke		Fundamentals of Boatbuilding with Greg Rössel		Fundamentals of Boatbuilding with Wade Smith	
Build Your Lapstrake Dinghy with John Harris	Building the Simmons Sea Skiff with Bob Fuller		Stitch-and-Glue Boatbuilding with John Harris	Build Your Own Northeaster Dory with George Krewson	Introduction to Cold- Molded Construction with Mike Moros	Building a Dory with Graham McKay	Build Your Own Pinguino 145 Kayak with Bill Thomas	Making Friends with Your Marine Diesel Engine with Jon Bardo
Woodcarving with Reed Hayden	Building a Nordic Pram with F. Jay Smith	Introduction to Boatbuilding with John Karbott	Scratch Modelmaking with Steve Rogers	Fine Strip-Planked Boat Construction with Nick Schade	Introduction to Boatbuilding with Bill Thomas	Glued-Lapstrake Plywood Construction with John Brooks	Finishing Out Small Boats with John Brooks	Building Half Models with Eric Dow
Painting the Downeast Coast in Oils with Jerry Rose	Wooden Boat Restoration Methods with Walt Ansel		Coastal Maine in Watercolor with Amy Hosa	Lofting with Greg Rössel	Sailmaking for Pond Yacht Owners with Alan Suydam	Elements of Sailing Radio-Controlled Pond Yachts with John Stoudt	Introduction to Canvas Work with Ann Brayton	
Elements of Sailing with David Bill and Annie Nixon	Rigging with Myles Thurlow	The Art of Woodcuts with Gene Shaw	Sail Cover Construction with Aimee Claybaugh	Elements of Sailing II with Martin Gardner and Robin Lincoln	Open Boat Cruising with Geoff Kerr	Marine Photography with Jon Strout and Jane Peterson		
Paddle, Pedal and Row with Mike O'Brien	Elements of Sailing for Women with Jane Ahlfeld & Gretchen Snyder	Metalworking for the Boatbuilder & Woodworker with Erica Moody	Elements of Sailing with Jane Ahlfeld and Rich Naple	Craft of Sail on MISTY with Queene Foster	Sea Sense Under Sail with Havilah Hawkins	Sea Sense Under Sail with Havilah Hawkins		
Sailing Downeast with Andy Oldman	Sailing the Friendship Sloop with David Bill	Elements of Sailing with Andrew Breece and Rich Naple	The Catboat with Martin Gardner	Elements of Coastal Kayaking with Mike O'Brien	Coastal Cruising Seamanship with Hans Vierthaler	Advanced Coastal Kayaking with Stan Wass		
	Cruising Through the Watches in Tandem with Hans Vierthaler & Queene Foster	Tallship Sailing and Seamanship with Capt. Barry King & Jane Ahlfeld	Coastal Cruising Seamanship with Hans Vierthaler					

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We don't normally build ships for the express purpose of destroying them, but sometimes it works out that way and (almost) everybody is happy. At the Vasa Museum in Stockholm, Sweden, such a project paid off in several different ways during 2014.

The support cradle for the warship VASA, which was launched in 1628 and famously sank less than a mile into her maiden voyage, was designed in the 1960s as a beefed-up version of the sort of keel-blocks-and-poppets system you might use when hauling a boat for bottom painting. In the half-century since her recovery by archaeologists, the ship has sagged and bulged between cradle elements, even though more support was added in the 1990s. We are now engaged in a project, Stötta Vasa ("Supporting Vasa"), to design a completely new cradle. Between 2007 and 2011 we recorded the shape, dimensions, and fastenings of every timber in the ship. These data were used to create a virtual copy of the structure, which can be tested for stress distribution. At the

same time, scientists have been evaluating mechanical properties of timbers, which are no longer "wood" in an engineering sense but a new material called "waterlogged wood treated with polyethylene glycol." It is, for example, much less stiff than fresh oak and cracks across the grain instead of along it.

We also analyzed the connection between deckbeams and the sides of the hull, where the complex joinery follows 17th-century Dutch shipbuilding practices. Wood shrinkage has loosened scarf joints and notches that previously locked the joints against racking and twisting. In the course of the study, the engineering team decided that the only accurate way to evaluate how these joints perform was to build a full-sized section of the ship and test it.

At the same time, the archaeological research team wanted to find out more about VASA's lightweight, 24-pounder, muzzle-loading bronze cannon. This was an innovative weapon at the time of her launching, and we wanted to know more about its range and accuracy but

A topside hull section matching the construction of VASA, a Swedish warship from 1628, helped engineers better understand how to support the enormous artifact—then helped understand the damage that period cannon would have dealt. A replica cannon (inset) was cast in bronze and then bored to exactly match one of VASA's guns.

also how effective it was against ship structure—so we also needed a full-sized section of ship side to use as a target. The two projects joined forces to reproduce a section of the lower gundeck, just above the waterline, about 13' long and 10' high, incorporating one gunport and three deckbeams.

Nearly 20 tons of oak was delivered to the museum in March, already sawn to thickness. Planks in this part of the ship are 4" thick, as is the ceiling, while wales and clamps are up to 8" thick. Frames are sided about 8", molded about 10", and the deckbeams are 16" square. We also needed three hanging knees for the beams and an 8" × 24" waterway timber, which replaces lodging knees in this type of construction. Our staff of five carpenters, led by Monika Ask, spent two months shaping individual pieces, then assembled the structure on a test rig at the Royal Technical College. These pieces all had to be removable so that they could be altered during the test to reflect various degrees of shrinkage and looseness.

A month of testing produced a wealth of data about how these joints function, both when the ship was new and now. Combined with detailed data on wood properties and the ship's structure, an accurate stress model can identify key nodes that require extra support, informing the design of a much more efficient support system that should keep VASA in good shape for several hundred years without obstructing the visitors' view. As our museum director, Magnus Olofsson, likes to say, the new system should be free, invisible, and installed yesterday—and we will see how close we can come to those goals.

At the beginning of October, the section was taken to Bofors Test Center in Karlskoga, to be subjected to a different type of stress. We had successfully cast a replica bronze 24-pounder in November 2013 and spent the spring and summer of 2014 having it bored to the correct diameter (as was done in the 1620s), building a carriage, and loading equipment for it. Tierps Järnbruk, which cast the gun, also cast ammunition, mostly round shot but including some of the stranger types used in this period: chain, spike, and scissor shot. We also made up canister rounds, each loaded with 215 lead musket shot.

We eventually fired 54 rounds. At first, we simply assessed muzzle velocity, range, and accuracy. Then we took aim at the ship side. We set up the structure 40 yards from the gun so that we would not waste ammunition (at over \$100 per round), and we varied the charge between 3 and 6 lbs of black powder to simulate shots from various ranges. The rather surprising result was that it was difficult not to get a ball to go completely through the structure, even when it hit the hull directly on a knee or waterway and had to pass through up to 30" of solid oak. In one case, the ball passed through 18" of oak, flew 500 more yards, hit the ground, skipped up, flew 100 yards farther through the forest, limbed trees as it went, and then bull's-eyed an 18"-diameter pine tree, cutting it in two before continuing on

into the bog beyond. We put 12 rounds into the ship. Although the damage was extensive, it was very localized for each shot, so in many cases repairs would have been relatively easy.

The results of both sets of tests—stress and ballistic—will be published in 2015 in scientific journals and a popular book, and part of the shattered ship side will be on display in the Vasa Museum so that visitors will have a better idea of the destructive power of "primitive" artillery.

Dr. Fred Hocker is Director of Research at The Vasa Museum, Box 27131, SE-102 52 Stockholm, Sweden; +46-8-519-548-00; www.vasamuseet.se.

## Around the yards

Robert Stengl writes from The National World War II Museum in New Orleans, Louisiana, with news of the thorough restoration of PT-305. "Rebuilding this vessel to her 1943 configuration is being accomplished using original Higgins Industries engineering drawings and vintage photographs," writes Stengl, a boatbuilder and logistics engineer on the project. The PT boat, launched in 1943, was one of 199 such boats built by the New Orleans-based Higgins company. Starting in 1944, she served in action in the Mediterranean Sea, destroying 530 tons of enemy shipping during intense nighttime patrols. "In the spring of 2011, PT-305 was moved into the modern John E. Kushner Restoration Pavilion, designed with a glass façade so the public can observe the work in progress," Stengl writes. "Upon her arrival in the pavilion, work began immediately on restoring the basic structures of the 78' hull," including reconstructing a 13' section that was lopped off after she was bought by a Chesapeake Bay oystering

"Moving from stern to stem, all the structural elements of the hull were taken apart and restored or replaced," Stengl writes. "One of the most important goals is to bring the hull back to its original shape and strength. The vessel is double-planked. Bronze screws fasten the planks to frames with two rows of about 39,000 copper rivets set in between the screws. Bulkheads divide the boat into eight watertight

operation after the war.

compartments with longitudinal bulkheads for increased rigidity. Originally, three Packard 4M-2500, V-12 supercharged gasoline engines delivered a total of 4,500 hp to the three shafts that supplied thrust to achieve speeds up to 43 knots. We possess five Packard 4M-2500s of the correct variant for PT-305, which produce a maximum of 1,500 hp each. In addition, we have stocked up on engine parts to support operation of the boat. By the way, all Packard engines were used on PT boats, with no other boat type or weapon system. After the war, they were stored in laid-up or preserved condition. Our engines were overhauled by the Navy in the 1950s. Our volunteer mechanics disassembled, inspected, and reassembled them, and the engines started right up."

Much of the work is being done by 60 volunteers, who have logged a phenomenal number of hours donated to the project: 76,610 of them as of October 2014. "While work is progressing on the hull, crews are working on restoring or re-creating the various systems used to operate a PT boat," Stengl writes. "Safety and historical accuracy are the first priorities in the restoration of PT-305. Original systems are undergoing improvements and redundancy. The vessel will also be discreetly equipped with programmable logic control to automate and enhance safety and vessel operation while keeping the look and feel she had during World War II." Launching is expected in spring or summer 2016, after which one of PT-305's first assignments will be to run speed trials on a measured mile marked by pylons set by Higgins Industries itself in Lake Pontchartrain during the war.

The National World War II Museum, 945 Magazine St., New Orleans, LA 70130; 504–528–1944; www.nationalww2 museum.org.



At the World War II Museum in New Orleans, PT-305 is being fully restored to her 1943 configuration, with volunteers contributing thousands of hours.





Above left—Two traditionally built cobles, both 26' long, took to the water off Bridlington, England, in 2014. Above right—MISNOMER underwent successful sea trails with her dipping-lug sail, the traditional rig for the type.

"An event that will probably never be seen again took place at **Bridlington** Harbour on the East Yorkshire coast on September 12, 2014," Paul Arro writes from Stoneferry, Hull, England. "That day, two new, traditionally built, 26' sailing cobles took to the still water of the harbor for the very first time. Built of larch planks on grown oak frames, the cobles were built by John Clarkson and Joe Gelsthorpe in just over ten months. They looked resplendent as the varnished hulls glistened in the glorious, early autumn sunshine. Seven coats of clear varnish and linseed oil had been applied to the upper strakes, the white waterline and red anti-fouling being complemented by the customary 'Flamborough orange' paint used on the interior. A large crowd had gathered for the launching, many of whom had followed the project from the very start. This unique boatbuilding project had caught the imagination of both local folk and visitors alike.

"Margaret Hyland, chief executive of the Bridlington Harbour Commissioners, which supported the project by providing the vessel maintenance facility in which the cobles were built, christened MISNOMER in the traditional way by spraying champagne over her bow. Karen Clarkson, daughter of builder John, christened FREE SPIRIT a few minutes later. The two identical cobles then moored side-by-side after being lowered into the harbor by the traveling hoist.

"The following day, MISNOMER was rowed out of the harbor on the early-morning tide and put through her paces at sea, her tan dipping-lug mainsail being hoisted to catch the breeze. She performed extremely well and brought back memories of days gone by, when sailing cobles were a common sight all along the Yorkshire and Northumberland coast."

John Clarkson, 1 Woodlands Ct., Carnaby, Bridlington, East Yorkshire, England; 0–12–62–671–934. Joe Gelsthorpe, Mereside House, Hornsea, East Yorkshire, England; 0–19–64–535–201.

Xabier Agote, president of Albaola, a Basque Maritime Heritage Center in Pasaia, Spain, reports that a new shipyard under the organization's mantle, called The Sea Factory of the Basques, laid the keel for a replica of a 16thcentury Basque galleon, SAN JUAN, in summer 2014. The vessel's construction is amply informed by the careful documentation by Canadian archaeologists of the remains of a ship discovered in 1978 on the sea floor of Red Bay, Labrador. The original SAN JUAN was itself built in Pasaia, and she is known to have been one of several vessels sunk in 1565. The ships were trapped in ice while riding at anchor off an extensive Basque whaling station on the Labrador shore of the Strait of Belle Isle.

The new construction will **match materials and techniques** used in the original, with a beech keel, oak sawn frames, and hemp rigging and sails for the three-masted rig, with a goal of not only reproducing the ship but adding to the understanding of the original vessel's construction and handling. The hull is 28m (92') LOA, with a beam of 7.5m (24'6") and a 6m (19'6") depth of hold.

Albaola earlier completed a replica of a whaleboat found in the same excavation, then undertook a voyage of some 1,100 miles from Québec City to Red Bay (see Currents, WB No. 220). The galleon reconstruction is a project of a city cultural organization called Donostia/San Sebastian, 2016. A 2016 launching is scheduled, with a program of sailing throughout northern European waters that year.

For further information, see www.san juan 2016.eu and www.albaola.com.eu, both of which have English options.

Lionnel Parent writes from France with news of a restoration at Chantier du Guip in Brest: "A few years ago the shipyard had the opportunity and, in a way, the privilege, of starting the important restoration of the legendary all-weather rescue boat PATRON FRANÇOIS MORIN. Built by the Lemaistre Frères shipyard in Fécamp, Normandy, in 1959–60, the one-of-a-kind boat is 46' long with a beam of 13'6", draft of 3'6", and displacement of 44,100 lbs, 4,410 of which is ballast. Her two diesel engines allow a maxi-



In summer 2014, the keel, stem, and transom frame were erected in Pasaia, Spain, for a faithful reconstruction of a Basque galleon by Albaola, which celebrates Basque maritime heritage. Materials and techniques match those of a whaler wrecked in 1565 at Red Bay, Labrador.

In France, the highly admired rescue boat PATRON FRANÇOIS MORIN, launched in 1960, is being restored at Chantier du Guip in Brest.



mum speed of 9.5 knots. After being launched in July 1960, she was assigned to the Société Nationale de Sauvetage en Mer (National Society of Lifesaving at Sea) on Ouessant Island, which is about 12.5 miles off the tip of Brittany and is well known for surface currents up to 10 knots. PATRON FRANÇOIS MORIN served for 35 years, conducting 250 rescues and 198 salvage operations, including the sad grounding of the AMOCO CADIZ oil tanker in 1978. At the end of her career in 1995, she stayed on Ouessant Island. In 2006, the Association Patron François Morin, composed of several former crew, took charge of her preservation. On September 12, 2010, she was listed as a Historical Monument in France

"This wooden-hulled boat is entirely unsinkable, thanks to 12 waterproof copper buoyancy chambers fitted inside the hull. Her cockpits are self-bailing. The sheer has a pronounced curvature to shed seas and the hull is light, self-supporting, strong, and flexible. She was designed to endure the worst of storms. The restoration matches her original construction techniques. The planking is composed of two inner layers of oak and an outer layer of mahogany, for a total thickness of 2.5cm (about 1"). Linen fabric was used between layers, impregnated with white zinc in the case of the outer layers. The planking is nailed to acacia steam-bent frames. Access ports were built into the hull and deck just above each of her two propellers, and copper cylinders normally blocking the holes could be removed to allow the propellers to be cleared if fouled by such things as fish nets.

"By the end of 2012, PATRON FRAN-COIS MORIN had already undergone about 2,500 working hours in the Chantier du Guip to repair the hull, the guardrails, and the stem. Now, with the aim of keeping this precious piece of maritime heritage in good condition, another round of work is under way, which includes restoring the deck and the cockpits, replacing the propellers, and rebuilding the rudder. Fundraising continues for the \$325,000 project.

For information, see Chantier du Guip, Quai du Commandant Malbert, 29200 Brest, France; www.uk.chantierduguip. com (English version). The yard also has facilities in Lorient and Île aux Moines. See also www.patronfrancoismorin.com (French only); Association Patron François Morin, Mairie, 29242 Île d'Ouessant, France.

■ A cold-molded spirit of tradition yacht is currently under construction at Cantieri Navale de Cesari in Milano Marittima on Italy's Adriatic coast. The epoxied hull veneers are all of mahogany, and the deck is teak epoxy-laminated over plywood. Designer Giovanni Ceccarelli calls the boat one that "looks into the future but is firmly rooted in the past." The U-shaped hull cross-section takes its inspiration from the designer's work on AMERICA's Cup contenders. However, this boat is intended to be easily handled by a small crew for performance sailing, using a square-headed

mainsail, self-tacking jib, and halyards led aft, though performance is enhanced by a carbon-fiber bowsprit that can receive the tack of a Code 0 headsail or gennaker. The cabin is spartan but suitable for weekend cruising, taking advantage of bright-finished wood for a touch of elegance. The boat is 32'9" LOA, with a beam of 8'3", a draft of 6'6", displacement of 7,606 lbs, ballast of 3,527 lbs, and working sail area of 680 sq ft. Launching for the CYD 146 is expected in summer 2015.

Ceccarelli Yacht Design, Via Ignazio Sarti, 7, Ravenna 48121, Italy; www.cec carelliyachtdesign.com. Cantieri Navale de Cesari, Sinistra Porto 9, 48016 Milano Marittima, Italy; www.cantierenaval edecesari.it/en.

■ Before he died at age 87 in 2013, multihull pioneer Dick Newick (see WB No. 202) wrote to WoodenBoat about a project he was involved with in Tonga. Now, Janet Halapua writes from that Pacific island nation with news that the project is proceeding well: "Project Vaka Fanaua's construction of a passenger-and-cargo trimaran, destined for Tonga's outer-island communities, continues into its eighth month. A small team has been working on the Dick Newick prototype trimaran in New Zealand. While labor costs are being kept to a minimum, work has been at a steady clip at Aaron Beattie's Lifestyle Yachts. In the middle of July, we were all excited to see the main hull constructed and turned upright. In late August this was joined by the first ama, and then temporary frames were set up and timberwork began for the third hull. They will join the masts, centerboards, trunks, and rudders, which have already been completed. The masts, which are free-standing and



A 32'9" LOA spirit of tradition sailing yacht designed by Giovanni Ceccarelli is currently under construction at Cantieri Navale de Cesari in Milao Marittima, Italy.



A 50' LOA
trimaran
designed by
the late Dick
Newick as
a low-cost
passenger and
cargo vessel
intended to
serve the
outer island
communities of
Tonga is nearing
completion in
New Zealand.

built from spar-grade Douglas-fir, are 45' long, with a 12" × 12" section at the heel and tapering toward the top. These have been sheathed in a light layer of 'glass and epoxy. The hulls are constructed from western red cedar planking and sheathed inside and out with 'glass and epoxy. Frames

have been laminated from Douglas-fir throughout the hulls for extra strength between the main bulkheads.

"Fundraising has also progressed nicely. The project is funded entirely by small donors from the Niua Islands Diaspora, to date totaling over \$300,000. The bulk of these are made

during fundraising concerts, Koniseti, which have been held at Niuatoptapu in Tonga; Auckland, Sydney, and Melbourne in Australia; and Honolulu, Maui, San Francisco, Sacramento, Seattle, and Texas in the United States.

'Since the passing of Mr. Newick, many people have stepped forward to volunteer their skills or labor. We are particularly indebted to the design oversight provided by Meade Gougeon in the United States and Ron Given in New Zealand. Vaka Fanaua means twomasted boat, referencing the sailing boats that operated in the mid-20th century on trade routes between Tongatapu and the Niua islands group. The 1970s saw harsh cutbacks in governmentsubsidized interisland shipping services. Before long, Tonga, like many other Pacific island countries, fell into a vicious circle of lacking sustainable sea transport services. Mr. Newick's design provides a boat at a moderate initial cost, and, equally important, low maintenance costs for the islanders. We hope the success of our prototype will create a positive cascade effect, reinvigorating dormant trade routes and local economies."

For more information, see www.talanoa.org.

## The 10<sup>74</sup> Annual

## **Small Reach Regatta**

For its tenth anniversary, the Small Reach Regatta will return to its roots for three full days of sailing around Brooklin, Maine. From a half a dozen boats in its first gathering, the SRR fleet has grown to more than 50 boats and has explored various Maine waters. This year, the starting point is Herrick Bay, with Blue Hill Bay, Jericho Bay, and Eggemoggin Reach within range.

## July 22-26, 2015 - Herrick Bay, Brooklin, Maine

Lodging, arranged through the SRR, will be at a local campground.

The SRR, sponsored by the Down East Chapter of the Traditional Small Craft Association, is open to sail-and-oars boats.

See www.smallreachregatta.org for details and application forms.





### **Offcuts**

The mention above of **Meade Gougeon**'s involvement with the Vaka Fanaua project in Tonga is but one example of the builder, designer, and WEST System epoxy guru's deep influence on wood-epoxy boatbuilding, as laid out by multihull designer Jim Brown's article on page 28 of this issue

of *WoodenBoat*. His range is global, showing how rapidly and how thoroughly proven innovations are taken up by wooden boat builders of all kinds. And speaking of Gougeon, he himself will be among the featured speakers at the Australian Wooden Boat Festival, an every-other-year gathering of the faithful and virtuous in Hobart, Tasmania.

This year's festival is coming up soon: **February 6–9**, at the height of summer

in Tasmania. Festival organizers promise that about **550 wooden boats** will be on exhibit afloat and ashore. During the most recent festival (the tenth, in 2013), more than 200,000 people attended—a staggering rate of growth since the first festival in 1994. Admission is free.

There will be quite a gaggle of American speakers at the festival. In addition to Gougeon, they are: Kaci Cronkhite, voyager and former Port Townsend Wooden Boat Festival director; Brion Toss, rigger of Port Townsend; Taylor Allen, proprietor of Rockport Marine in Maine; and myself, your own Currents editor.

 $For \ information, \ see \ www.australian \\ wooden bo at festival.com. au.$ 

ention above of the Basque galleon from Red Bay, Labrador, triggers a tip of the hat and raise of the pint, if you will, this time for Canada's nautical archaeologists. During their 2014 Arctic exploration season, they found and positively identified the shipwreck of HMS EREBUS of John Franklin's ill-fated Arctic Northwest Passage expedition of 1845. The ship lay on the bottom, in excellent condition, in eastern Queen Maud Gulf off



Some 550 boats are expected to attend the Australian Wooden Boat Festival, February 6–9 in Hobart, Tasmania.



the western coast of the Adelaide Peninsula. Side-scan sonar towed by Parks Canada's research ship INVESTIGATOR found the clear outline of a hull, confirmed by a remotely operated vehicle. On September 17, divers explored the wreck, and among their first finds was the ship's bell, marked by the English broad arrow and the year "1845," lying on the foredeck. That and other evidence provided a positive identification of Franklin's flagship. It was the sixth expedition season in search of EREBUS and her consort, TERROR, which has yet to be found. After the expedition disappeared, numerous rescue missions were mounted, ironically contributing knowledge of unexplored Arctic terrain and waterways in their own right. Rumors of survivors persisted for many years. Papers were found, then human remains. A macabre, bone-laden ship's boat carried on a sledge was found at King William Island, indicating the last survivors may have resorted to cannibalism. All 129 died. EREBUS was found well south and east of King William Island, pretty much exactly where Inuit oral tradition from the 19th century said both ships went down—a bit of poetic justice, since the Franklin expedition

could be said to represent an arrogance of European technology that later and more successful Arctic explorers, chief among them Roald Amundsen, learned to abandon in favor of proven native survival and travel techniques.

peaking of developments in nautical archaeology, researchers at the University of Cambridge, England, reported in November 2014 that they've had success with a new method of preserving waterlogged wood of the type recovered during shipwreck excavations. The current technology involves years of soaking or spraying with polyethylene glycol, which has been used on hull remains all over the world and on such large vessels as VASA, sunk in 1628 in Sweden and MARY ROSE, sunk in 1545 in England. The new system is polymer-based, and tests on wood samples from MARY ROSE show that it prevents degradation, distortion, bacterial damage, and acid formation of the kind caused partly by iron particles, for example within the wood of VASA (see Currents, WB No. 187). The treatment uses the natural polymers chitosan, which is derived from shrimp shells, and guar, derived from a type of bean, to stabilize wood at the molecular level and to isolate iron ions. It is said to be fully reversible. Tests are continuing.

n additional tip of the hat and raise of the pint is due to Biloxi, Mississippi, if you please. In that city, one of Hurricane Katrina's victims in 2005 was the building housing the Maritime & Seafood Industry Museum. In 2014—nine years after the hurricane destroyed the structure—the museum has reopened in a shining new building. Marking the occasion on August 2–3 with free admission, people portraying historical characters of the area, and numerous activities for children, the museum made its renaissance official.

The Maritime & Seafood Industry Museum was founded in 1986 to tell the 300-year history of maritime heritage in the Biloxi area. Its galleries cover wooden boat building, blacksmithing, local boat types such as catboats and schooners, artifacts specific to the shrimping and oystering fisheries of the area, sportfishing, and natural history. One of its prized artifacts is the gaffheaded sloop NYDIA, built in Biloxi in 1898 and displayed fully rigged in the new building. Nearby at the museum's

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Matthew Edmondson, Class of 2014

"Matt started work right at the end of a major restoration project for Tumblehome. We needed him to hit the ground running and he did. Matt's a gifted young man who brings a lot of natural ability and smarts to the table, but clearly GLBBS schooled him well."

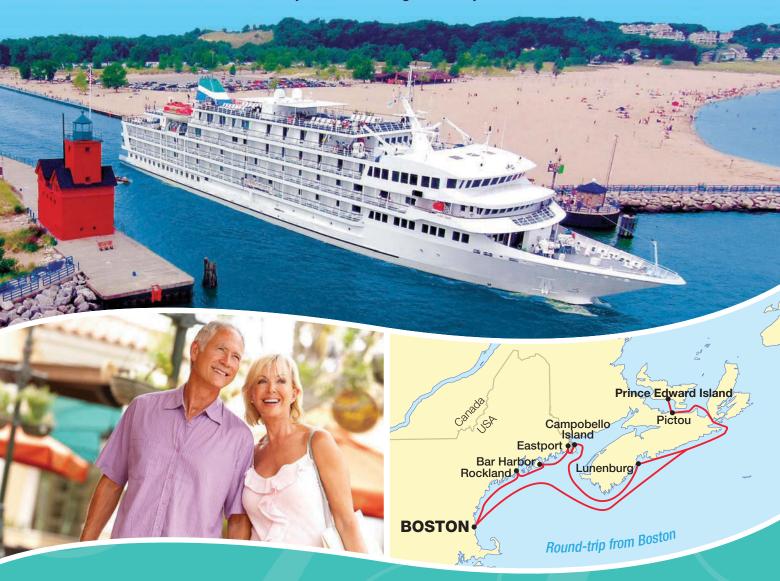
Reuben Smith of Tumblehome Boatshop, Warrensburg, NY

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The Maritime & Seafood Industry Museum, closed since Hurricane Katrina in 2005, has reopened in a new building in Biloxi, Mississippi.

pier, two schooners, the GLENN L. SWETMAN and the MIKE SEKUL, are moored. Both are 65' reproductions of historic Biloxi types and take passengers daysailing on Mississippi Sound and the Gulf of Mexico.

The museum has an active slate of educational programs and summer

adventure camps for students. No doubt the new building will also be a worthy backdrop for the museum's **annual wooden boat show**, scheduled for **May 17–18** this year. The building was designed by Daria Pizzetta of H3 Hardy Collaboration Architecture, New York, who is a native of Point Cadet in Biloxi, where the new building is situated.

Maritime & Seafood Museum, 115 1st St., Biloxi, MS 39530; 228–435–6320; www.MaritimeMuseum.org. The Schooner Pier Complex is at 367 Beach Blvd., Biloxi.

#### Across the bar

■ Frederick Sloane Ford, Jr., 90, August 1, 2014, Harbor Springs, Michigan. Mr. Ford grew up sailing his father's John G. Alden-designed schooner and a yawl that won the 1938 Mackinac Race. After serving in the U.S. Coast Guard for a few years in the 1940s, he set up a yacht design office in Grosse Point Farms. He became an advocate of cold-molded construction. Working with builder Ted McCutcheon, he developed his Sassy design, a family-friendly sloop. QUINTET, a yacht from his board, won the 1958 Mackinac Race's cruising class. One successful design was the Great Lakes Class Sloop, 36' LOA, first built by Burr Brothers in Marion, Massachusetts, in 1960. In 1983, Mr. Ford wrote, "STAR: A Designer's Own Boat," for WoodenBoat No. 54. The cold-



molded 33' sloop was an early commission for builder Steve Van Dam (see WB No. 104). Van Dam built a sister sloop, STAR'S ECHO, for Mr. Ford's daughter, and three more boats for the Ford family, including FLICKER, a reproduction of a John L. Hacker "gentleman's racer." Mr. Ford contributed to the resurgence of the Northern Michigan One-Design sloops from the 1930s (see Currents, WB No. 217) and donated design work to a 1970s reconstruction of the 18th-century sloop WELCOME (see WB No. 10), now destined for a forthcoming indoor exhibit at Headlands International Dark Sky Park in Mackinaw City.

- Bruce Ladd Burdge, 86, October 21, 2014, North Haven, Connecticut. A U.S. Navy veteran of World War II, Mr. Burdge worked as a yacht delivery captain after the war. He then settled down, taking a job as a boatbuilder at Dutch Wharf Boat Yard in Branford, Connecticut, a position he held for 53 years.
- Marc Pettingill, 65, August 29, 2014, Baltimore, Maryland. A native of Baltimore who spent summers in Maine,

Mr. Pettingill was a 1970 engineering graduate of the U.S. Coast Guard Academy. His Coast Guard career, ending in 1993, involved the safety of merchant vessels, especially those with wooden hulls. He then became a small-craft designer and boatbuilding teacher. He published a book, Building Sweet Dream (Tiller Publishing, St. Michaels, Maryland, 1996; reviewed in WB No. 134), about building a stitch-and-glue plywood canoe of his design. He also served as Maritime Projects Coordinator at the Frederick Douglass-Isaac Myers Maritime Park in Baltimore, as Maritime History Coordinator at Living Classrooms Foundation, and as a shipwright on USS CONSTELLATION projects.

■ Caleb Whitbeck, 84, August 10, 2014, Novato, California. A native of Reno, Nevada, Mr. Whitbeck moved to the San Francisco Bay Area to be near the sea. After military service during the Korean War, he returned and graduated from the Academy of Art University. During a 40-year career as creative director for an advertising agency, he owned three sailboats, two of them

wooden-hulled. His maritime art kept him in touch with his passion, and he won widespread praise for accuracy in his historical scenes.

■ **Robert B. Harris**, 91, May 18, 2014, Vancouver, British Columbia. Mr. Harris was an early pioneer of multihull sailing yachts. He served as a merchant seaman during World War II after graduating from the U.S. Merchant Marine Academy, but shortly after the war's end he took a boatbuilding apprenticeship. He designed and built his first catamaran, the wooden-hulled NARAMATAC, in 1948. He worked for the design firm Sparkman & Stephens for seven years ending in 1957, when he designed and built the cold-molded catamaran TIGER CAT, which went on to win Yachting magazine's One of a Kind Regatta in 1959. He later worked for Grumman Aircraft, the Robert Derecktor shipyard, and then in a design partnership with Frank Maclear. In 1967, he rejoined Sparkman & Stephens, but in 1972 he moved to Vancouver to work on his own. He wrote two books on multihulls, Modern Sailing Catamarans in 1960 and Racing and Cruising Trimarans in 1970.

# A Smooth Ride with a Bright Finish!





# Rebirth of a Westport Pond Boat

An exact copy of a derelict original

Text and photographs by Tim Sullivan

f the many regional classes of small sailboats developed in New England over the years, one in particular has received little fanfare outside of its small corner of the world. That little hidden classic is locally known either as the Westport, or Tripp Pond, Boat. Like many of its brethren such as the well-known Beetle Cat or its closer cousin the Cotuit Skiff (see WB No. 195), they were the recreational offspring of working watercraft adapted to local conditions, and built of available materials.

In and around the area of Westport, Massachusetts, lie the East and West branches of the Westport River. The boat that emerged to work this long, shallow tidal estuary was a small, shoal-draft, flat-bottomed sharpietype skiff between 10' and 16' long. It could be easily and economically built and rigged.

My own story with Westport skiffs begins in Gloucester, Massachusetts—some 90 miles north of Westport. We have a similar natural ecosystem of tidal flats, creeks, and marshlands here on the North Shore. After years of watching the tide rise and fall every day over these flats, I decided it was time to build a suitable boat to explore the area. The Westport skiff has long been lodged in my memory, ever since Bob and Anne Baker wrote of their virtues years ago (WB Nos. 32 and 66). I decided recently that a closer look was in order, so I

Above—The Westport Pond Boat evolved in Westport, Massachusetts, as a recreational derivative of local working boats. Author Tim Sullivan dismantled a derelict original from the 1930s, using the resulting pieces as patterns to build the exact copy shown above.



The author's Westport Pond boat, as he found it at the F.L. Tripp & Sons boatyard.

dug out the old issues and reread the articles. It was a done deal: This seemed like the ideal boat for bonding myself and my family to the river.

It wasn't long before I was on the phone to Westport. That was in 2010, and the first person I talked with was Anne Baker—or "Pete," as she was more commonly known. She was Bob's widow, and Bob had had the foresight years ago to take the lines off some of the surviving boats in and around town as they were rapidly disappearing. Anne had made the plans available for sale—along with many of Bob's other small-craft designs.

She invited me to visit, and we spent a delightful summer morning talking about boats at her wonderful old home that seemed itself to have stood still in time. She allowed me to measure and photograph a couple of Bob's boats that were out in one of her several barns. I soon left with a couple of sets of plans tucked under my arm and some leads to follow up on while I was in town. One of those was a visit to the F.L. Tripp & Sons boatyard whose founder, Fred Tripp, built many of these boats years ago. The now-modern yard is still family owned and operated.

I arrived at lunchtime, and nobody was in the office, so I took the liberty of poking around the yard until someone surfaced. Way out back in the weeds something caught my eye. It was the remains of an old pond boat! I inquired about it, and the yard manager told me it had been there for years and would soon be bound for the dumpster; if I could use it, please help myself. It had deteriorated well beyond any consideration of repair or restoration, but it was nearly all there and held a wealth of information. So with some straps to hold it together and a gentle heave, it was soon in my truck and heading to Gloucester.

Allow me to explain just what this so-called "Pond Boat" and its many sisters actually were. They were 12' versions of local working skiffs, somewhat standardized for racing and recreation on local ponds and rivers. Cockeast Pond was the center of activities.

There were a couple of generations of the pond boat, the first of which was a fleet built by Fred Tripp beginning in the early 1920s. They were raced every Saturday at Cockeast Pond, and I imagine they served well for inexpensive recreation during the Great Depression. Interest in these first boats waned after the Hurricane of 1938 and through the war years, but in the early 1950s pond boats enjoyed a resurgence. More were built at F.L. Tripp & Sons boatyard, and the class was back on its feet.

Many of the new boats were built on speculation when yard work was slow. One former employee recalls that, back in the early 1950s, when they ran out of

things to do, they were told to "go build a pond boat." He said the boats always seemed to sell quickly.

There were slight variations in the two generations. The pre-1938 boats had a round-sectioned mast, a graceful sheerline, and thwart knees cut from natural apple crooks. The later boats had a rectangular mast, the thwart knees were replaced by a pair of upright stanchions, and the sheer was flattened by raising it amidships about an inch and a half. The first two changes were surely made to simplify construction, and the change to the sheerline seems to have been done to make the boat drier—although at the expense of good looks. The basic hull and rig remained unchanged, but some old-timers claim that, besides being betterlooking, the earlier boats performed better.

The remains of my old boat are from the pre-1938 generation, and as of this writing it is the only one that I know that still exists. There are, however, many old cow barns in the Westport area, and one of them may

Here, the original boat is pulled back into shape, with three molds and a transom pattern holding it to its lines.





Once the boat was measured and photographed, it was dismantled for patterns. *Inset*—A starboard plank is clamped to new white-pine stock, ready for duplication.

hold others; if they don't and if another early pond boat never comes to light, I'll be happy to have done my part to record this fine little boat.

any molds, patterns, and half models of obsolete boats were burned to heat the very shops that created them, which seems to be the case here, as well. So, the first thing I did with the old girl was to get her pulled together and leveled up on her waterline with the help of some blocks, clamps, wedges, and ratchet straps. Then, with string, I established a baseline between the stem and transom above the boat and along its centerline. It was then a matter of taking every conceivable measurement, bevel, and photograph.

I made three mold patterns at 3′, 6′, and 9′ aft of the forward perpendicular. It was common practice in the Westport area to use only one mold about one-third of the way back; sticks were then propped between the garboard strakes, spreading them until the shape suited the builder. I didn't want to second-guess the veteran builder's eye, and my three molds gave me more precise control of the hull shape.

Once satisfied that the hull shape was well measured and documented, I proceeded to carefully disassemble the boat by using a nail puller and a small grinder to remove the heads of what remained of the fastenings. She came apart quickly. I felt I was getting into the original builder's head as to how he put the boat together so many years ago. As all the pieces came apart and were studied and recorded, they often revealed hidden details







With the major pieces cut to shape, the boat went together quickly. *Top*—The lower side planks are fastened to the stem. *Middle*—While molds were not used in the original construction, three were used in the replication to carefully control the boat's shape. Once these were installed, the side planks were bent to the transom and fastened. *Bottom*—The sheer planks are installed, riveted along their entire length.

that, with a little imagination, allowed me to connect with a builder I never knew, from almost a century ago.

With the boat dismantled, it was a simple task of making all the two-dimensional patterns. I gingerly flattened the nine-decade-old side strakes onto some ½" plywood pattern stock, then carefully transferred mold, thwart, and knee locations onto the patterns and cut them to shape. I also made patterns of the transom,



The partially completed boat was inverted on sawhorses, in preparation for bottom planking.

centerboard, knees, and everything else.

It was rewarding to get to this point, and now armed with a new set of the long-lost patterns I could build an accurate copy of the boat. I stuck to the original wood species as best I could: white cedar bottom planking, eastern white pine for the side strakes, and white oak for the frames and stem. Some pieces (such as the transom) had deteriorated beyond easy identification of wood species, so I chose longleaf pine for these.

As much of a traditionalist as I may be, there are a few practices that I can't bring myself to follow. One is the use of iron fastenings. In years past, lumber and labor were cheap. The boats were used hard and had a relatively short life expectancy, so iron fastenings made sense. Today, silicon-bronze and copper are the best

choices for the fastening of small boats.

These Westport-style boats are very easy and straightforward to build (see WB No. 66). The planks are cut from the patterns and left a foot or so long at their after ends. The rabbets called gains are cut to bring the laps flush at the stem, and the garboards are fastened to the inner stem and bent cold around the mold (or in my case, three molds). A block-and-tackle or similar device pulls the after ends of the planks together until the pre-beveled transom can

be inserted and fastened in place. This same process is repeated for the upper strakes, and then the unbeveled laps are fastened together and the boat is turned upside down up to receive the ½" cross-planked bottom. No caulking or seam compound is used between the bottom planks; they are simply butted together and fastened directly to the garboards with no chine log.

The outer keel, skeg, and sacrificial chine guards are then put on; the boat is righted; and the centerboard trunk, thwarts, foredeck, knees, and rails are fitted. On my boat, I was able to test-fit all the old pieces such as thwarts and knees to ensure the proper fit and placement of the new pieces in the reconstruction.

You have to hand it to some of the old-time skiff builders who got shapely boats from flat boards.



The bottom was cross-planked with short cedar stock. Guardrails, keel, and a skeg of white oak were then added.



The finishing touches included a short foredeck, the centerboard trunk, and sternpost.

Aesthetically, this, the simplest form of boat, doesn't have a bad side and I never tire of looking at her.

The original rig had long parted company with the old boat, but I feel I made an accurate representation of it from known measurements and old photographs. Despite their small size, these 12′ pond boats are a delight to sail. The unstayed cat rig is simplicity in itself. The leg-o'-mutton sail offers a low center of effort, but like most cats they do have a weather helm that increases with the breeze. However, once the sail is reefed, effectively pushing the center of effort forward, the weather helm is all but forgotten.

Don't expect to get up on a plane; slow and steady wins the race in these skiffs. They were never intended to be racing machines and, in fact, when driven hard under a press of sail, they drag quite a wake behind them. Those of us who frequently sail on inland waters know how fluky and unsteady the winds can be, so you have to be on your toes, ready to slack off the handheld sheet in a puff.

I often hear from people who learned to sail in these pond boats how much fun they had flipping them over in their youth. Fortunately, Cockeast and most of the other local ponds are shallow, so the boats could be righted and underway again quickly. I tried this myself one day—although not on purpose—in a 25-knot gusty breeze, and found out that my 250 lbs of movable ballast doesn't move quite as fast as it used to. That aside, in a reasonable breeze these boats sail very nicely and stay upright on their bottoms.



The newly replicated boat awaits its rig.

I was pleasantly surprised at how well this boat works to windward. She behaves before the wind, as well. A lot of small boats have the sometimesscary tendency to bury their bows and even pitchpole. This one puts her nose down only a little and keeps on course.

My favorite quality of the pond boat is her shoal draft. The marsh grass here in Gloucester is about 2'tall, so at high water, if I see a foot or less

of it showing above the surface, I just graze right over it. The pivoted centerboard kicks up on its own, and the rudder doesn't protrude below the skeg. In fact, skinny water is never much of a consideration; she seems to sail through anything that's wet. When the afternoon winds die early and other daysailers are struggling with canoe paddles or fumbling with a temperamental outboard motor, the pond boater just breaks out the oars and continues along ahead of the blackflies.

In fact, leaving the rig on the beach and setting out under an ash breeze is another place where this boat shines. Most of the bottom has very little rocker, except way aft where the last quarter tucks up so the bottom of the transom clears the water, thus greatly reducing drag. It also allows the boat to be rowed backwards quite well, which proved to be a great advantage in my bass fishing and photography expeditions.

Weighing under 200 lbs, the boat is easy to handle out of the water and it takes to the back of a pickup truck like a hound dog. I back the truck tires to the edge of the water at the landing and the boat slides right in or out. Two sturdy guys can move it around with no trouble, and the chine guards make convenient handholds

Many fine sailors from southern Massachusetts and Rhode Island cut their teeth in these little pond boats. It's a lovely and versatile type for messing about on inland waters, and it's a shame that only a dwindling number of these old boats make it to the water every year. Will the local kids never again experience all the smells of spring, including turpentine, oil paints, and seam compound? Maybe there will be a revival someday. Time will tell.

I, for one, plan to enjoy many years on the waters in this wonderful little boat.

The author is currently developing a set of drawings for his Westport Pond Boat, and welcomes inquiries from readers wishing to purchase a set. Contact him at 17 Woodward Ave., Gloucester, MA 01930.

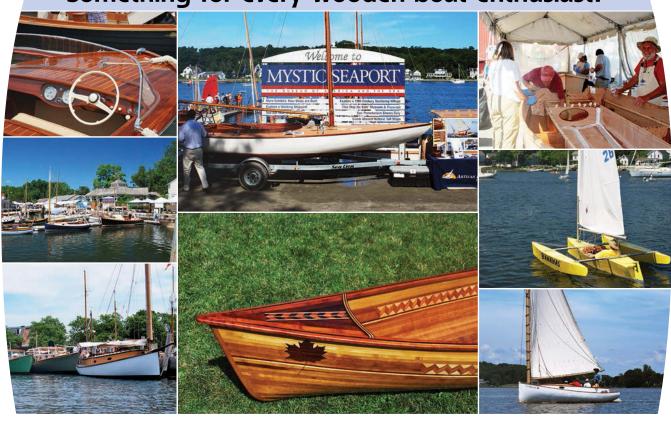
Author's note: Sadly Anne "Pete" Baker crossed the bar just days before I launched the boat that she helped inspire me to build. She and her late husband, Robert Baker, did much to keep the spirit of wooden boats alive and well. Thank you both!



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# Catching Up with Meade Gougeon

The ever-fertile mind of a counter-revolutionary craftsman

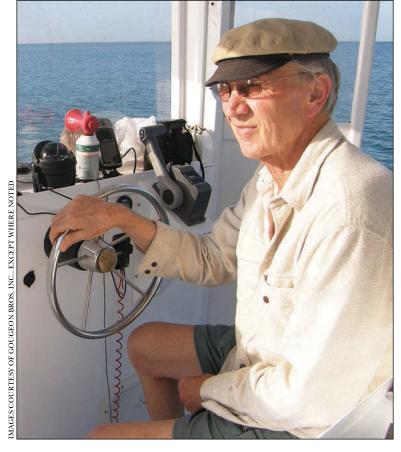
by Jim Brown

OGUE WAVE was a 60' trimaran designed by Dick Newick and owned and skippered by Phil Weld. Both men are now deceased, but remain two of America's most venerated multihull proponents. In 1978, my friend Meade Gougeon and I were invited to join ROGUE WAVE's crew for the 1978 Tradewinds Race. This contest, for multihulls only and no longer run, was a 900-mile dash around the Lesser Antilles where the March–April tradewinds afford the finest sailing conditions in the world. Our competition included lots of sea-seasoned multihulls large and small.

We reported aboard at Saint Martin, where I saw our boat for the first time, and was struck by her beauty. She was, in my opinion, the finest offshore multihull of her day, and I was thrilled to be invited to sail in her. Meade knew this boat intimately, for she was built in his shop at Bay City, Michigan.

After we stowed our gear, Meade emerged on deck in swim trunks and announced, "Well fellas, this is going to be my first taste of salt water," and dove in. As he popped up, spluttering brine, I was jolted by the paradox that this ultimate seafaring yacht had been built by

Above—The Gougeon Brothers shop in Bay City, Michigan, built the pioneering trimaran ROGUE WAVE (left) in the late 1970s. The boat was meant to sail in the 1980 Observer Singlehanded Trans-Atlantic Race (OSTAR), but a rule change disqualified her. The Newick-designed MOXIE (right, built by Walter Greene), which won that race, was her replacement.



The Gougeons, under Meade's leadership, were pioneers in the use of epoxy in wooden boat building. Although retired from Gougeon Brothers, Meade's ever-fertile mind continues to test new boat concepts. Here he's at the helm of his Gougemaran—a power catamaran (see page 34).

under the wind. And closehauled, when the stress is the greatest, she slows down to 12 or so and her narrow hulls just slice through the crests. She doesn't have to climb over them. And as we've seen, downwind she just surfs away from the hot spots." Mulling over this explanation, after a while I could sense how stress was relieved by speed in the same way it is by heeling, and that speed is a function of lightness.

We raced hard and won all three less. After

she exceeds wind speed, just sailing out from

We raced hard and won all three legs. After a week of such sailing, and partying at the two obligatory stopovers, I was forced to conclude that Phil Weld was the most gung-ho skipper I had known, both at sea and ashore, and that Dick Newick was the most inspired of multihull designers. I also concluded that there was absolutely no way this boat could normally sustain the driving we had given her if she hadn't been so light. And there was no way to be that light— and still hold together—without some-

thing like epoxy. That was my epiphany—my introduction to the then-nascent world of wood-composite boats. And it was my introduction to the man—Meade Gougeon—who put epoxy in the boatyards.

Recently, I had the opportunity to catch up with him—to look back at the significance of epoxy to wooden boats. And to get a glimpse of its future.

eade Gougeon (gū-zhŌn) is, primarily, an affable leader. He and his wife, Janet, have ten children, seven of them adopted, which may explain his knack for gathering highly qualified, yet eminently cooperative people to staff the glue

a Lakes sailor. But before the race was over I became Meade's student, and we emerged as shipmates on the best of terms.

We were both enraptured by ROGUE WAVE's performance. She routinely logged speeds in the mid to upper teens, loping along as if she were half asleep. Most especially, we marveled at her ability to sustain a breakneck pace when sailed closehauled against the tradewind waves of the open Atlantic, 7′–9′ white horses rolling all the way from Africa. We shared the cockpit in the Caribbean moonlight, steering in a sensual séance as great veils of spray peeled high from the lee hull's bow, sometimes coming down two boat lengths astern.

Nevertheless, I was concerned about the extreme structural stresses being imposed on the boat. Here she was, a sprawling 33'wide and 60'long, just booming through these waves. She felt solid as a block of wood, and we hadn't heard a single snap or groan from her, but she simply would not heel to spill the wind in gusts. All that stress was converted into speed, but to me the loads seemed untenable, and I was wanting to reduce sail. When I expressed my concern to Meade he said, "Well you know, stress is a function of weight as well as of speed. Her dry weight at launching was just less than 10,000 lbs. Watch her in the gusts. When we're power-reaching like this,



Meade Gougeon has been a lifelong iceboater, and it was in iceboats that he developed many of his ideas about the marriage of wood and epoxy.



that the glue was already being used by the Detroit patternmakers, but was really crude back then—thick as tar and hard to mix and spread. However, it did not require any real clamping pressure, and it could even span gaps in joinery while still making bonds stronger

Jan (left) and Meade Gougeon in the early days of Gougeon Brothers. A third brother, Joel, provided much of the

business's start-up capital.

than the wood itself. Most water-resistant glues require heavy clamping and precision joinery. Besides filling gaps and bonding without high pressure, epoxy could seal the joints.

The Gougeon brothers had begun building boats in a little shop down by the Saginaw River in Bay City, Michigan, in the mid-1960s. They soon acquired a much larger shop next door and staffed it with family and friends. Bay City is close to the headquarters of the Dow Chemical Corporation, and Herb Dow, grandson of the founder, just happened to stop by the Gougeon shop to order an iceboat. Through Herb, the brothers learned that epoxy was originally developed by the Germans during WWII when they couldn't get tin for plating the insides of food cans to prevent the steel from rusting. Most epoxy is probably still used for that same purpose today. "If a half mil of it can do that for steel," asked Meade, "what would it take to make it seal wood?"

With help from Dow chemists, the brothers learned that epoxy could be modified with things called "reactive diluents" and "flowing agents." This could make it both craft-friendly as an adhesive and spreadable as a coating. It also was found to be ideal for saturating fiberglass cloth when used for sheathing and reinforcing wood.

And then there were the fillers. A given resinhardener matrix could be "bulked out" by adding a selection of dry fibers or powders into the fluid mix, whereupon its texture could be tailored to resemble anything from hot honey to cold mayonnaise to peanut butter from the bottom of the jar. With Jan leading the way, it developed that these mixtures could be used for anything from non-sagging glues, all the way to sculptable putties for filling depressions, filleting corners, and fairing under paintwork. The fillers could be blended to enhance the epoxy's physical properties for a given application, and the cured result could range from light and easily sanded to extremely hard and strong. It could even bond highly stressed metal hardware to wooden structures—an age-old challenge for boatbuilders. Slowly it emerged that with just a small number of components, the craftsman could mix up, in his own shop, a wide range of epoxy concoctions to suit almost limitless applications. Today's variety of uses was then unimaginably wide, but Meade and Jan knew they were pioneering.

Soon, the Gougeon's craft became a business. An early market for epoxy was in making repairs to fiberglass (polyester) boats, for it happens that fluid epoxy sticks to cured polyester a lot better than fluid polyester sticks to cured polyester. Repairing fiberglass boats

company he founded with his two brothers, Jan and Joel, in 1971.

In addition to their summer sailing, the brothers grew up sailing iceboats at automobile speeds. Because of minimal friction, iceboats normally sail much faster than the ambient wind is blowing. On downwind courses they routinely outrun the wind, even tacking closehauled through a breeze that's unable to keep up. This phenomenon gives the sailor a soaring sensation largely unknown to "soft water" sailors, and it was a thirst for that sensation that made Meade want a boat for summer use that would likewise achieve such speed. He knew this would require very lightweight construction, and this led him on a "materials quest," which in turn led to him falling in love with wood-epoxy technology. That love affair explains how modern wood-epoxy boatbuilding happened for Meade, and by extension for many of us reading this.

Meade believed that if a boat could be built with wood that was kept reliably dry, and therefore dimensionally stable and durable over time, it could be built a lot lighter than usual. But to keep wood dry, in a boat, meant somehow hermetically sealing it everywhere, inside and out. Most coatings, like paint, contain thinners that "flash off" to leave microscopic holes in their membrane that can pass water and, more important, water vapor. Meade recalls an incident in the 1960s that drove him harder on his materials quest: "I had recently examined my old iceboat and found it looking pretty sad. I removed an inspection port in the hull and tried to look inside, but my glasses fogged up! Some water had gotten inside and turned to vapor, and was screaming to get out. All at once I realized that my boat was being stewed from the inside." And so the question was formed: How does one protect all of the boat, inside and out, joints and all, from water—and from moisture vapor? And with what?

In the late 1960s, Meade's youngest brother, Jan, served an intense apprenticeship under an established boatbuilder. It was there that he learned to glue wooden parts together with epoxy. He once told me



Meade and Jan Gougeon built the 35' offshore triamaran ADAGIO in 1969. She was the first large wood-epoxy boat built without fastenings, and has served as a test bed for the longevity of wood-epoxy structures. She completed the 2002 Chicago to Mackinac Race, in which she survived a storm with wind topping 69 mph. ADAGIO's top speed in that race—her fastest ever—was over 30 knots.

remains a large component of the diverse epoxy market today, but the initial Gougeon focus was on wood. Jan was winning lots of races in wooden DN-class iceboats, and the word got out that these Gougeon guys had a secret weapon. Iceboats are subjected to extreme stresses and frequent crack-ups, and the Gougeon shop could apparently fix anything. Soon their customers started showing up with their own jars, wanting some of that "Gougeon goo" to fix their own iceboats. "We didn't want to be in the glue business," said Jan. "We wanted to build boats. But these guys were friends. What could we say?"

Well, what Meade said, if only to himself at first, was, "Hmmm. Maybe we are staring at an opportunity here.

"It was like we were on a mountain ridge," he continued, "gazing westward upon a whole new realm of craftsmanship." There were distractions in his vista. All three brothers are veterans. Meade was in and out of the National Guard before Vietnam, serving his tour teaching English to almost illiterate inductees. Jan spent a year in Vietnam in a construction battalion, where he advanced quickly because he actually knew how to construct. But it wasn't until 1971 that the middle brother, Joel, the flying ace, returned from the war with his savings, and by late that year they were all flat-out in the

glue business, selling the first WEST System-branded products.

The business grew through the next several decades, spawning a range of worthy competitors serving a burgeoning epoxy market. Meade and I began corresponding in the early '70s, and we finally met at the first World Multihull Symposium in 1976. That bellwether event included a late-night skull session for Meade and me, and it became obvious that I should visit the glue factory.

What I found there was more like a laboratory than a boatshop, but one of its ongoing experiments was "in the field." Meade's personal boat, a 35' trimaran called ADAGIO, was the fourth in his series of experimental craft. Weighing in at a then-miraculous 2,000 lbs, she was so lightly built that I privately doubted her longevity. However, in her 44-year career she has been campaigned aggressively in many of the Great Lakes contests with an impressive record of success. In fact, she is still competitive even against far more powerful and expensive racing boats built with aerospace composites. Indeed ADAGIO, which is totally glued and coated with "modified" epoxy, is a shining example of the strength, fatigue resistance, and durability achieved early on with this technology.

The Gougeons began building the Formula 40 trimaran ADRENALINE in 1983, and launched the boat in 1987. She sailed on the European circuit for several years, and most recently was racing in Phuket, Thailand.

Meade and Jan continued racing their own boats on waters both hard and soft. Iceboat repairs proved invaluable for observing failure modes, and their "ballroom" boatshop was also utilized in building custom boats for a diverse clientele. These projects included everything from a monohull two-tonner to a Formula 40 trimaran, a speedtrials proa, a Little AMERICA's Cup catamaran, and a large ocean racing/cruising trimaran.

After 40 years in manufacturing, marketing, labor relations, and business negotiations, Meade sustained a heart attack in 2001. Jan's health had also declined, and Joel had long since left the company to pursue a distinguished career in Michigan politics. By 2004, Meade concluded it was time for him to follow Jan's example by "successing himself" from the office and the lab, back into his original post in the boatshop. Consummate craftsmen both, they agreed that "Shop time is sanity time." Jan died in 2012, and Meade has been officially retired from the firm for 12 years, but he has not exactly swallowed the anchor (see sidebar).

n the late 1990s, both Meade and Jan acquired modest winter homes on Florida's west coast. The resulting annual migrations effectively doubled their time on soft water—seawater yet—and led to a new sequence of their personal, always developmental, boats. Built in the big shop at Bay City, these craft were intended for regular trailering back and forth between summer use in Michigan and winter use in Florida. This series includes two 35′ outboard-powered catamaran "pontoon boats," a nifty tortured plywood monohull sailboat, Meade's series of very sophisticated sailing canoes, and Jan's series of three unique multihulls including his last boat, a 40′ re-rightable, water-ballasted, trailerable, sailing catamaran (see sidebar).

Some of these remarkable craft have appeared at the Gulf Coast Small Boat Rendezvous in Cedar Key, Florida. Held at a sleepy, historic, beachfront town west of Gainesville, this no-frills gathering is for committed afficionados of trailerable and cartoppable watercraft. At these shindigs, upwards of 200 people pass through the small-boat filter as if given preference at the Pearly Gates, and "find themselves" at Cedar Key. They also find that this haven happens to include their personal zoo of little ships from another world, many of them owner-built of wood-epoxy.

On Saturday of the first weekend in May, the fleet embarks for an uninhabited island just a half mile offshore. There the boats line up along a sandy concourse for a muted cacophony of owner's sermons that



purposely preach to the choir. Together with sustenance and hydration, a trove of boat-buff wisdom is enthusiastically exchanged.

On these occasions, it is easy to identify Meade Gougeon. After several minor surgeries for treatment of sun-caused skin lesions, he appears in an extremely sun-protective getup: floppy hat, UV-excluding khaki shirt, and pants with wide suspenders, high socks and water shoes, gauntlet gloves and—here's the clincher—total zinc oxide whiteface. He presides with dignity over the continuously rotating confab of devotees who mill around his latest floating creations.

ow, really, does one "catch up" with Meade Gougeon? I wasn't in on the start-up of the epoxy revolution. My family and I were off cruising in Central America then, and we didn't return until 1975. The timing for epoxy had been coming up to speed for a decade or so, for during the 1960s there was a lot of owner-building of ocean-cruising sailboats—a "movement" sparked, to some extent at least, by Cold War paranoia and Vietnam escapism. In those years, I was selling cruising multihull designs to this clientele. As boatbuilding epoxy became available in the early 1970s, it helped this can-do movement mature, but I knew little about it until I returned to find that some of my clients were using epoxy by the drum.

I'm still swimming in the Gougeon wake, looking back yet trying to catch up. Perhaps the only way of catching up with the man is by beholding where he's been leading us for over 40 years. Along the way, I think he gave wood back to us. We almost lost it after WWII when all those derelict, prewar wooden boats sparked the fiberglass revolution, against which Meade has spent his life in open opposition. In this sense, he is a counter-revolutionary craftsman.

On one of the junkets Meade and I have made in his motor home on both the East and West Coasts, we traveled from Seattle to San Francisco. En route, we stopped at the Evergreen Aviation and Space Museum at, McMinnville, Oregon, to see the "Spruce Goose," Howard Hughes's WWII flying debacle. All interior

surfaces of this enormous wooden aircraft are meticulously sealed with varnish mixed with aluminum flake, the best moisture-barrier coating available at the time. Meade said of it, "As wooden structures go, this thing is a masterpiece, but it has to be preserved in this climate-controlled building. It's like those British Mosquito bombers of the 1940s. They were all laminated wood, and they could fly right away from the German fighter planes. But if they had to be left out in the weather, especially in the tropics, they would go soft from absorbing moisture. Actually, with enough time in those conditions, no coating material can entirely exclude moisture, but today's epoxy coatings come close. So now, thank goodness, we can have boats that are built like wooden aircraft and can live in a marine environment."

Along the Oregon coast, Meade remarked at the sheer size of the redwood trees, and I realized that he had never seen the *real* redwoods. Below Crescent City, California, we diverted inland to mosey down The Avenue of The Giants, where his advanced concept of wood was transcended. For hours we strolled through groves whose hoary boles approached the girth of buildings, their upper stories disappearing into misty canopies. The trees seemed occupied by silent spirit residents. Meade's exclamations, as he craned his gaze upward, were emitted as breathy, reverent mumbles. "Good God," he repeatedly whispered, and he meant it. What moved him most was the sight of a fallen redwood labeled as being some 2,000 years old when it fell. Its bark and sapwood had crumbled, but its heartwood, lying shoulder high, was intact. Growing over it, with enormous root sinews straddling the corpse, was yet another redwood tree, very much alive, itself aged roughly 2,000 years. After apprehending the meaning of this phenomenon, Meade said, "You know, redwood is practically rot-proof. Like a lot of noble species it contains a natural toxin that fungus can't tolerate, and lying on the floor here in a temperate rain forest, this log has enjoyed a stable moisture content. But thousands of years!? Really! And the sheer size of them!"

Later he returned to the subject saying, "You know, those trees are natural evidence of what we've been yapping about for years. The redwoods are about the lightest in weight of all the western conifers. Nature puts no limit on their geometry, so they can be as big as they want without getting too heavy to hold themselves up. Just growing there like that, they tell us why wooden hulls can be thick, and for that reason stiff. Of course, stiffness is the first need of a hull, so wooden hulls can be stiff without being heavy. All we have to do is stabilize the moisture content."

Back on the road, Meade called his wife and insisted she fly post-haste to San Francisco. From there he whisked her back northward to visit, again for him but the first time for her, The Avenue of The Giants.

Jim Brown, a renowned designer, builder, and sailor of trimarans, has written numerous articles for WoodenBoat, including a profile of pioneering multihull designers (WB No. 202), the Seaclipper 10 trimaran (WB No. 227), and the boats of legendary solo circumnavigator John Guzzwell (WB No. 84).

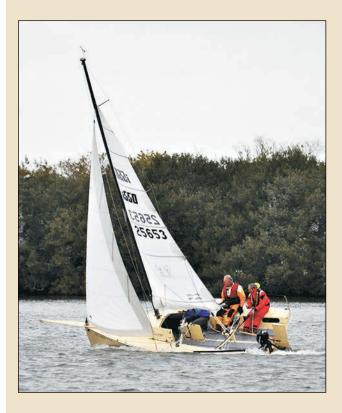
# Gougeon Retirement Projects

Before his retirement, when Meade Gougeon purchased a winter home on Florida's west coast in order to double his time on soft water, he also began spending more time in the boatshop. The Gougeon fleet that developed during his "retirement" years is testament to Meade's ever-fertile mind—and to the possibilities inherent in wood-epoxy construction. (Some of the boats in the following gallery have composite hulls topped by wood-epoxy components, but all are buildable in wood.)

—/B

## **Hot Canary**

This 18' stitch-and-glue I550 sport boat designed by Christopher Beckwith was built by Meade and Jan and the Gougeon lab staff. With Jan's health declining, he and Meade competed twice in the Everglades Challenge, once finishing fourth in a race where more than half the fleet routinely does not finish at all.



## Gougemarans

eade and Jan each built one of these super-Mightweight "pontoon boats" for trailering between Michigan and Florida. They are 40' long and 9' wide, but with their superstructures demounted are so long and low that they do not appear illegally wide. So far, they have not been stopped by police while on the road. Built on foamcomposite hulls designed by Dick Newick for wakeless crew coaching launches, these smooth-water boats were finished off in wood-epoxy and are capable of 50 knots on the highway behind a minivan, and 15 knots on the water with only a 30-hp outboard motor. They have proven ideal for family outings and prowling inland waters north and south.

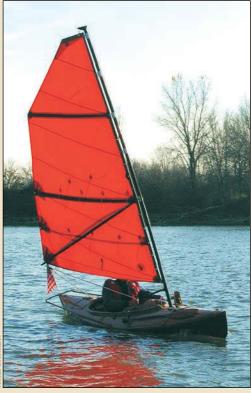




## **Serendipity Sisters**

hese are a series of six developmental sailing canoes inspired by Hugh Horton, and are used for cruising in the Lakes, and for competing in the Everglades Challenge. For surviving the open-sea segments of this endurance race, Meade's current model features a

fully battened, four-increment reefing rig. To improve downwind stability in waves, it has a single crossbeam with articulating outrigger hulls, and to boost his own senior endurance, it has a reclining seat for cat-napping under way.





# WoodenBoat Magazine's Maritime Tour of The Nile River August 9-20, 2015

Join us for eleven incredible days exploring the Nile's finest ancient maritime attractions with renowned Egyptologists Colleen and John Darnell. After exploring Cairo's most fascinating sites, we'll move on to Aswan, where we'll board the legendary steam ship SUDAN for a four-day private cruise. This century-old paddlewheeler remains a symbol of the golden age of river travel, and carries her passengers in Belle Époque luxury and comfort.

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For information, including a complete itinerary, please visit www.woodenboat.com

To book your space or to request further details, contact Matt Moran at Goodspeed & Bach, 888-446-1789;

e-mail travel@goodspeedandbach.com.







#### **Cruising SUP**

esigned and built by Meade for aerobic exercise and for exploring shorelines, this plywood/epoxy Stand Up Paddleboard features a seat, a sail, and a stowage lazarette.







#### **Strings**

esigned and built by Jan Gougeon, this 40' swing-Designed and built by Jan Godgest, wing trimaran is built of plywood/epoxy and foam composites to minimize weight and cost. It incorporates shiftable water ballast, a "dirigible" float at the masthead, and a mast-inclining rig for ducking under

bridges and rapid re-righting in the event of a capsize. Launched shortly before Jan's death in 2012, this futuristic vessel is slated for continuing development and campaigning by the Gougeon crew.

## New Release Available December 4 No Ordinary Being: W. Starling Burgess, Inventor, Naval Architect, Poet, Aviation Pioneer By Llewellyn Howland III Published by David R. Godine, in association with the New Bedford Whaling Museum and Mystic Seaport

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#### CAPRICE and GHOST

THE UNLIKELY RETURN OF THE SOUND INTERCLUB CLASS

by Matthew P. Murphy

CAPRICE (left) and GHOST were part of the 28-boat Sound Interclub fleet built by Henry B. Nevins during the winter of 1925–26. The class raced on Long Island Sound for more than a decade before being eclipsed by the larger International One Design.

n the autumn of 1925, a group of Long Island Sound yachtsmen met to discuss their growing need for a modest-sized daysailer. They sought a boat of similar proportion to a 6-Meter, but smaller, less expensive to build, and easier to sail. The new boats would be simple enough to be handled by junior yachtsmen, but exciting enough to provide good competition for veteran sailors. They would be well built, beautiful, and reasonably priced. The group, led by Carroll B. Alker of the Seawanhaka Corinthian Yacht Club, reviewed a number of proposals, but

settled decisively on one from Charles Drown Mower.

Mower (pronounced as in lawnmower), a native of Massachusetts, had learned yacht design from the best practitioners of the day. In the late 1800s he'd studied naval architecture under Arthur T. Binney and began his career drawing dories for the racing fleets of Boston's North Shore. He also worked with the legendary B.B. Crowninshield, whose rich portfolio of designs included the Dark Harbor 17½-footers—one of the most enduringly popular knockabout sloops of all





CAPRICE was originally name OPAL II and owned by Charles H. Appleby. By 1939—the year of this photograph—she had been renamed HELJAK. Here she's outpacing Sound Interclub No. 1, which was then named ARIEL.

time. In 1911, Mower moved to Philadelphia, where he began designing for the New York market, and eventually became chief draftsman for the well-known Henry B. Nevins Shipyard on City Island, New York. He also served as the design editor for *The Rudder* magazine. Mower was an accomplished designer as well as a skilled draftsman with a wide-ranging repertoire by the time the New York consortium came to him with ideas for a new one design.

Mower's new sloop measured 28'9" overall, 19' on the waterline, and 7'6" at the beam. The approximately 6,000-lb hull (2,500 lbs of which was in the external lead ballast) was driven by 425 sq ft of sail carried in a colossal main and a tiny jib. Under this towering rig, the boats of the new class promised to be fast. And they were, indeed, beautiful.

Nevins built the boats—28 of them in all—over the winter of 1925–26 at the cost of \$2,400 each. That included one suit of sails built by Ratsey & Lapthorn, the great British sailmakers who by then had a thriving loft on City Island. To ensure identical hull shapes,

Charles D. Mower was a designer of wide-ranging talent who got his start on the North Shore of Massachusetts. He was, for a time, chief designer for Henry B. Nevins.



C.D. Mower's granddaughter, Holly Pastula, found this model of a Sound Interclub among a collection of her grandfather's belongings stored in her attic. The model is believed to be part of the original design proposal.

the whole fleet was framed on a single building jig. They had white oak keels, frames, and stem, and Alaska yellow cedar planking fastened with bronze screws. According to William Swan, who wrote about the boats in Edwin Schoettle's classic anthology, *Sailing Craft*, the execution of the construction, and particularly the solid mahogany trim, exceeded the specifications of the owners.

The class was named the Long Island Sound Interclub, or Sound Interclub, for short, for the boats were intended to race among various clubs on the Soundand beyond. Several owners bought them for their kids, and some installed toilets under a transom berth in order to allow short cruises. A few were never meant to race, but the vast majority of the 28 were keen competitors for more than a decade. Notably, several of the boats were shipped out to Bermuda on multiple occasions from 1929 through 1935 for team-racing championships against the Bermuda One-Designsa Burgess-designed sloop of similar proportions. The Sound Interclubs might also have been meant to race against their near-sisters, the Alden-designed Triangleclass sloops of Marblehead, though I've not found any record of that actually happening.

The New York Times of March 13, 1929, reported that four boats and crews had been chosen for the first of the Bermuda contests, which was to be sailed April 4–6 that year. The boats—AILEEN, JANE, ANNE, and BLUE STREAK—were then owned, respectively, by Cornelius Shields, Fred Gade, Walter Pierson, and Ralph Manny. All would be sailed by their owners—save for ANNE, which was under the command of William Swan. Lil-

lian Gade, wife of Fred, was on the crew roster of JANE, along with Charles H. Appleby, who was the original owner of Sound Interclub No. 12, OPAL II. Some 65 years later, OPAL II, by then named CAPRICE,

would grab my attention as she sat neglected in a Maine boatyard. I didn't know it at the time, but CAPRICE was one of only a handful of survivors of the once-great Sound Interclub class—and the most original.

In the autumn of 1993, a year or so after joining the editorial department of this magazine, I received a telephone call from technical editor Maynard Bray tell-

ing me of a forlorn 28' sloop sitting on land at a nearby boatyard. I was looking for a boat at the time. But, then, I was always looking for a boat in those days. Kid in a candy store, and all that. So Maynard and I went to inspect her.

What we found was a boat on the edge. The canvas cover had blown off the cockpit, and the bright-finished coamings had begun to weather and peel. The painted canvas decks were cracked and torn. Word around the yard was that the boat had sunk on her mooring. The owner lived far away, and had made an attempt at rehabilitating her, but his toddler son had knocked over a gallon of paint in the cabin, and he'd thrown up his hands in frustration and walked away. The boat was very much for sale.

There was no name on the transom, but a storage receipt found aboard identified her as CAPRICE, and a bronze builder's plate indicated she'd been built by Henry B. Nevins. The mainsail carried the number 12. Most astonishingly, all of her original hardware was in place. This included a pair of vernier-style winches mounted through the deck, with cranks in the cockpit and low-profile, inconspicuous wire drums on the deck; these were for fine-tuning the jib after rough-trimming it with the rope end of the two-part sheet. She was simple and unadorned, save for the elegant and understated mahogany trim around the top edge of her cabin (see related article, page 49).

I don't recall why, but I didn't buy her then. Instead, I bought a Triangle and spent the next several years rebuilding that hull in fits and starts, learning as I went. And the deeper I got into that project, the more the



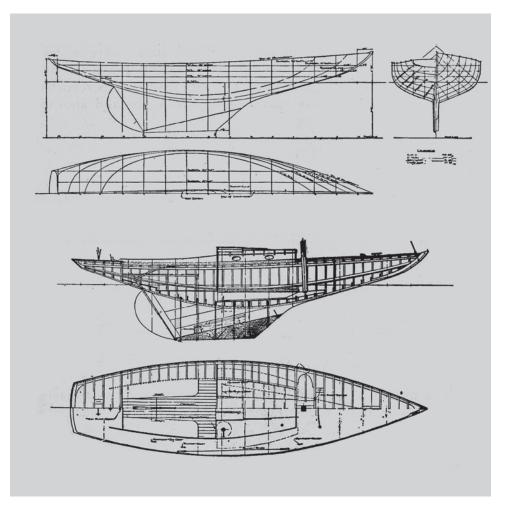
Beginning in 1939, ten or so Sound Interclubs migrated to Lake George, New York, where they raced for nearly two decades. Much of C.D Mower's archive was destroyed by fire. The only known surviving lines for the Sound Interclub are the ones shown here, which appeared in Edwin Schoettle's Sailing Craft, as well as in the design sections of The Rudder and Yachting magazines in 1925. Restorer Reuben Smith found these lines to differ markedly from the boat as-built, which led to a laborious process of documenting the true shape before restoration could begin.

vision of the more refined Sound Interclub haunted me. I kept track of her even after Bryan Kearns of Deer Isle, Maine, bought her. He had a soft spot for pre-World War II boats of any type, and was in the process of building a castle-like boathouse in which to shelter his growing collection.

In 1999, I heard through the grapevine that Bryan had decided to sell CAPRICE. I called him. He told me that

he was in fact letting the boat go, as he hadn't sailed her—he'd just bought her to see her preserved. To that end, he'd had her shrink-wrapped—a decision that clearly had saved the boat from further deterioration. Save for a hole punched in the bow by a careless trailer operator, her condition had not changed since my first encounter with her five years earlier.

This time I leapt at the chance. I sold the Triangle project and spent the following few months of weekends in Bryan's yard stripping and refinishing CAPRICE's hull, patching the hole, and removing the Wankel aircooled rotary engine from the cockpit. Later, during a particularly mild winter (T-shirt days in January) and working under a bow-roof shed, I stripped the decks of their canvas and re-covered them. I stripped the brightwork, cleaned up the interior a bit, and by spring she was ready—or ready enough. CAPRICE was launched in late June 2002, for the first time in 13 years. In a particularly poignant coda to this initial effort at rehabilitating her, photographer Benjamin Mendlowitz, patrolling the western end of Eggemoggin Reach, spotted us sailing under the Deer Isle Bridge on this maiden voyage and captured an image that would grace his Calendar of Wooden Boats the following April. Gimleteyed observers of that photograph have berated me for the fact that the jib is led through makeshift rope fairleads looped through the turnbuckles, as I'd not yet reinstalled all of the hardware. Summer couldn't wait.



Over the next few seasons, with proper jib fairleads, CAPRICE proved to be one of the finest-performing boats I've ever sailed. The exquisite proportions of her shape, superstructure, hardware, and rig are a metaphor of sorts for her handling qualities: She balances beautifully in a modest breeze, requiring just a finger on the tiller. And she ghosts along in the lightest of zephyrs. I recall one evening when I invited the yacht designer Paul Gartside for an after-class sail at WoodenBoat School. It was a near-windless evening, but the big rig drove CAPRICE through the slightest breaths of air. "It's like she's on ball bearings," Paul whispered incredulously.

But all was not well beneath, and I knew it was a matter of time before CAPRICE would need the big job. Years ago, she'd been sister-framed on the port side in order to repair a row of broken frames, and now the sisters were breaking, too. Although the planking remained tight and solid, the bronze fastenings were deteriorating. The lower edge of the cabin trunk was also suspect. I faced the daunting prospect of a rebuild while starting a family—and feeling the urge for a larger cruising boat.

And so I listed CAPRICE for sale, on-again, off-again, with no takers over the course of a few years. It was a tough sell: The boat looked fine from the curb, but she really needed a deck-off restoration. The sheer had flattened a bit amidships, and the hull would have to be tweaked to its original shape before she received

a complete and necessary reframing. She'd also need new floors, cabintop repair, and keelbolt inspection. I knew that giving her away might spell her doom, and dreamed of finding an owner who understood her value and who would commit to a thorough restoration. This would not be a job for the faint of heart—or finances. With no takers, I resolved to mothball her, as Bryan Kearns had done, and to restore her someday. That's when Reuben Smith called.

Reuben is a boatbuilder in Warrensburg, New York, and a native of the Adirondack region. We'd known each other for years, since the days when he rented the former shop of George Shiverick, a legendary 19th-century catboat builder in Kingston, Massachusetts. Before that he'd worked at the Hull Lifesaving Museum in Massachusetts, and before that worked from a box trailer aptly named Tumblehome Boatshop. He'd later moved, with his wife, Cynde, to upstate New York—his childhood home. When he contacted me in 2009, he was working for Hall's Boat Co. on Lake George, New York, and would later establish his own shop—Reuben Smith's Tumblehome Boatshop. His phone call unleashed a torrent of activity that would, ultimately, bring not only CAPRICE back to life, but the Sound Interclub Class as well.

Reuben had a client who had become enamored of the Sound Interclubs through a single photograph. This client, John Kelly—an IBM research executive and longtime summer resident of Lake George—had recently had Reuben restore for him a 1936 Gar Wood runabout. John, a dogged researcher in technology by profession, had assembled a file of material on the Gar Wood, and in that file was a photograph of the Gar Wood's original owner in a stunning sailboat. The sailboat caught John's attention, and he asked Reuben if he could identify it. "That's a Sound Interclub," Reuben said.

But what in the world was it doing on Lake George in the late 1930s?

ornelius "Corny" Shields was a stalwart of the Sound Interclub Class who'd made his mark sailing AILEEN (No. 25). On one of his many trips to Bermuda for the annual team-racing event in Sound Interclubs, he'd encountered a 6-Meter sloop called SAGA designed by the great Norwegian yacht designer Bjarne Aas. Shields was immediately taken with SAGA, and envisioned her as the basis for a new class of boat—a class of great beauty and performance that would

#### The Project of a Lifetime: The Restorer's Perspective

The restorations of CAPRICE and GHOST were once-in-a-lifetime projects. The demands of the client, the community of people who took a serious interest in the job, and of the boats themselves were higher than I had ever experienced. Every decision required an analysis before I felt the confidence to proceed. Although it was a daunting challenge to live up to these expectations, it was also a moment for which a boat restorer lives. We were fortunate to be able to tap some of the most highly skilled people in the greater wooden boat building community, including Jim Reineck and his bronze

MATTHEW P. MURPHY

MATTHEW P. MURPHY

Reuben Smith, who led the restorations of the Sound Interclubs GHOST and CAPRICE, enjoys an outing in CAPRICE on Lake George. GHOST is in the background. "The experience of being in one boat while looking at the other," says Reuben, "keying off the other, reacting to puffs, crossing tacks, is so much more than just sailing."

hardware; sailmaker Ben Sperry; fastening manufacturer Goulet Specialties; my boatbuilder-father Mason Smith; sailboat-restoration guru Andy Giblin; electric motor manufacturer Elco, and many more.

While I work in an industry where people are always excited by what we do, I have never been around a project that had aroused so much interest and excitement. Over the first few months of researching and starting the restoration of CAPRICE, an amazing array of people showed up with a history and passion for the boat. In fact, there was so much interest that we decided to hold a summit at Hall's Boat Corporation, in the winter of 2010, when the restoration was just barely underway. Fifty-odd people showed up from as far away as Southeast Massachusetts and the tip of Long Island—as well as from all around Lake George. We had Larry Jacobsen, who had sailed GHOST back in the 1950s; and Jerry Thornell, who logged hundreds of days sailing a Sound Interclub and dismasted one on Lake George. Dave Warren, Rik Alexanderson, Louisa Watrous, and the descendants of Hibbard Hall showed up with stories, photos, and even old home movies of the boats sailing. Not only were the boats out racing back in the 1940s, but we found photos of the Lake George fleet anchored in a quiet bay, rope ladders over the sides, towels drying on the booms, and a campfire on the shore. The community of interest created a climate of charm around the project, and fed a wonderful serendipity: When we needed an answer, or a part, it showed up, on cue, time and again.

—Reuben Smith



CAPRICE (foreground) required new frames, floors, and backbone timbers, but much of her original planking remained intact. GHOST was in far worse condition, and required near-total rebuilding.

entice sailors from all over the world to compete on an equal footing...an International One Design.

That was the birth of the IOD, which achieved its goal and has remained popular to this day with fleets in Scandinavia, the United States, Bermuda, the U.K., and Canada. The IOD's immediate appeal, however, spelled the end of the Sound Interclub fleet on Long Island Sound, as the best competitors from the older class defected to the new one.

Back when I owned CAPRICE, I thought the story ended there, and that the Sound Interclubs had scattered to the wind. But it turns out that more than a third of them went to Lake George. They were all sold for \$2,100, and several of them arrived in 1936 by railroad car; more followed soon after.

Lake George is located 200 miles north of Larchmont—the epicenter of sailing on Long Island Sound. The lake is 32 miles long and 1 to 2 miles wide, and is fringed by tall mountains and summer homes. Since 1909, it has been home to the Lake George Club—a golf, tennis, and sailing establishment. Sailing came to the fore at the club in 1934, when a group of General Electric engineers and local entrepreneurs brought in a fleet of used Cape Cod Knockabouts. A year or two later, they graduated to Star-class sloops, and by 1936 found themselves wanting something bigger and more challenging. The timing was perfect: the Sound Interclubs had just been listed for sale.

The class was an immediate hit on Lake George, and proved to be well adapted for the modest breezes there.

Hibby Hall, an entrepreneur and founder of Hall's Boat Company—an iconic Lake George boat-service facility—led in the standings for years in TEAL (No. 10). Harold Pitcairn in PICAROON (No. 21) was always nipping at his heels. It was a closely contested fleet through

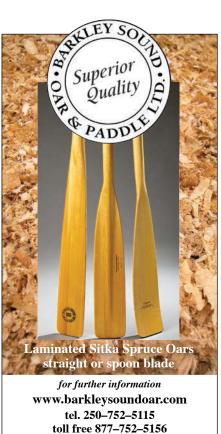


The newly rebuilt CAPRICE receives her finishing touches in 2011, while the barely visible GHOST just beyond her is still in the throes of restoration.



CAPRICE (right) and GHOST sail on Lake George, late summer 2014.





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1958—the last year of recorded racing results.

A few of the boats continued to sail on Lake George for years after the racing ended. Hall's TEAL along with NIGHT HAWK (No. 26) were sold to the Canoe Island Lodge, where they took resort guests on excursions through the early 1980s. Louisa Watrous, intellectual property manager at Mystic Seaport in Connecticut, grew up on Lake George and spent summers of her youth sailing expeditions in these boats. (It was she who documented much of the history retold here.)

After the early 1980s, the trail runs cold. The Canoe Island Lodge sold its pair of Sound Interclubs at that time, and then the rest of the fleet finally did scatter

John Kelly, owner of CAPRICE and GHOST, provided the vision and energy for the ongoing revival of the Sound Interclub class. To windward is Cynde Smith, wife and business partner of builder Reuben Smith.

to the wind. After that, there wasn't much talk about them. The Lake George Club had moved on to a succession of other one designs—Rainbows, J-24s, and then J-22s, and the old Sound Interclubs were all but forgotten, save for a few photos. "If there's a class that got overlooked," said Reuben Smith, "it's this one."

So, when John Kelly rediscovered the class in that archival photograph, he began a quest that led him to the boat under the bow-roof shed in my driveway in Maine. "I had never seen John like that," said John's brother, Mike, of John's commitment to that research project. "He wanted to know everything about that boat."

was thrilled for CAPRICE's future, and John was blown away by her originality. After he left, I packed the boat up and shrink-wrapped her for the long trailer ride out to Lake George, and I kept in touch with the project via photographs. The next time I saw her in person was at The WoodenBoat Show in



Sean O'Neill (dark shirt) takes a turn at the helm of CAPRICE, while John Kelly Jr. looks after the jib. Sean and Reuben have worked together for decades, in three different shops, and Sean was an indispensable part of the Sound Interclub restoration crew.

Mystic, Connecticut, to which John and Reuben had trucked her for display in 2011. They launched the boat and had her in the water and sailing around the show venue. And, incredibly, on a nearby trailer they had the partially restored GHOST a once near-derelict Sound Interclub that I'd inspected years before in Rhode Island and deemed too far gone to save. John had acquired

her soon after buying CAPRICE. The boats, both now restored by Reuben and crew, are identical stable-mates at John's home on Lake George.

But John's quest did not end there. In the years since he purchased CAPRICE, he has traveled thousands of miles chasing Sound Interclubs and their history. He's purchased one more of them, and is considering



another in the Lake George area, which he'd simply store as a reference. His third boat is AILEEN, arguably the most famous of the fleet—the one in which Corny Shields won so many championships on Long Island Sound. There's one other Sound Interclub still known to be in existence: BANDIT (No. 13). It was featured on this magazine's Save a Classic page in 2001 (see WB No.

"The Rite of Spring"

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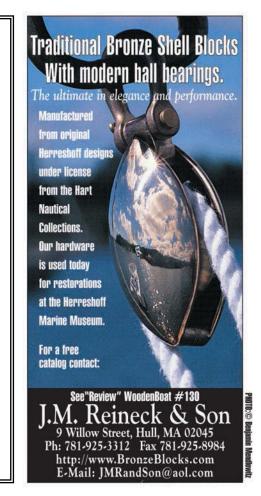
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159), and subsequently found a new home.

Up until 2005, there was one other Sound Interclub, SIREN (No. 27), which sailed from the Southern Yacht Club on Lake Ponchartrain in New Orleans (a total of five Sound Interclubs had made their way there in 1937). She sank at the dock in Hurricane KATRINA, and was declared a total loss. Louisa Watrous told me that, for weeks afterward, the lost boat's owner, Bobby Killeen, would go to the dock and look down at the water, mourning. John Kelly's interest in the class was "in the nick of time," Louisa said. "It came just before everyone with firsthand experience with the boats vanished."

The view from the cockpit: The Sound Interclubs have an unusually deep and large cockpit, while also having excellent visibility and comfort. Reuben Smith is at the helm, and John Kelly on the mainsheet.

It was not only the ownership and racing histories of the class that were on the brink of oblivion: The shape of the hull itself also hung in the balance. As CAPRICE's sheer flattened over the years, the boat's midsections began to straighten—a common occurrence in older boats, and one often made right by referring to the original drawings. But there were no surviving original lines for the Sound Interclub. There had been a set published in Shoettle's Sailing Craft, but Reuben determined guickly that these were not buildable—and that the forward sections were markedly shallower than as built. "This wasn't surprising," Reuben told me. He suspects that Mower may have deliberately altered the plans for publication, in order to deter plagiarism.

For John and Reuben, there followed a marathon project of determining the proper hull shape of a Sound Interclub. This led them to connect with Holly Pastula, granddaughter of C.D. Mower, who had found a model of her grandfather's in the space above her garage. John and Reuben suspect it is the original proposal model presented to Carroll B. Alker and his

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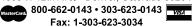
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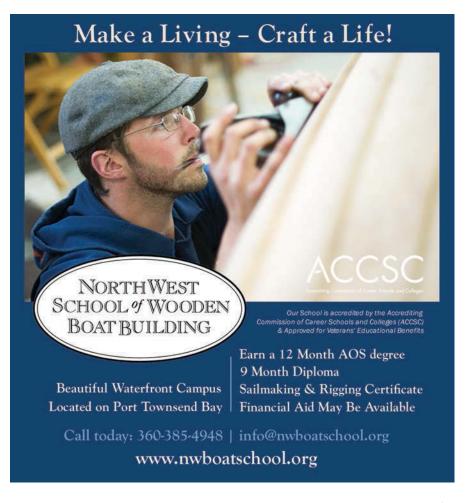
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CAPRICE in her element: 10–12 knots, and flat seas. The colossal sail plan drives the hull in the lightest of zephyrs.

compatriots at the time the class was conceived. This model, the measurements from CAPRICE, and some extrapolation culminated in the "truing" of the lines. "The shape is everything," Reuben said. "John is relentless. We probably spent 300 hours figuring out what it is." The resulting body of work is trademarked as "True ISC."

With the hull shape determined, the woodwork commenced. The crew at Reuben's shop began by removing CAPRICE's deck and slowly, carefully, adjusting the

shape. "We made the hull plastic enough to work it back into shape," Reuben said. He then placed three molds in the boat to hold that shape during its complete reframing with steam-bent white oak. The boat also received a new sprung keel of white oak, and a new trunk cabin—which was built by Reuben's father, Mason, at his shop in Blue Mountain Lake, New York.

There were no mysteries in CAPRICE's hardware or its placement. Period photographs confirmed that her existing complement was as it had been in her heyday. GHOST, however, had been altered, and would have posed deep challenges had it not been for the originality of her sister. "It really took CAPRICE to get a bearing on the details," John said.

CAPRICE's original rig had been lost in a boatyard fire years before I acquired her, and it was replaced with a beautifully built copy rigged with, presumably, the original hardware. This rig was intact, and required no modification. Sperry Sails in Marion, Massachusetts, made new sails for GHOST and CAPRICE from cream-colored Oceanus cloth. They are beautifully built, and are in keeping with John's aim for originality: They feel like canvas, and are built in narrow panels.



The stablemates, CAPRICE and GHOST, at the end of an afternoon on the lake.



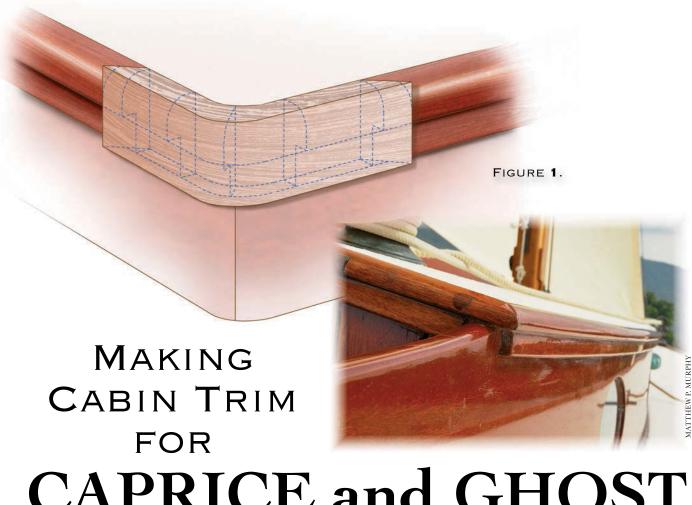
The mainsail is crosscut, the jib is miter-cut, and the boltropes and grommets are hand-sewn. For GHOST, J.M. Reineck & Son built copies of CAPRICE's vernier winches, and Elco supplied well-hidden electric motors for each of the boats—a necessity for getting in and out of the narrow slips from which the boats sail.

In September of last year, I made a long-discussed trip to Lake George to sail the restored boats. Settling in at the helm of CAPRICE brought me right back to that spring day in 2002 when, with a group of friends, I sailed her for the first time and Benjamin Mendlowitz recorded the moment for his *Calendar*.

The halyards and jibsheets all lead to the forward end of the cockpit, leaving the after portion clear for the helmsman and mainsheet. She accelerates quickly upon sheeting in the main and jib, and has an awesome feeling of momentum that belies her 28'. Once moving, she begs for just a finger or two on the tiller.

John asked me at one point whether CAPRICE is different from when I owned her. Impulsively, I told him she wasn't. The feel of the helm, the leads of the sheets and halyards, the ergonomics of her cockpit, the smell of the boat: It was all the same. Later, I was concerned that my answer might have offended him, given all of the thousands of hours of work spent on her and GHOST's rehabilitations. Clearly, she's cleaner and more crisp—and better maintained. But one of the things that drew me to CAPRICE in the first place was her originality and hard-won patina. John, Reuben, and crew have preserved that, while correcting her shape and eliminating the deep structural problems that would have soon spelled the end of the boat had she been kept sailing without rebuilding. Likewise, she may have slowly melted into the land if left ashore. She's restored, but she's not a new boat. She and her sister, GHOST, are the same boats that rolled out of the Henry B. Nevins yard in 1926, ready to take on the best sailors on Long Island Sound.

Matthew P. Murphy is editor of WoodenBoat.



#### **CAPRICE** and GHOST

ver the years, I've developed a deep appreciation for the trim around the top edge of the Sound Interclub's cabin trunk—a seemingly minor detail that has a profound effect on the boat's appearance. On most boats, this margin receives a simple half-round—or sometimes a rectangular-sectioned piece with chamfered corners. Either of these approaches functions just fine, but on many designs—especially one with the Sound Interclub's delicate proportions they can appear clunky and out of scale with the rest of the boat.

The Sound Interclub's delicately proportioned trim is, essentially, a half-round with its lower portion rabbeted away; in cross section it looks a bit like a capital Palbeit with the lower portion of the P's hump more flattened than that of the letter you're studying here. Its relatively simple shape makes a big difference visually. The outer corner of this trim piece also serves as a drip edge that prevents rainwater and dew from running down the cabinsides. The trim appears particularly elegant at the forward corners of the cabin, which are radiused. The corner piece must appear to wrap around this radius, forming a transition between the straight trim of the cabin sides and the cambered one that runs along the front of the cabin.

I wondered for years how the joiners at Nevins accomplished this simple detail that makes such a difference to the boat's overall appearance. So, when I heard that Mason Smith, a lifelong boatbuilder and father of restorer Reuben Smith, had been subcontracted to build new cabins for CAPRICE and GHOST, I asked him to describe the process to me. He wasn't sure that his approach was the same as Nevins's, but the results were. The following words and drawings show his method of accomplishing this job.

--MPM

Figure 1 (above)—The trim molding pieces for the sides and ends are straightforward to make—but the unusual corner pieces have to be carefully fitted to the rounded forward corners of the trunk cabin. Figure 1 shows the side pieces as installed and the corner piece installed but not yet sculpted to its finished outboard profile. The photo shows CAPRICE's trim, most of which was restored rather than replaced.

#### MAKING CABIN TRIM FOR CAPRICE and GHOST

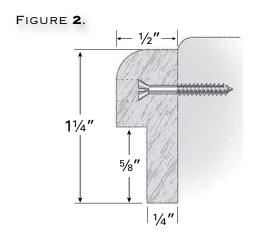


Figure 2—The rabbet in the molding extends one-half of the molding's thickness and one-half of its width. (It's not evident in this sketch, but the lower outside corners should be chamfered slightly.) Reuben Smith believes that the pieces' edges were originally quarter-rounded, but in the course of scraping and sanding during multiple refinishings over 90 years, the curvature flattened slightly, which is distinctive in its own way. Or, they may have been shaped to an eye-sweet profile. In any event, Mason used routers for rough cuts and hand tools to finish the pieces in a way that replicated the profile as he found it. All of GHOST's trim was replaced, but he was able to save most of CAPRICE's.

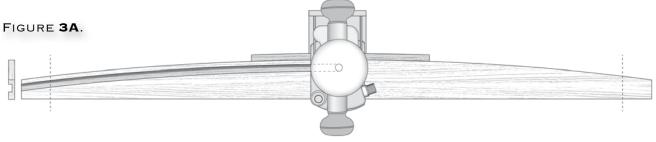
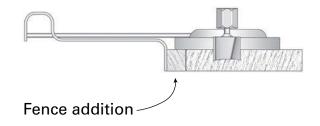


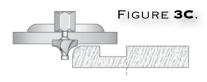
Figure 3A—The side, forward, and aft pieces of trim present no challenge and can be made with a router, as shown, followed by edge tools to reach the final dimensions. The side pieces are nearly straight. The forward and after pieces are made from straight stock sawn to curves matching the camber of the trunk cabin's roof. All of these pieces should be made over-length to allow material for final fitting later. A router fence easily holds the straight bit the right distance from the edge. It's best to use multiple passes, increasing the depth of cut each time. A curved fence addition matching the trunk cabin's camber (shown in Figures 3A and 3B, with the curvature exaggerated for illustrative purposes), can help hold the router in the right position all the way through to the end of the cut.

FIGURE 3B.



A second router cut (Figure 3C), using a simple quarterround bit, shapes the top edge. If necessary, a matching cambered piece can be clamped beneath the workpiece

to provide adequate bearing for the bit's roller. Depending on the router configuration, further stabilization might



be needed, most easily by fitting a broader base plate to reach across the full width of the face of the board. Later, the ends will be carefully measured for final cuts, shown as dotted lines in Figure 3A. The lower edge (shown as a dotted line in Figure 3C) can be cut on a bandsaw and finished with a spokeshave. Mason never cuts precisely with routers, preferring instead to finish the work with hand tools.

The molding on the aft end of the cabin (see photo, page 49), piece notches over the cockpit coaming, which extend forward to form the cabin sides. The aft molding joins to the side trim molding with simple miter joints. The side pieces should be left long at their forward ends. But before these pieces are installed, the forward corner pieces must be made.

#### FIGURE 4A.

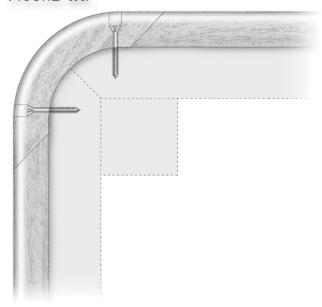
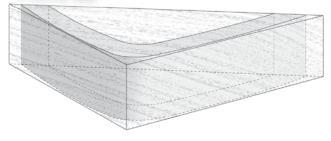


Figure 4A—The corner pieces, one of which is seen here from above as a finished installation, constitute the heart of the project, as described by Mason. (For simplicity, the drawing shows a nearly right-angle corner; in fact, the house side and front panels meet at an angle greater than 90 degrees.) To make a corner piece, he started with a carefully measured triangular block (Figure 4B), which is made quite a bit overheight to assure that its forward arm can accommodate the rise of the trunk cabin's camber. Working with a block of this shape assures that its ends finish out at, or very close to, 45 degrees, to form a short scarf joint with the side and end pieces.

#### FIGURE 4B.



Mason first used a bandsaw to cut the inside shape of the block. Before making any other cuts, he finished this inside face so that it would fit perfectly to the side and front faces of the trunk cabin, including its rounded-over corner. Once satisfied, he held the piece approximately in place and traced the outline of the roof directly onto the piece (Figure 4C). Taking

the piece away, he scribed a parallel line 1¼" downward from the traced line to mark the piece's lower edge. After cutting these top and bottom profiles and the rough outside curve, he screwed the piece into its final location, using deep counterbores to be sure the screws and their bungs would later be well clear of the rounded-over profile, as shown in Figure 4A.

Recognizing the risks of slipping with a router on

FIGURE 4C.

such a short and irregular work piece,
Mason refrained from finishing the outside profile until after the final installation, and as

we shall see he used hand tools exclusively to shape these sculptural pieces. Before finally installing the corners, therefore, he first needed to finalize the side and front pieces. While the corner pieces were still temporarily screwed in place, he scribed their ends onto the cabin side and front to show exactly where, and at what angle, the scarf joints would be. As described for Figure 1, he then cut the matching slopes into the ends of the side and end pieces and permanently installed them, with bedding compound. With those in place, he reinstalled the unfinished corner piece also well bedded. (This is the stage shown in this article's lead drawing, Figure 1.)

The task then became a matter of shaping the corner pieces to fair their rabbets and rounded-over top edges into the side and forward pieces. Mason first used a handsaw judiciously, then followed up with a rabbet plane and sharp chisels, plus rasps and files, paying careful attention to grain direction. The forward arm of each corner piece was carefully shaped to match the camber of its mating trim piece. To match the not-quite-perfect rounding on the top edges throughout, Mason worked the curvature with a block plane and rasps, as necessary, for a pleasing result.

## Motor boats

#### Nigel Irens and the fast and frugal power cruiser

by Nic Compton

lisse. If there's one word that sums up the work of the legendary yacht designer Nigel Irens, it's the French word *glisse*, meaning something that slides or is slippery—or, in other words, very, very fast. Little wonder Irens is revered as a design guru in France, having produced many of the most successful trimarans on the multihull circuit during the past 30 years, including iconic yachts such as ENZA NEW ZEALAND, B&Q CAS-TORAMA, APRICOT, FUJICOLOUR, and IDEC, to name just a few. During a long and illustrious career, he's even found time to dabble in traditional boat design, designing cult-status monohulls such as Roxane and Romilly (see WB No. 125), which proved that even the anachronistic lug rig could have glisse in the hands of a skilled designer. Now 68 years old, the master of intuitive design would be ready to slow down, you might think. If you did, you'd be wrong.

At first glance, his latest creation looks like the ideal retirement vessel: a 26' open launch with a plumb stem and a wonderfully clean, graceful profile. GRÉTA looks every bit like an updated version of those sturdy river launches that used to be commonplace on the south coast of England. And there he is, on YouTube, setting off with some of his family—for the evergreen Irens and his wife, Alison, have four children between them, ranging in age from five to sixteen—heading off from the

Cornish village of Polruan back home to Dartmouth in neighboring Devon. It's perhaps a little unusual to undertake the 50-mile coastal voyage, which includes two tidal races, on such a small open powerboat, but he's an experienced sailor and knows these waters, so you have to trust his judgment.

Something strange happens in the video. As Irens nudges the throttle open, the boat accelerates forward at an incongruously fast pace, smoothly and without the slightest commotion. It looks a bit like a speeded-up film clip, because surely that boat shouldn't be capable of going that fast and, if it were, then you should hear the roar of an engine and see churning water and spray as the boat hoisted itself up onto plane. Instead, there's just this graceful, seemingly effortless forward motion—you might say, glisse. Even without knowing the first thing about physics or the so-called "hull speed rule," you know something unusual is going on.

Welcome to the world of low displacement/length ratio, or LDL as Irens has christened it. It's a world where speed, fuel economy, and seaworthiness have come together in an unlikely alliance made possible by one of the most original and brilliant minds in contemporary yacht design. And, strange to relate, the revolution he's proposing will take place on the Dark Side: among motorboats.

## of the Future

'm on a personal crusade to help people understand that there doesn't need to be this huge cultural divide between a sailing boat and a well-designed motorboat," he says. "I believe a motorboat can give you real sense of well-being in the same way a good sailing boat does. If motorboats were more oriented toward the sensation of boat movement and sensuality...there wouldn't be this polarization."

In truth, Irens's design list does include a small roster of motorboats such as the 70' ILAN, which set an unrefueled round-Britain record in 1988, and the 114' CABLE & WIRELESS, which set a round-the-world record in 1998. In fact, for a few years he had the rare distinction of having designed the round-the-world record-holders for both power and (singlehanded) sail. Now, after nearly three decades of sailboat design, he is once again turning his attention to motorboats,

and he doesn't like what he sees.

The problem with motorboats, he says, isn't that they are intrinsically less appealing than sailboats, but that manufacturers (at the behest of buyers) have put all the emphasis on interior volume. While engines have become lighter and more powerful, rather than use that extra efficiency to reduce a boat's weight and increase its efficiency, they've simply piled on evermore gadgets and creature comforts and used the extra power to push more weight through the water less efficiently. The result is heavier boats with bigger and bigger engines and astronomical fuel bills. As he puts it: "Whereas designers of old had to work hard at reducing drag to improve speed with only modest power available, it is now possible to make even a boat shaped like an average house brick move along if enough power is thrown at it."



Facing page—Nigel Irens, well known for his record-breaking offshore sailing yachts, has designed a family of fast—very fast—and efficient motorboats that cruise at speeds well above the theoretical limit for displacement hulls. The boat shown here is the prototype Rangeboat (see page 56 and 57 for more detail). Above—With his wife, Alison, aboard, designer Nigel Irens steers his personal LDL boat GRÉTA along the shore of Dartmouth, England. With a waterline length of about 26', GRÉTA's theoretical hull speed is 6.8 knots. In reality, the boat cruises at twice that speed powered by a 13.5-hp engine.



Above—GRÉTA moored up in Newfoundland Cove, just east of Dartmouth. Her unassuming appearance and simple layout (see drawing) belie the fact that she was designed by one of the world's premier designers of high-performance yachts, and is deceptively fast and economical.

Perhaps more important, in terms of Irens's crusade, is that the physical enjoyment of motorboating diminishes in equal measure to the amount of weight that manufacturers pile on a (planing) hull. Not that a planing hull doesn't serve a purpose. He's surprisingly positive about the much-maligned RIB because the vast amount of power packed into such a small, lightweight hull means it can combine relatively deep V-sections with planing capability. Indeed, he goes so far as to say that a well-designed RIB can be a "formidable seaboat." But the equation simply doesn't scale up, and trying to drive a big motorboat packed full of modern conveniences which struggles to get on the plane is "about as exciting as driving down a motorway while firmly stuck

The nub of the problem is the hull speed rule, which insists the maximum speed of a displacement hull, in knots, is 1.34 times the square root of its waterline length in feet. Try to go any faster, and the stern will get sucked down, creating an enormous wash with no corresponding increase in speed. The usual way to overcome this rule is to design a hull which at high speed

will rise over the water and plane, thereby minimizing drag and allowing almost unlimited speed.

COURTESY OF NIGEL IRENS

But the hull speed rule is, it turns out, a rule of thumb rather than an inescapable natural law. As far back as 1894 the steam-powered TURBINIA proved that a long, narrow, and relatively light hull (in her case, 104'9'' LOA on a 9' beam and 44.5 tons displacement) can go faster than its designated hull speed, without having to plane. TURBINIA famously gate-crashed the Naval Fleet Review at Spithead in 1897 blasting along at speeds of up to 34.5 knots—a record at that time. Her designated hull speed was just 13.7 knots.

Taken to its logical conclusion, this approach would produce an incredibly skinny hull supported by a pair of floats, which is just what Irens created with his super-light and super-efficient motor trimarans (not for nothing does the name ILAN stand for Incredibly Long And Narrow). Job done, you might have thought. But while ILAN and CABLE & WIRELESS proved stunningly effective, they failed to catch on in the way Irens's sailboat designs have. After 10 years of trying to market the concept as superyachts, he finally had

in second gear."



GRÉTA's custom-cast bronze mooring line fitting replaces the conventional bow roller.

to accept that the inherent limitations of the concept (the 70'ILAN became crowded with only seven or eight people aboard) meant they only had extremely limited application. And indeed, his only subsequent order for this type of craft has been for three 141' offshore patrol vessels for the Mozambique government—boats with a required range of over 3,000 miles at 20 knots for which the trimarans would be ideally suited. But instead of multihulls, he delved back to his very first experiences of the sea and the origins of his devotion to fast, slippery boats.

hen I was a child, we had the good fortune to spend a lot of time messing about on boats in Salcombe in Devon. We used to rent these wooden launches, and I was completely fascinated by the speed at which they traveled. Some were a bit more shapely, with more sheer forward and more flare in the bow. They were probably better sea boats but they tended not to be quite so fast. But one or two were not like that; they had a slightly flatter run aft and were almost like river cruisers. They were generally faster. There was a varnished one called HERMIONE that was especially narrow and fast...."

In their way, these wooden launches that Irens loved so much as a child were attempting to cheat the hull speed rule too, albeit in a more modest way. Their main limitation was the weight of their traditional carvel or clinker construction, and their relatively heavy and inefficient engines. Fifty years later, however, these obstacles have been largely overcome, and it's possible to design a lightweight hull fitted with a lightweight engine that will minimize drag and go considerably faster than its hull speed without planing.

The basic approach of Irens's LDLs is to combine the narrow, wave-cutting entry of his trimarans with the beamy stern of a modern monohull. The fine bow (starting, in the case of the 26-footer, with an 8mm-wide cutwater) reduces drag, while the wide transom prevents the stern from being sucked down by steeply rising buttocks, and also provides the necessary stability.

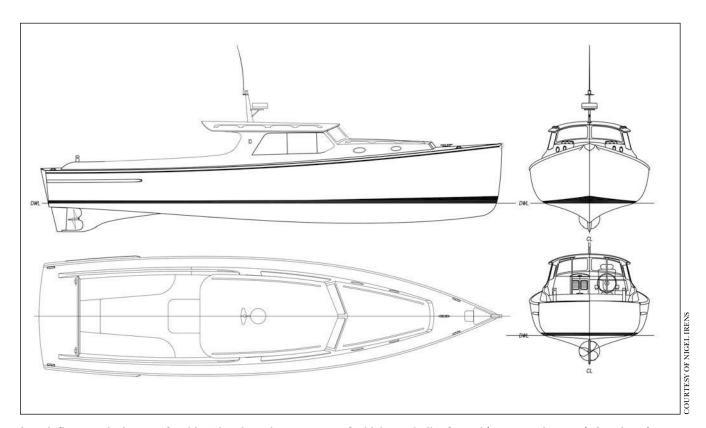
"In plan view, the waterline shape is almost a delta, a V shape," says Irens. "It's like taking the cardboard tube out of a toilet roll, and pinching it vertically at the front end and horizontally at the back end. The shape you get is a tetrahedron."

The result is an ultralight hull with more than its fair share of *glisse*, which, while not offering the high speeds produced by planing, does much better than a conventional displacement hull without compromising seaworthiness. The benefits are especially apparent in rough weather, when a planing boat will either pound the crew to smithereens or, if taken off the plane, get stopped dead at every wave. By contrast, an LDL boat will simply slice its way through and carry on regardless. And, because the hull is so easily driven, it can be powered by a far smaller, less noisy, and less thirsty engine. Which is good news both for the boater and the environment.

The first LDL boat was a 39' cabin cruiser built of cedar strips in 2003. With her large open cockpit and open-ended wheelhouse, her profile draws obvious



COMPTON

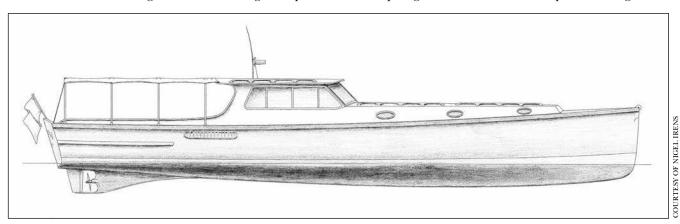


Irens's first LDL design was for this 39' cruiser, the prototype of which was built of wood (see opposite page). A series of composite-built boats, marketed under the name Rangeboat, followed.

comparisons with American lobsterboats, but the similarities end there. Fitted with a single 130-hp engine, she's capable of a 16-knot top speed and consumes only 4.2 gallons per hour while cruising at 14 knots—something a traditional lobsterboat (or at least its owner) can only dream of. After 10 years of cruising around the south coast of Brittany, IROKOA was recently bought by Sir Richard Stilgoe (best known for his lyrics in Phantom of the Opera) and will be based near his home in Devon, U.K.

Some 14 more boats were built to the same design under the name Rangeboat and, using composite construction, were even lighter and more frugal despite being fitted with luxuries such as a bow thruster, shower, and fridge. Elsewhere, another large LDL was built in Turkey and achieved 18 knots with a pair of 75-hp engines—not bad going for a 34-ton boat. And the type seems to have acquired something of a following in Holland, where three 45-footers were created by individual builders.

The concept does have its limitations as the center of gravity of LDL boats needs to be kept low, which means you can't add any weight such as decks or superstructure up high. Instead, the boats provide lengthwise



This is the initial pencil drawing of MOLLY BÁN, the largest boat yet built to the LDL concept. She measures 63' overall, and has a theoretical hull speed of about 10 knots. She can comfortably reach 18 knots.

56 • WoodenBoat 242

accommodation because LDL designs are, by definition, long and narrow. The advantage of placing the crew and passengers near the waterline is that the boat rolls around them rather than throwing them from side to side. The drawback is that marina fees will be correspondingly higher for the same volume of accommodation.

"The perfect use for an LDL boat is long-range cruising when you want to do with a motorboat what you've always done with sailing boat—that is, take your family and friends for a holiday and cover a few hundred miles, which it will do with no problem."

And certainly one of the biggest LDLs built to date, the 63′MOLLY BÁN, has been doing just that. Although this boat is capable of 18 knots (almost double her theoretical hull speed), owner Hal Sisk prefers to cruise her at 10 knots, a speed at which she consumes exactly 1 liter (only about a quart) of fuel per mile, or 10 liters (a little over 2½ gallons) per hour. Since she was launched in 2008, MOLLY BÁN has clocked 20,000 miles, traveling from her base in Ireland as far afield as Scotland, Denmark, and Sweden, and including two return trips to London.

Skipper Iain MacAllister says: "We have encountered bad weather a few times and find her to be a superb sea boat. To windward and downwind she performs like a modern sailing yacht, but without the slamming to windward in a chop. Perhaps the best example of her windward ability was a 2011 passage from Falmouth, Cornwall, to Baltimore, County Cork, where we knew

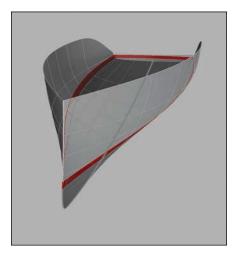
that after the Scillies the southwest wind would pick up to gusting Force 8. We averaged 9 knots for the voyage, only rarely having to slow for waves. In fact the only time she occasionally slams is in a quartering or beam sea where her flat quarters at times quite firmly correct any tendency to roll too much. Downwind her rapid acceleration allows one to play the waves if one wishes, and she does surf nicely, but that is unnecessary for a reasonably comfortable ride almost always using the autopilot. Interestingly, in port we are often asked if she is a sailing boat that has been converted to a motorboat, or if have we been dismasted."

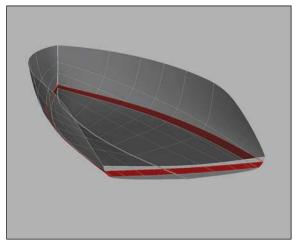
Irens is fond of describing his LDL designs as "motorboats for sailing people," who he suggests are more likely to want to be on the right side of the "eco divide." And it's surely no coincidence that Hal Sisk's other boat is a vintage sailing yacht: the exquisite 1894 George Watson–designed cutter PEGGY BAWN, which he restored in 2003–05 (see WB No. 202). But, despite the type's obvious environmental credentials, and the fact that the Rangeboat was offered with a hybrid diesel/electric engine, Irens seems reluctant to jump on the green bandwagon, which he feels is "open to abuse."

He has nevertheless designed an electric launch on LDL principles, which seems to prove the viability of the concept. The 24' ELEKTRA, built of foam/carbon composite and beautifully finished in oak, cherry, and Douglas-fir, bombs along at up to 15 knots on a 144-volt bank of batteries—considerably faster than the 10-knot speed limit on Lake Windermere, where she's based.



The Rangeboat prototype was built of cedar strips in 2003 (drawings, top of opposite page). She has a slight resemblance to Down East lobsterboats, but unlike a lobsterboat she can make 16 knots while consuming only 4.2 gallons per hour.



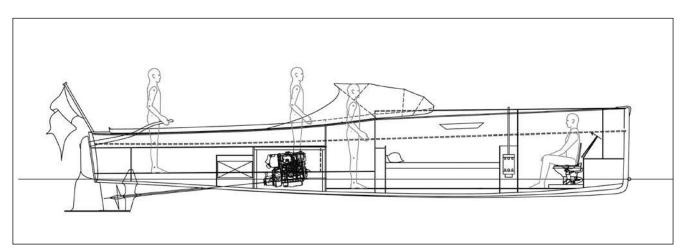


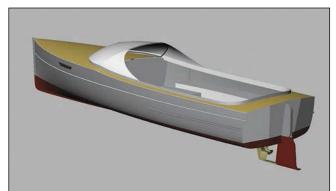
These wireframe perspective drawings are of the 24' ELEKTRA—an electric launch designed to the LDL concept. The composite-built boat is capable of 15 knots.

aving read the hype and seen the videos posted on YouTube, I was keen to get onboard an LDL myself, and so I jumped on a train to the West Country to meet with her designer. As we rowed out to GRÉTA where she lay on her mooring, I realized that my description of her as a "retirement boat" was deeply unfair. While the relatively high vertical stem was reminiscent of those launches Irens loved as a child, the boat's overall appearance was distinctly modern, despite the lapstrake plywood planking and tumblehome aft. The general impression was of purposefulness. Even as she lay at her mooring, she looked ready to leap forward at any moment.

When you're trying to cheat the hull speed rule, even the slightest drag counts, so after a lunch of wine and cheese in a cove just outside Dartmouth, Irens donned his swimming trunks and jumped over the side to scrub the bottom clean. It turned out he was experimenting with a new eco-friendly antifouling paint, which is essentially too slippery for weeds and barnacles to attach themselves to—although no one seems to have told that to the friendly little barnacles of the River Dart which needed a gentle push with a scourer to send them on their way.

With a clean bottom, we started tearing up and down the mouth of the river, and soon were clocking 11.3

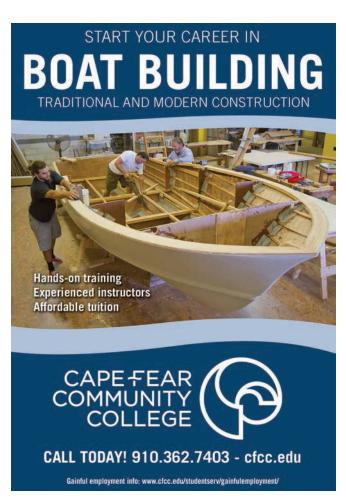






These drawings are for a new 31' motorboat with basic accommodations for short cruises.

58 • WoodenBoat 242



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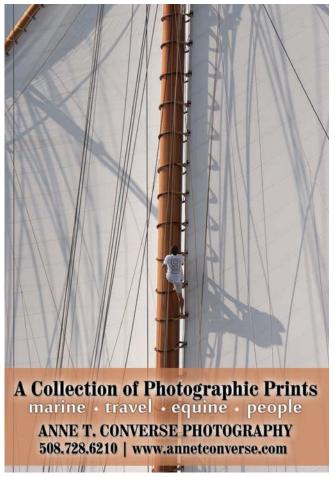
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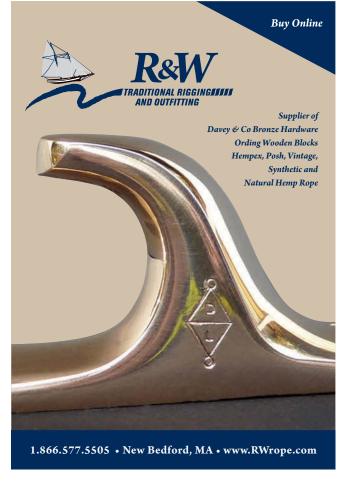
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#### Lunchtime aboard GRÉTA in a secluded bay near Dartmouth.

knots. With a waterline length of about 26′, GRÉTA's theoretical hull speed is only 6.83 knots, and yet here she was powering along at almost twice that speed under the auspices of a 13.5-hp engine. Magic, indeed.

There's something about traveling fast over the water that brings out the child in people, and certainly this was no exception. The only difference being that in most boats it feels like your spine is being attacked by a pneumatic drill and you have to shout at the top of your voice to be heard. Not so on GRÉTA, where

you can talk normally and where even going around a corner at speed is a comfortable experience because the wide stern keeps the boat resolutely upright. Not only that, but the bow wave and the stern wave meet about 30' behind the boat and cancel each other out, leaving nary a ripple.

Above all, there was that feeling I had experienced



while watching the YouTube clips of the boat moving faster than it logically should, which certainly put a smile on my face. And, judging by the slightly perplexed looks on the faces of people on other boats we passed, I wasn't the only one. Everyone, it seems, likes a bit of *glisse*.

"I'm not interested in speed for speed's sake," Irens





told me. "What I'm interested in is going at a speed that is unusually fast for the size of boat and the size of the power and the noise the engine's making. Nearly everything I've done in the way of a boat, whether it be a trimaran or a schooner or whatever, is all in some small way a celebration of slippery hulls which are easily driven and seem eager to go where you want to go."

He continued: "It's that sheer sensation I'm after, that's my fix, and secondary to that is how much fuel we've used. It pleases me that the boat doesn't use much fuel, but it pleases me just as much that it doesn't make much noise, and doesn't vibrate much. The important thing is that, after five hours in the boat with the engine running on the Dartmouth to Fowey trip, I had one of best days of my life."

The latest incarnation of the LDL concept is a 31' launch that Irens has designed for professional or experienced amateur construction. It's essentially a stretched version of GRÉTA, with the option of either a fixed wheelhouse or a soft top, and with space under the raised foredeck for a couple of bunks and a head. Fitted with a 30-hp engine, she should be capable of 13.5 knots, or 2.4 times her theoretical hull speed. The idea is to kit up and supply some key components, such the laminated frames and cast bronze P-bracket and stemhead fitting, in order to get builders started. After that, they would be free to do their own thing but would have to fulfill certain criteria to be officially recognized

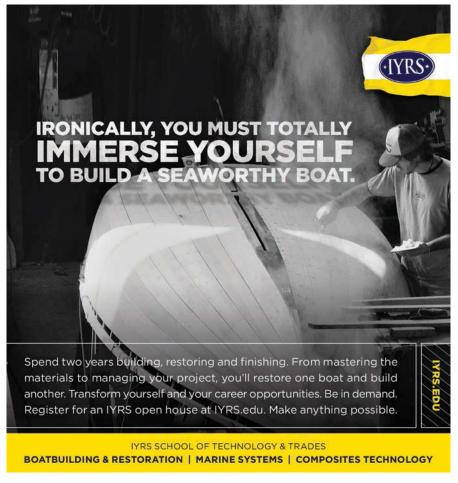
in the class. Irens is keen to create an online community of builders—both amateur and professional—with videos of boats under construction—and have an interactive forum that would not only provide support for fellow builders but would also help establish the class's pedigree.

As Irens talks, his passion for his new project is clear. Even though he's also working on the development of fast luxury cruising catamarans, the first of which was due to be launched the next day, he was just as happy talking about LDLs and the future of efficient motorboat design. "I'm constantly drawn to the fact there's work to be done on motorboats, whether it's for pleasure or work use."

It's not what you'd expect to hear from the doyen of racing trimaran design, but then Irens is not a person to stand still for long. Even at 68, he is still looking for the next challenge; the periphery where no one else is working because they don't yet know it exists. The only thing that's absolutely constant in his work is that it's got to have *glisse*, and that applies whether it's a sailboat or a motorboat, modern or traditional. The future of motorboating suddenly looks much more interesting.

Nic Compton is a freelance writer and photographer based in Brighton, U.K. He has written about boats and the sea for 20 years, and has published nine books, including a biography of the designer Iain Oughtred (published by WoodenBoat Books).







## A Strip-Built Baidarka

Simple beauty in a complex and highly functional kayak

#### Text and photographs by Rob Macks

Speed and seaworthiness were critical for the kayaks that Aleut hunters used for thousands of years to work the coastline of what is now Alaska. They ventured into some of the roughest conditions in the world: Low temperatures, very strong winds, and towering waves were routine for them. Early fur traders from Russia and Europe admired the Aleut boats, now commonly called *baidarkas*—the Russian name for them.

In 1992, I heard George Dyson, whose influential 1986 book *Baidarka* focused on Aleut kayaks, give a sixhour lecture on the type. I was riveted by it; because of my formal training as a sculptor, the shape and complexity of the baidarka immediately appealed to me. This kayak's voluminous bow and stern were similar to the shapes that modern whitewater boats, especially canoes, had evolved toward. I knew from experience (I had been paddling whitewater for 15 years) how well a boat with that shape would ride in big waves.

Dyson made what seemed to me to be some pretty extravagant claims about the capabilities and speed of these sophisticated skin-covered kayaks. If half of his

claims were true, I thought, a baidarka would still be an outstanding sea kayak, and one that could be adapted for wood-strip construction.

My first baidarka design, North Star, was inspired by documented kayaks and surviving boats at the Canadian Canoe Museum in Peterborough, Ontario; the Canadian Museum of Civilization in Hull, Québec; and the Smithsonian Institution in Washington, D.C., where I also had the opportunity to handle six Aleut paddles.

The North Star hull, bow, and tail closely follow Aleut shapes, but I made the hull round-bottomed instead of V-bottomed. A kayak meant to carry a heavy load would track well with the traditional V-bottom, but recreational paddlers rarely carry more than a lunch most of the time, and a lightly loaded boat is more stable if it is round-bottomed. North Star proved to be an exceptionally fast and straight-tracking design.

For the Shooting Star design presented on the following pages (and continuing in WB No. 243), I sought to make a slightly smaller and lighter boat. Shooting Star is 16'6" LOA, almost 2' shorter than North Star. However, Shooting Star uses exactly the same construction

Above—This 21st-century wood-strip kayak is an interpretation of the Aleut "iqyax" style of kayak, called "baidarka" by early Russian fur traders. These skin-covered boats were refined over millennia to achieve the great speed required for pursuing prey and the seaworthiness necessary to deal with the constant storms and towering waves around the Aleutian Islands in the Bering Sea. The woods used are western red cedar, mahogany, flame African cherry, flame maple, and ash. The boat weighs 32 lbs.

methods—with a few innovations.

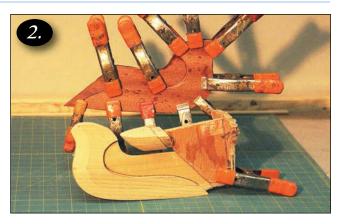
The first notable departure in this construction is thinner-than-usual strips, which save weight, make a more flexible skin, and ease the planking process. (The real strength of a strip-built hull comes from interior and exterior sheathings of fiberglass cloth set in epoxy, which has ample strength despite the thinner planking.) Another unusual process in this construction is the use of a heat gun when bending the strips. I also use a hot-melt glue gun for temporary holding in numerous innovative ways.

Over the years, I learned how quick a baidarka is to surf waves, how stable it is in rough water, and how it resists weathercocking or rolling in following seas. Like George Dyson, I developed a deep respect for these boats and the culture that created them.



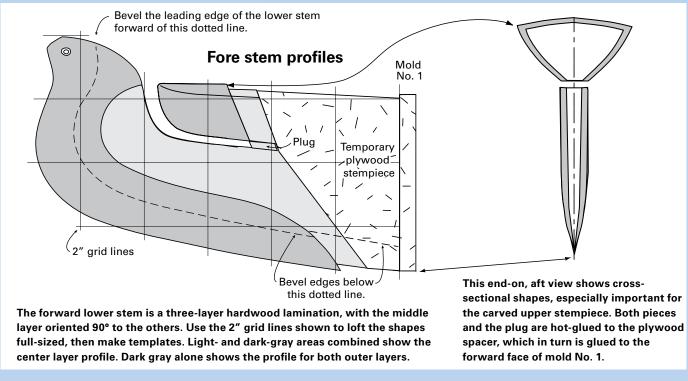
#### 1. The fore stem

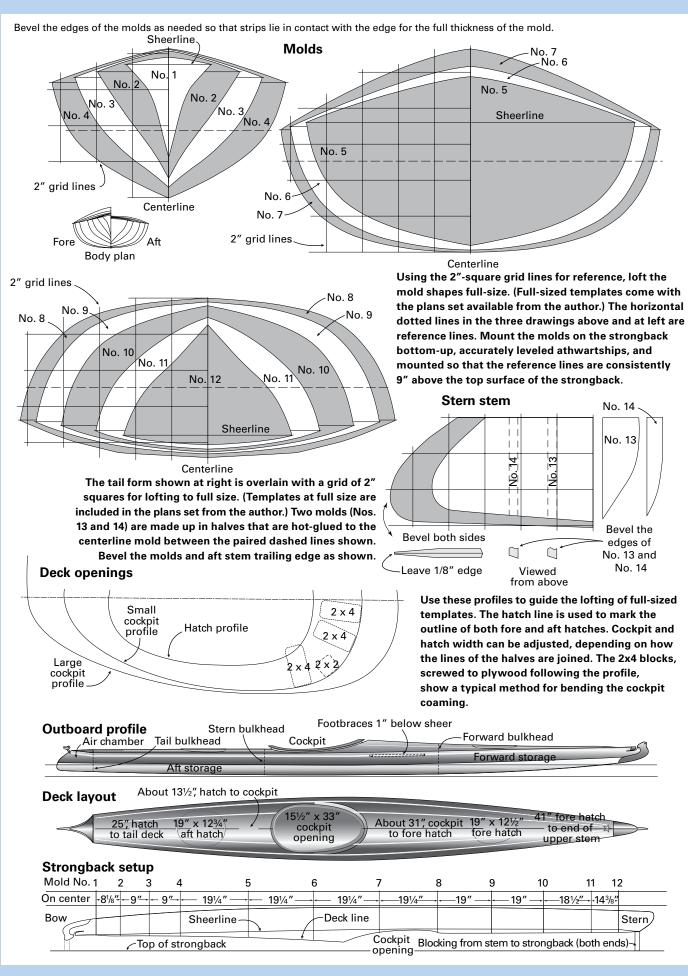
To build a wood-strip baidarka, I had to solve the problem of how to adapt the unusual bow and stern for this method of construction. For the lower part of the bifurcated fore stem (for which details are shown in the drawing below), I designed a three-layer lamination of mahogany. In this photo, the three pieces are glued up and beveled forward. A lighter-colored strip is being bent and glued into place in the recess, as shown, which will fair into a similarly colored hull strip to accentuate the bow's shape by contrasting with adjacent darker-colored hull strips.



#### 2. The bifurcated bow

To remain true to the baidarka's bifurcated bow, planking strips transition into the fore stem's permanent wooden structures. The upper bow piece is shaped from a solid block of wood, with recesses to receive plank strips. Using hot glue, a temporary plywood stem mold holds the parts in alignment, and its aft edge fixed, exactly amidships and perfectly vertical, to the forward face of the mold at station No. 1.







#### 3. Strongback setup

I use a plywood box-beam strongback, which is extremely stable. Blocks fastened to the top surface receive uprights to which the station molds, in turn, are fastened, resulting in the mold spacing specified in the drawing at the bottom of page 64. Note that because the hull is built upside-down, the molds are installed deck-side down. The mold plans all show dashed reference lines, 9" above the top of the strongback. Pay careful attention to getting the molds centered and plumb. The installation and bracing of the fore stem, shown here, and the aft stem, which comes next, will complete the setup.



#### 4. The tail piece

The baidarka's unusual tail shape is reproduced by sharply bending strips to fit to small half-stations glued to the aft stem form (details of which are shown in the drawings on page 64). A heat gun is an essential aid in bending and twisting each strip to conform to the tail shape. I use separate port- and starboard-side forms to strip-plank each half separately, which speeds up the process.



#### 5. Tail "cheater" strips

Strips that run the full length of the tail piece align in parallel along the aft edge of the stem. But because the shape of the tail is complex, with much more girth at mold No. 12 than at the aft edge, wedge-shaped "cheater" strips need to be inserted. A wedge-shaped opening, visible at left above as a new strip is installed, shows an example of allowing the strip to lie fair to the mold, leaving a space to be filled with such a cheater strip. Here and throughout this construction tack the strips to the forms with hot glue, and use yellow carpenter's glue to permanently bond their edges. Note that here, wood strips are "stitched" together with beads of hot glue spaced closely together along the seams on the exterior face to hold them until the structural glue sets. Compared with other methods, such as temporarily fastening with staples, this technique—which will be repeated throughout the construction—leaves the surface completely unblemished.

#### 6. Joining tail-stem halves

The tail halves are planked for all but the bottom-most couple of strips, which come later. Once this part of the strip-planking is done on each half, both sides can be removed from their forms. Sand the interior

surfaces. The two sides will now be joined on a separate form, this one built to accommodate both sides. Tack each side symmetrically to the molds with hot glue, and use carpenter's glue to join their aft edges together permanently.





#### 7. Mount the tail on the strongback

The tail stem assembly is set up on the strongback the same way the fore stem was, carefully centered and aligned. The tail stem strips left incomplete near the keel will allow full-length strips, running along the keel, to tie the tail firmly into the main strips of the hull. Once the fore and aft stems are in place and braced, the hull is ready for stripping.



#### 8. Hot-glue stapleless stripping

I use 3/16"-thick strips 3/4" wide with one edge square and the other given a 3° bevel on the tablesaw. This bevel allows the strip edges to mate flush for most of the hull and deck. At the turn of the bilge, some strips will need rolling bevels, which can be worked in with a block plane. Strips of this thickness and form are easy to bend, twist, and align, resulting in a fair hull. Strips are "tacked" to the edges of station molds using hot glue specifically formulated for use with wood. Hot glue is best thought of as a clamping tool, not for permanent bonds. Later, the molds are removed from the inside, and the key to releasing hot glue is to hit it hard with a hammer to shear it off cleanly. Small dots of hot glue work best. The glue sets in 90 seconds, keeping the strips firmly tacked to the stations, which ensures a hull shape true to the forms. When hot-gluing, spring clamps hold strips to the molds with consistent pressure, ensuring that the bond between strips and station molds will be strong and accurate.



#### 9. Prefit strips

Time and care devoted to prefitting each strip, as shown here, will result in more accurate results and less work in every following step. Use a heat gun to make the strips supple enough to bend so they can be twisted into place without force when cool. Use spring clamps to hold each strip exactly to the molds. For extra holding power for "rogue" strips, spring clamps can even be anchored with sheetrock screws driven into the molds. While applying bending force, heat the *inside* of the desired curve. Experiment for best results. If a strip is bent or twisted too far, it can be straightened by reheating. In all, 85 full-length strips are needed, including extra to ensure color match.



#### 10. More on heat-gun bending

Here, the strip is captured just above the area to be shaped by using a small spring clamp to hold the strip itself and two larger clamps to anchor the small clamp to the station mold. Placing a small clamp on the strip's end permits greater hand leverage during bending. Shape the strip by loading hand pressure into a small section of strip and twisting or bending the strip while applying heat with the heat gun. You'll feel the pressure release as the heat takes effect on the lignin in the wood. Work down the strip, shaping it to fit the molds perfectly without force. (Note that the strips here were lined off ahead of time to fair into the stempiece in a pleasing line.)



#### 11. Working with edges

Applying glue to the edge of a bottom strip on the hull can be difficult. I use spring clamps in various configurations to hold ready-to-install strips on-edge vertically, using the molds for support, so that the edge needing glue stands straight up. If you place your little finger alongside the glue bottle's tip, it will act as a guide to quickly apply glue along the length of the edge. Handspring clamps in conjunction with molds help in other ways, too, for example when holding strips that are ready for placement or when hand-beveling the edges. Long, unwieldy strips are easy to handle when part of the strip is always held by spring clamps.



#### 12. Hot-glue "stitching"

Once a new strip is shaped and glue applied for final installation, clamps are placed back in the same order as used in pre-fitting, assuring a perfect fit. Then, small beads of hot glue are applied, spaced 1" apart, along the entire length of the joint to stitch the strips together. In only 90 seconds, after the hot glue sets, all the clamps can be removed and work can proceed on the next strip.







#### 13. Using hot glue for supporting structure

As strip-planking continues down from the sheerline and out from the keel, the pieces don't always join on a smooth curve. This sequence of photos shows my technique for making this kind of joint a smooth one. I save short offcuts of flexible 1/6"-thick strips, which I hot-glue to the interior so that they are fair to the planking between stations, thus creating a temporary "bridge," which looks like an extra mold. In the first photo, I am placing the scrap strip in the gap and marking its location. In the second photo, the hot glue is applied, and in the final photo the piece is held in place inside the hull until the hot glue sets. The technique is especially helpful when holding the tip of a tapered strip.





#### 14. Remove glue beads, scrape, and sand

Use a scraper to remove hot-glue beads after the planking is finished and the permanent glue is fully cured. Hold the scraper handle high, knocking off glue beads like a hammer, as shown in the photo at left. If held too low, the scraper will skip, gouging the soft wood. Once the beads are removed, scrape away any glue remnants as usual. Rough-sand with a random-orbit sander using 60-grit to level the surface quickly, holding the sander as flat as possible and following the curves of the surface, as shown in the right photo. Wet the surface to raise the grain, then sand again with 120-grit, followed by 220-grit. Wet the surface again to detect any missed sander marks, then use a sanding block to go over the surface by hand as needed with 80-, 120-, and 220-grit.

#### 15. Sealing coat

Apply a single coat of epoxy to the bare wood while shop temperatures are falling to prevent bubbles from forming by off-gassing, which occurs when air is expelled from



the wood cells during rising temperatures. The reason for this coat is that bare wood and dry fiberglass cloth compete for resin in the "one step" wet-out technique, which can result in a less-than-transparent layup. The sealing coat, applied to the bare wood, stops the wood from absorbing too much resin when wetted-out.



#### 16. Wetting-out

With the shop temperature at 80° and falling, everything in the shop is the same temperature, so the epoxy resin is relatively thin. This thin coat of resin, with slow hardener, mixed in small 6-oz batches and applied to warm 4-oz S-glass fiberglass cloth, will produce a perfectly transparent and consistent wetout every time. Add three to four epoxy filler coats to the wetted-out fiberglass cloth. When these have cured, remove the hull from the strongback.



#### 17. Knocking out molds

Trace the mold locations on the inside of the hull planking. Now, knock out each mold with a *firm* blow of a mallet. This will cleanly release the hot glue holding the molds in place. Then, tack them back into place in the hull, using only a dot of hot glue at the sheerline. This will make the removal of the deck easier later.



#### 18. Starting the deck

Starting at the sheerline, fit and apply planking strips until they reach the sides of the cockpit opening, patterns for which are shown in two variations on page 64. Use the same strip-planking technique used for the hull: prefit each strip, clamp to the molds, and bend the ends as needed with a heat gun. Use carpenter's glue on the edges, then clamp the strips and stitch the joints together with hot-glue beads. Remove the clamps in 90 seconds and continue installing strips.



#### 19. Strips in way of the cockpit opening

The deck planking strips don't run over the cockpit opening area, so the forward and aft decks can be filled in separately with strips, continuing from the sides to the centerline. Make a template to the shape of the cockpit opening, and check to ensure that the strip ends extend into the opening, so they can be trimmed off cleanly later. Note that in the after deck shown above, the last full mold is in place, but the form used for the tail section is removed. The aft deck planks end at the mold; the tail deck is finished separately, later.



#### 20. Coaxing strips into place

The foredeck has a distinctive hump, reflecting the baidarka's heritage as a skin-on-frame boat, in which a centerline carlin held the skin tight and ended in a curve, creating a hump in the skin. This distinctive hump, visible in the photos on page 62, can be distinctly hard to strip. If the fine ends of tapered and fitted strips end in this area, they are likely to pop up instead of staying put. Hot-glued scraps bridging over the tips, as shown above, coax them to remain in place until the permanent carpenter's glue cures.







#### 21. Keeping deck strips in alignment

The tapered tips of fitted deck strips have a tendency to dive below the rest of the deck when they are unsupported between molds. Like the hull planking technique shown in the sequence on page 67, strips can be supported between molds by hot-gluing scrap strip "bridges" under the deck. Very near the tip, a  $\%6'' \times \%6''$  piece of scrap (barely visible as a light-colored strip close to the apex of the opening in the photos above) can be held in place with needle-nose pliers while the hot glue sets. In the top photo, an interior bridge is shaped and has hot glue applied. In the second photo, the bridge is held in place while the glue sets. The final photo shows how well the end is supported during dry-fitting.



#### 22. Trimming the cockpit opening

After the deck planking is completed, the cockpit opening is cut to shape. The plans set has a paper template, which is used to transfer the cockpit profile onto the planking; lacking that, make a full-sized template from the profiles shown on page 64. Before the cut is made the molds at the front and center of the cockpit must be knocked out to allow a jigsaw to pass. Knock out the center mold with a firm blow of a mallet. Knock out the station at the forward end of the cockpit by using a flat pry bar. There should be just enough room to insert the pry bar between the edge of the deck and the hull, in such a way that its edge bears against the forward face of the mold. Then, strike the pry bar smartly with a mallet toward the cockpit opening. Place the loose stations back in place to support the deck as you cut the cockpit opening to shape.



#### 23. Recessing the cockpit's leading edge

I like to recess the leading edge of the cockpit so it doesn't throw up spray when a wave washes over the deck. And I like the way it looks. To do this I draw lines parallel to the curved forward edge of the cockpit opening,  $2\frac{1}{2}$ " out. Using a utility knife with a new blade, I carefully cut along these lines to separate this recessed section of deck from the main deck.







#### 24. Strip-planking the cockpit recess

A small piece of deck has to be removed from the center of the recess to allow the recessed section to drop below deck level. As shown in the top photo in the sequence above, small scraps are temporarily tacked with hot glue to hold and shape the space between the main deck and the recess. Then, strips are shaped and fitted into the space, bonded to the deck and recess with yellow carpenter's glue, and tacked across their edge joints with hot glue, as shown in the second photo, until the space is filled. This structure may seem weak at this point, but the shape of this recess will actually reinforce the deck once the sheathing of fiberglass cloth set in epoxy is finished on both the interior and the exterior.



### 25. Stripping the tail deck

After the deck planking is finished, the deck is sanded, given a sealing coat of epoxy, then sheathed in fiberglass cloth set in epoxy, in the same manner as the hull. Remove the deck by using the flat pry-bar method, as described in photo 22. Knock out all of the molds by striking the pry bar sharply, working from the ends toward amidships, so the molds move toward a wider part of the hull. Carefully remove the deck and place it so that the narrow sections at the sides of the cockpit are not stressed. Replace the aftermost mold, No. 12, tacking it to the sheerline with hot glue, so the tail can be planked. This small section is on a different plane from the main deck—another bow to the boat's skin-on-frame ancestry—and it must be strip-planked separately. Strips are placed from the last mold over the top of the curving sheerline of the tail section, and they are left long. The ends of the strips that touch the sheerline must be twisted using a heat gun to fully contact the top edge of the sheer plank. These strips are applied in a manner similar to those in other parts of the hull. While the planks are long, the tail deck top surface is sanded, sealed, and 'glassed. After the sheathing is cured, trace the curves of the tail's sheer onto the underside of the tail deck, then remove it so the final outline can be cut on a bandsaw.



### 26. Cleaning up the interior

All the bridges applied inside the deck and hull with hot glue must be removed. This is done by using a scraper, as described in photo 14, and a mallet to firmly knock off the hot-glued bridging scraps. The hull and deck are very light in weight, so they need to be held in place somehow to resist the mallet blows. I use a 30-lb hunk of bronze wrapped in neoprene wetsuit material, the dark object shown inside the hull in photos 26 and 27. Once all the hot-glued bridges are removed, all excess yellow carpenter's glue must be removed with scrapers.



### 27. Interior sanding

The interior surfaces of the hull and deck must be sanded in preparation for interior glassing. I sand with a random-orbit sander, using 60-grit sandpaper on a soft *interface* pad, which will conform to the interior curves.

Rob Macks is the proprietor of Laughing Loon Custom Canoes & Kayaks in Jefferson, Maine. He has designed six different baidarkas, plus numerous other kayaks and canoes. Contact him at 344 Gardiner Rd., Jefferson, ME 04348; 207–549–3531; www.laughingloon.com.

Although completed boats can be built using the plans and information presented in this series, we strongly recommend that for the best results prospective builders should purchase full plans sets, which are available from the author. For the Shooting Star design, the plans set, at \$145 (plus shipping), includes full-scale drawings for molds, stem, stern, and other components, together with the author's manual, Building Instruction Book for Sea Kayaks.

For further reading, see Baidarka, by George B. Dyson, Alaska Northwest Publishing Company, 1986. See also The Starship and the Canoe, by Kenneth Brower, (Holt, Rinehart and Winston), 1978; and Qajak: Kayaks of Siberia and Alaska, by David Zimmerly (University of Alaska Press, 2000).



# A Dream Fulfilled

### Staying on-task for the charter boat DAVID B's conversion

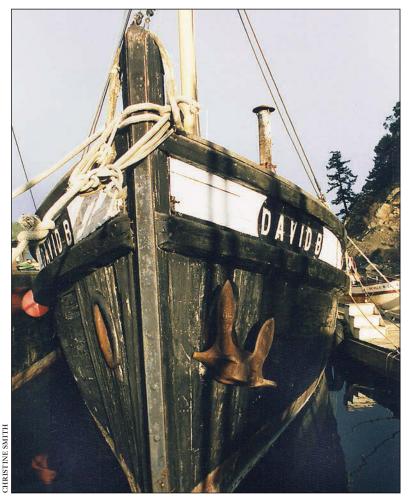
by Christine Smith

he secret to rebuilding a wooden boat, we have found, is the to-do list. My commitment to the list began in 1998, when my husband, Jeffrey, and I first saw DAVID B. Her owner had picked us up at the ferry landing at Lopez Island, Washington, and with him we stepped onto DAVID B's sun-warmed, tarcoated deck. Young, ambitious, and low on cash, we were looking for an old boat that we could afford. DAVID B was tired and worn. Her black hull paint was dull and peeling, her pilothouse was painted a dingy white, with roofing tar splattered around its sill, and her window frames were weathered soft and gray. Only

by letting your eyes go out of focus could you see that behind all that peeling paint lay a pretty boat.

As Jeffrey and the boat's owner talked about DAVID B's virtues and our plan to rebuild the boat and start a charter business, I began to look around and mentally prioritize what would need to be done. My experience with boats was limited compared to Jeffrey, who was already a licensed captain. I was a little skeptical but could imagine myself scraping off old paint, sanding, and giving her fresh coats. The words "scrape, sand, paint" are still a kind of holy trinity in my winter to-do lists.

As a passenger-carrying charter vessel, DAVID B has ventured to scenic areas of the Pacific Northwest and the Inside Passage, among them Fords Terror, a narrow fjord some 60 miles southeast of Juneau.



In 1998, DAVID B lay at Lopez Island, Washington, much in need of repair. The conversion that the buyers hoped would be completed in two years ended up taking more than three times that long.

was original. I knew it was perfect for Jeffrey, and in the same way that I knew Jeffrey was "the one" for me, DAVID B was "the one" for us. A couple of weeks later, we'd return to Lopez Island as her proud new owners. In the meantime, we prepared the first of our lists—tools, materials, camping supplies, all the things we'd need for the weekends and days off we'd spend getting the boat ready to bring to Bellingham, where we lived. Our plan was to have DAVID B ready for passengers in two years. Later, more lists would follow—marketing ideas, advertising ideas, applicable regulations. We would list specific projects, updating our tools and materials lists accordingly. Some lists were written down; others we kept in our heads, reciting them to each other as if recounting an oral tradition.

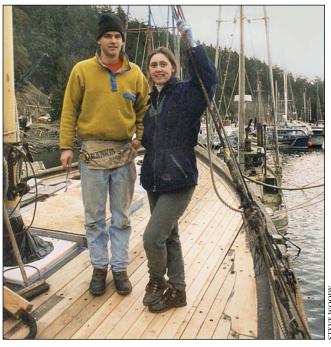
ur first task was to repair the foredeck so we could reinstall the heavy anchor windlass before leaving for Bellingham. The windlass had been removed years earlier and stored in a gravel parking lot, tipped on its side with tufts of grass and dandelions growing around its base. The

story was that while DAVID B was being used to service a heavy mooring stone, the windlass had been ripped out of the rotting foredeck, together with its bolts, pieces of deck planking, and bits of deckbeams.

On that spring day in 1998, I learned that the boat was built in 1929 at Lake Washington Shipyards in what is now Kirkland, a suburb on the eastern shore of the lake bordering Seattle. It was the same shipyard where my grandmother worked in the drafting department during World War II. I liked that connection. It helped me warm up to this aged boat. I also learned that DAVID B was commissioned by the Libby, McNeill & Libby Company cannery to work in Bristol Bay, Alaska (see sidebar, page 74).

When I entered the engineroom, I sensed for the first time that DAVID B would be ours. Clammy and cool, it smelled of a musty combination of semi-combusted diesel and stale bilgewater. In the dim light, I could see DAVID B's Washington Iron Works engine. I was 29 years old at the time and had little interest in or experience with marine engines, but I could tell that this one was unlike any other I had ever seen. It stood about my height—5'5". The engine, I had overheard,

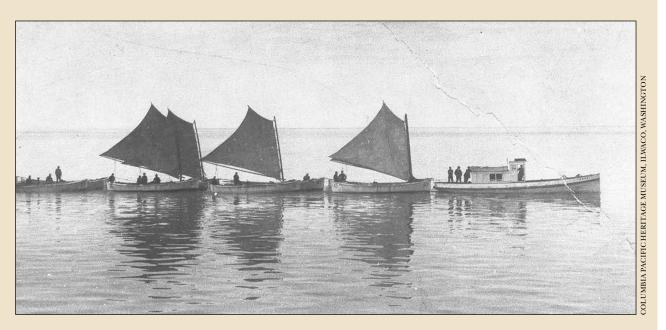
In the 1929 cannery "monkey boat" (see sidebar, page 74), Christine and Jeffrey Smith envisioned a vessel accommodating charter cruises to the San Juan Islands not far from their home in Bellingham, Washington, and ventures along the Inside Passage to the boat's old home in Alaska waters.



As our first work began, Jeffrey knelt down over a visibly rotten part of the foredeck, hammer in hand. Just before taking his first swing, he looked up at me and said, "Well, here goes." A dull thud sounded as the blow landed on the tar-coated plywood that covered the original Douglas-fir deck planking, which was more than 2" thick. After a few more swings, he asked for the circular saw, which he used to start a slice along a visible seam. We had hoped to find fir deck planks worth saving, so he made athwartships cuts only as deep as the plywood. Prying up the plywood with crowbars, we found the rot we expected in the foredeck. But working aft, we discovered more rot. Soon, Jeffrey reached for his reciprocating saw, which ate all the way through the soft deck planking with little effort, slowing only to

gnaw through an old fastening. By the time the mid-day June sun bore down on us, we were filthy with tar and rotten sawdust. The scope of our day's work was greater than we imagined, and so was our disappointment. Not only could none of the deck planking we'd exposed be saved, but neither could the underlying deckbeams. We stopped for lunch knowing already that our plans would have to change. Jeffrey gently suggested that we might need to replace not only the decking and deckbeams, but the beam shelf as well. The list expanded, and with it the time required to cross "foredeck repair" off our list.

We dedicated all our spare time to the boat. This included the 45-minute drive between Bellingham and the Anacortes ferry terminal and the 50-minute ferry



### A specialist in a short-term trade

t the time of DAVID B's construction, gill net fishing for salmon in Bristol Bay, Alaska—still one of the richest salmon fisheries on Earth—was only allowed under sail. Canneries kept fleets of double-ended, sprit-rigged sailing gillnetters, 25′ to 32′ long, to work the bay. More than a dozen canneries on Bristol Bay used these boats. Many of them were built in Astoria, Oregon, and other Columbia River ports, as a larger adaptation of the Columbia River sailing gillnetters, which in turn were an adaptation of earlier boats developed for salmon fishing in California rivers. Numerous Puget Sound boatbuilders also built sailing gillnetters for

A "monkey boat" with a hull profile very similar to DAVID B tows a string of Bristol Bay sailing gillnetters in Nushagak Bay, the same area where the converted boat was originally based.

the Alaska canneries.

Although fishing under power was illegal, motorized boats could be used to tow long strings of the sailing gillnetters out to the fishing grounds, where they would remain for perhaps six days at a time. These tow boats came to be called "monkey boats," each associated with a particular cannery. DAVID B was a monkey boat for the Libby, McNeill & Libby Company.

When the sail-only gillnetting restriction was lifted in 1951, the transition to engines followed very quickly; within only a few years, no more sailing gillnetters were at work on Bristol Bay. The era of sailing gillnetters was over, and with it DAVID B's usefulness. She was hauled out at a marine railway at Libby's Ekuk cannery at the mouth of the Nushagak River, and there she remained, abandoned, until 1981.

--CS



With the foredeck removed, Jeffrey took advantage of the opportunity to clean out the anchor chain locker.

another. I used to visit DAVID B in the mornings, feeling heartbroken and mentally apologizing to her for not making the time to do something, no matter how small. Time had become our biggest obstacle. The boat languished. Sometimes, the unexpected pre-

working 12-hour days, one after

Sometimes, the unexpected precipitates momentum. In 2004, the Port of Bellingham informed tenants that all boats would have to be insured. Because our boat wasn't

worth much as it was and because we never took it anywhere, we didn't see the need to spend what little money we had on insurance. Maybe we were a bit cavalier, but it seemed reasonable. Now, circumstances were forcing our hand.

First, we had to find a surveyor and schedule a haulout, both expenses we weren't really prepared for. Plus, we were going to face a lot of uncomfortable questions: Was the boat too far gone? Were we just wasting our time and money on a dream? How much would disposal cost? How could we afford an extended time in the boatyard? To me, the situation seemed hopeless.

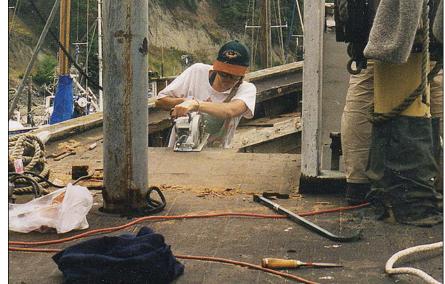
Part of the answer came a few days later. Around our Thanksgiving dinner table, Aaron Mynatt volunteered to partner with us. He had been working as a carpenter on custom houses, but he had received an inheritance and felt that he could gain experience not only on the restoration project but also by serving as a deckhand and engineer after we were up and running. The conversation sent a shot of adrenaline through my body. As it turned out, without Aaron DAVID B would be gone and its engine hidden away in some collector's garage.

ride between Anacortes and Lopez Island. We were lucky to be able to use the previous owner's workshop and yard space, but the routine became tiresome. In the wind, rain, and short days typical of a Northwest winter, the foredeck repair dragged on. Eight months later, under a beautiful clear February afternoon, DAVID B finally left Lopez Island.

We were sure that bringing her to Bellingham would help us check items off our list faster, and we added weekday evenings to the schedule. Instead, it seemed that if we had time to work on the boat we didn't have the money—or the other way around. We'd spent more on the foredeck than we'd planned; now it seemed that every time we started something new, we found more rot. "You guys didn't buy a boat, you bought a pattern for a boat," my mother joked on one visit, and we laughed at the sad truth of it.

We tried to stay focused, but the project was getting us down. It was way more fun to go skiing or trailrunning. While we struggled with the time-versusmoney dichotomy, Jeffrey took a job as a tugboat mate in Alaska. The idea was that although he'd be away for

several weeks at a time he would be able to devote larger blocks of time to working on DAVID B. In reality, he was often called back to work early, sometimes after only a day or two off. Meanwhile, the building where I worked had two ominous traffic signs at the entrance: Dead End and No Outlet. They perfectly described how I felt. Longing to never work at another desk, I started a small gardening business, hoping for the flexibility to work alongside Jeffrey when he was home. But soon I was

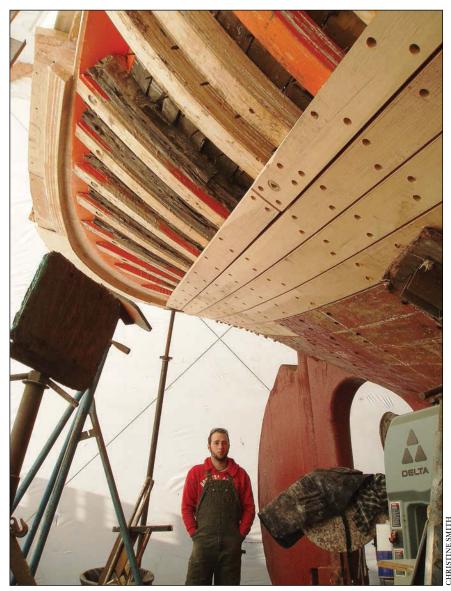


The author uses a circular saw to remove rotten areas of the foredeck in preparation for laying a new deck, the first project the couple faced.

Aaron Mynatt partnered with Christine and Jeffrey Smith in 2004, just ahead of an extensive reconstruction during haulout at Seaview North Boatyard in Bellingham, Washington, in spring 2005.

scheduled the haulout for December 4, 2004. We were nervous about it, and, sure enough, the owner of Seaview Boatyard in Bellingham was not impressed. The stern and mast were rotten. We had removed the bulwarks. Part of the hull had been sanded where we were working on plank seams. In spite of all our work, the boat was ugly. The yard refused to haul her until Jeffrey came into the office for a sit-down chat about dreamers and wooden boats. Jeffrey was given a memorandum of understanding to sign, stating that we had three months to prove ourselves or else the yard would have the boat demolished and send us the bill.

I had stayed away until the boat was hauled out, but now that she was out of the water there was work to be done. The bottom was covered with mussels and barnacles—about 2,000 lbs of growth. I drove into the yard with my empty landscape truck while the DAVID B was still in the slings, dripping, and began loading mussels into the back of the truck. The boat looked impossibly big.



## "Why this boat?"

The simple question—"Why?"—might be the most common one people ask about DAVID B. In the beginning, my answer was always that we could afford the boat. Now I realize the answer is not so simple. DAVID B and others like her working in the charter business are more than just old wooden boats. These boats have charisma and personalities that appeal to people. Through DAVID B, we've grown a community of people who share a common love of the boat and pride of association. They know that by booking a cruise aboard DAVID B, they help maintain the boat and keep history alive.

The community that surrounds DAVID B has been the best surprise. I would never have anticipated how much the boat means to people. Whether it's someone who stops by dockside to admire the boat, or the guests who've had old photos of the boat restored, built her a medicine cabinet, or had new coffee mugs shipped to us with a lovely Navy-style crest, DAVID B has proven itself to be something that people care for and continue to return to.

Before we began running DAVID B, I didn't think that the boat itself would matter much when people where deciding to come cruising with us. I've happily discovered that DAVID B does matter to people. I've seen pride in our guests' faces when we pull into a dock somewhere and people ask about the boat and its history. While the upkeep of an 85-year-old boat sometimes seems overwhelming, having a historic wooden boat as the centerpiece of our business is something I would never want to change. It has become way more than "just what we could afford."

--CS



During a six-month haulout in 2004–05 laminated sister frames were installed, along with about 1,000 bd ft of new planking. This was the most extensive project since DAVID B's purchase in 1998, and by the following summer she was ready for her first charter customers.

Aaron joined us a few days later. Our progress satisfied the yard, and for the next six months we worked all day, every day. Our surveyor was cautiously optimistic that the boat could be saved. He and Jeffrey organized a list of projects—new planking in the stern, new rim log, new frames. Three things. Simple.

We decided that Jeffrey and Aaron would focus on frames and planking, and we hired a boatbuilder friend, Greg Krivonak, to take on the rim log replacement. Those days were long but satisfying. Friends and family offered to help by painting, making bungs, bringing pizza. DAVID B pulled many people together. Soon, I noticed that in the end-of-the-day cleanup I was no longer sweeping up rotten wood but instead the bright curls of shavings from freshly planed new wood. The depressing, musty smell of rot and fungus was replaced by the scent of Douglas-fir and fresh paint.

hen DAVID B was next in the slings, ready for relaunching in spring 2005, I was struck by her transformation. She truly gleamed. We were far from done, but our progress won us an insurance policy that allowed us to stay at the Port of Bellingham. Even though the interior needed to be built and all systems installed, I could say for the first time since we owned DAVID B that she was indeed a beautiful boat.

Our first charter booking came in December 2005, for an Alaska trip from Juneau to Ketchikan we had scheduled for July 2006. At the time Jeffrey took the call, we still didn't have any cabins or systems. All we had belowdecks was a cast-iron bathtub and empty space. Suddenly we had a deadline. With mid-April set as a drop-dead date, by which we'd have to complete the work or cancel the charter, we hired several boatbuilders and scheduled a launching party. Those months





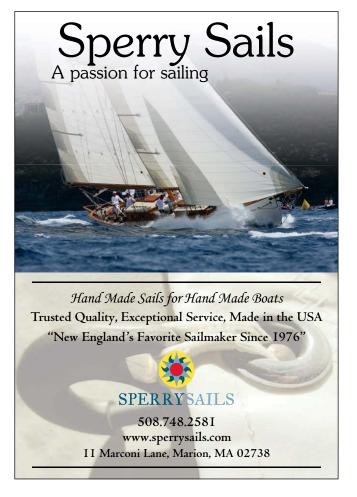
Above left—The original Washington Iron Works three-cylinder diesel engine still powers DAVID B. Above right—Belowdecks, the layout had to be transformed from industrial utility to a comfortable excursion boat for six passengers plus crew. During the 2005 haulout, Jeffrey built a bulkhead to separate the engineroom from the soon-to-be-built staterooms.

were a swirl of sawdust, paint and varnish fumes, and cheap beer. Friends and family continued to help. We held sewing bees and paint parties. Our 800-sq-ft house was filled with helpers who came to spend a few days. Many mornings on the way to the kitchen to make coffee, I had to tip-toe between sleeping bags. First thing

each morning, Jeffrey and I made lists for the day to keep everyone going, and he made frequent trips to the hardware store.

For years, DAVID B had been the eyesore of Gate 5 in Squalicum Harbor, but by mid-April 2006, people were regularly pausing to admire her and congratulate







The galley, equipped with a new wood-fired cookstove and saloon table, forms the heart of the boat. The projects continue, for example with last year's rerouting of the exhaust stack, which eliminated the column from the middle of the table.

from a friend. At the masthead was a green pennant with white lettering—DAVID B. "Pennant" was never on any of our lists—it was a surprise from Jeffrey that still makes my eyes water. We'd accomplished something, a dream that seemed impossible.

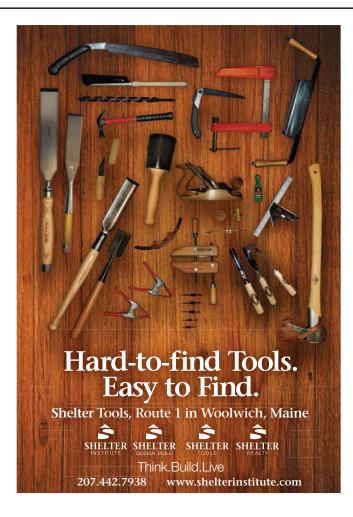
Roughly 16 years after buying DAVID B, Jeffrey and I still go over our lists together over coffee, as always. One month from begining of our charter season, we still have winter projects to wrap up amid the beginning of spring outfitting. When I feel overwhelmed, I like to step

back, pour another strong coffee, find a pen and paper, write down the list—then pick something, and simply do it.

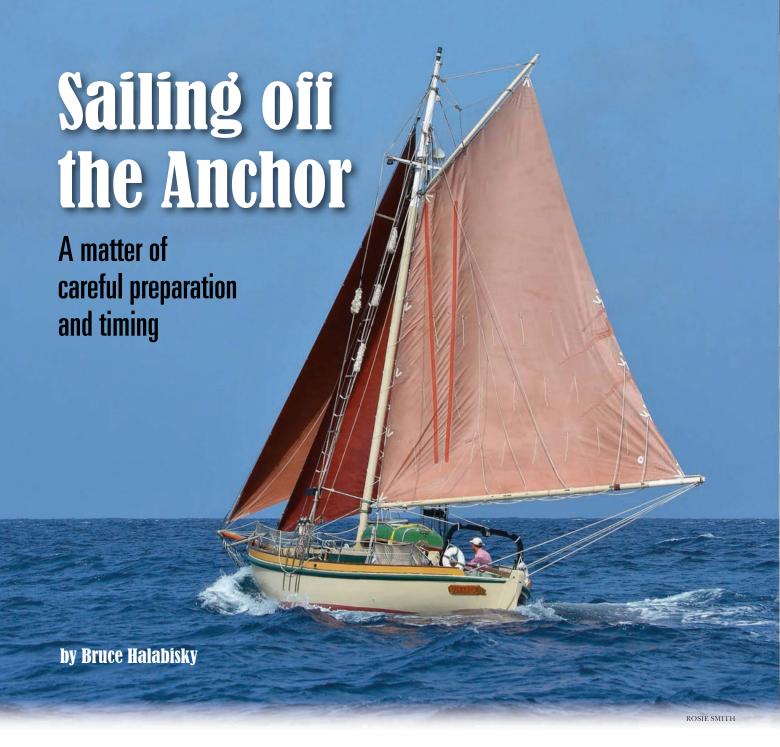
Christine Smith is the co-owner, chef, and naturalist aboard DAVID B (see northwestnavigation.com). Her 2012 book, More Faster Backwards: Rebuilding DAVID B, won the 2013 Journey Award for narrative nonfiction from Chanticleer Book reviews.

us for our hard work. DAVID B was ready for something new.

Launching day marked the end of the restoration work and the birth of our business. We planned a catered celebration alongside a dock in a nearby park so we could give tours. I was setting out pictures of the rebuild and working with caterers when Jeffrey and Aaron brought the boat over, flying signal flags on loan







The anchorage in the lee of Anegada in the British Virgin Islands is one of picture-postcard Caribbean beauty: white sand beneath 15' of baby-blue seawater with steady tradewinds from the east. Frigate birds fight with boobies and terns over the abundant schools of fish, and every so often a turtle pokes its head above the waves to take a breath and have a quick look around. My destination for the day on VIXEN, my 34' gaff cutter, was Jost Van Dyke, about 24 miles away on a broad reach. There seemed to be no good reason to start VIXEN's engine to leave the anchorage; sailing

off the anchor on a port tack would give me an easy departure to open water.

Sailing off the anchor is a good way to keep up one's seamanship skills. It is usually easier than sailing into an anchorage (see WB No. 227), and the sailor who sails off the hook will in general be more aware of the wind and currents than a sailor who pushes a button and starts the engine. There is also more excitement to be had: Anegada's striking beauty belies the fact that over the centuries this low-lying coral island and its projecting Horseshoe Reef have wrecked more than

Above—After raising anchor under mainsail and staysail and later raising the jib, the author settles into his course from Anegada for Jost Van Dyke, both in the British Virgin Islands. The boat is VIXEN, a 34' Atkin gaff cutter.

300 ships. Although I often sail VIXEN off the anchor, on this particular morning I had in mind Anegada's grim history and took some extra time preparing for my departure. Adding to my wariness was the fact that I was alone without my wife, Tiffany, aboard.

"Whatever happens," I reminded myself, "I do not want to be on a starboard tack when the anchor releases from the seabed." On a starboard tack, VIXEN could be driven onto the sandy banks of Anegada in about 30 seconds. Because the shore was less than 100 yards away, it was unlikely I would be able to gather enough way to tack back over to port. My options would be to wear ship and jibe (there didn't seem to be room to do this), drop the anchor and try again (probably the best option), or resort to starting the engine.

I had 100' of chain out, so the first step was to haul in about half of it with the windlass to reduce my scope to a 3:1 ratio. It's true that with this shortened scope VIXEN might start to slowly drag her anchor in a gust, but I was planning to depart in 10 or 15 minutes and it seemed helpful to haul in the bulk of the chain before the sails were set.

The next step was to raise the gaff mainsail, taking time to correctly tension the throat and peak halyards with some slack in the mainsheet. Now VIXEN came to life as the sail shook and filled; she started tacking back and forth, tugging at the anchor chain. At this point, if the wind had been stronger than the predicted 15 knots blowing from the east I would have taken the time to tie in a reef or two. I also opened the engine's raw-water seacock (just in case), untied the tiller, and turned on the sailing instruments and VHF radio. While the main flapped back and forth overhead, I took one more look at the chart and noted a rough compass bearing that would send me clear of any reefs upon leaving Anegada.

I hauled in an additional 20' of chain so that I had out only about 30' in 15' of water—a 2:1 ratio.

VIXEN was poised and ready to go. I just had to raise the staysail, which would be the key to departing on a port tack. I waited until the last possible moment for this step, because once raised, the sail would flog madly until I got under way. If the wind had been stronger, I could have "sailed out the anchor," although it would be difficult to do this single-handed. Normally, this would involve raising the staysail, sheeting in the main, and actually sailing up to the anchor through a series of short tacks, with Tiffany steering and tacking while

With the anchor rode nearly vertical after being shortened to a 2:1 scope-30' of chain in 15' of water-the staysail is raised. In a moderate breeze, even a solo sailor can sail off the anchor. Intending to depart on a port tack, the author waited until the boat swung to port, after which he could use the last hoist of the anchor, with judicious backing of the staysail, to bring her bow back through the eye of the wind and sail away on a port tack.

I hauled in the chain. In fact, when the wind blows so hard as to make it difficult to haul in the chain, we would normally start the engine and motor up to the anchor.

But on this morning off Anegada there was no need to start the engine or to "sail out the anchor," so with the staysail still lowered I cleated off its sheet on the starboard side at about the position needed for a broad reach and then raised the sail. Instantly that staysail came to life, snapping and thrashing the sheets. Standing clear of the sail's clew, I took my time to coil and hang the halyard, then went forward for the final operation.

I used to back the headsail to get on the proper tack while the anchor was still down, but what would inevitably happen was that the final tug on the chain would throw the bow over to the wrong tack. I have now come to the conclusion that the best tactic is to wait until VIXEN is headed the opposite direction from which I wish to depart—in this case pointing right at the beach—and then with a final haul on the chain and judicious backing of the staysail I can bring the bow through the wind and over on to the desired tack.

I waited patiently, despite the racket of the flogging sails, until VIXEN had the wind over the starboard side and was pointing toward the Anegada beach. Then I hauled in the last bit of chain, which pulled VIXEN back onto a port tack. All this was made infinitely easier by VIXEN's electric windlass, without which, in certain



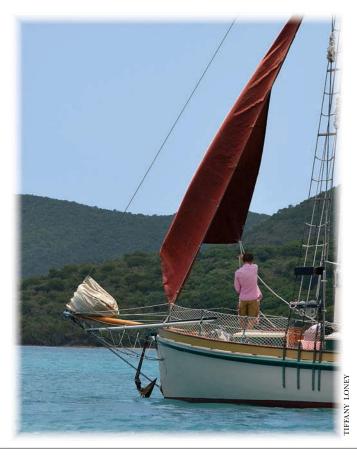
conditions, this would remain a two-person operation.

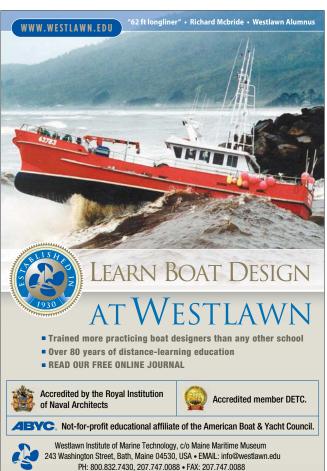
Once the anchor was off the bottom I grabbed the clew of the staysail and leaned far over to port to back the sail and help bring the bow on course for Jost Van Dyke. When I was sure VIXEN wouldn't tack back over to starboard, I brought up the anchor until it just cleared the water, then scampered back to the helm to ease out the mainsail and push the tiller to windward while noting the compass heading I had worked out to clear any reefs.

Now the chaos of the flogging sails transformed into an ordered driving force: VIXEN surged ahead. The only task remaining was to get the anchor aboard and secured before we reached the bigger waves. I quickly set up the self-steering control line (see WB No. 221), then went forward to take care of the anchor and scan the foredeck for any loose gear.

On a gaff cutter, it is particularly important to have the main sheet ready to run when sailing off the anchor. The mainsail on VIXEN is so large relative to

Certain of the boat's swing over to port tack, the author hauled the anchor to just clear the water's surface. Then he brought the staysail over to starboard before returning to the helm, where he eased the mainsail and put the tiller to windward to power up on port tack.









Having secured the anchor on deck while still in protected waters, the author was free to raise the jib at his leisure. Both operations were simplified by the use of a steering line led forward, allowing helm control from the foredeck while sailing solo.

the staysail that if it is sheeted in tight at a time when a gust comes up it can become impossible to turn downwind, even with the tiller thrown hard over; easing the mainsheet quickly is the best solution. I vividly remember one remote Indonesian atoll where disaster was only narrowly averted when the mainsheet jammed. This nearly drove VIXEN up on the coral, where she most likely would have remained.

But on this day, VIXEN was not destined to become an addition to Anega-

da's catalog of wrecks. She cut her way cleanly toward Jost Van Dyke. Far above, frigate birds wheeled across the sky while below VIXEN's keel the white sand of the Caribbean disappeared beneath ever deeper shades of blue.



Bruce Halabisky is a boatbuilder and sailor who for the past 10 years has been making a meandering circumnavigation of the globe in a 34'7" Atkin cutter with his wife and two young daughters (see vixensvoyage.com). He is a regular contributor to WoodenBoat.



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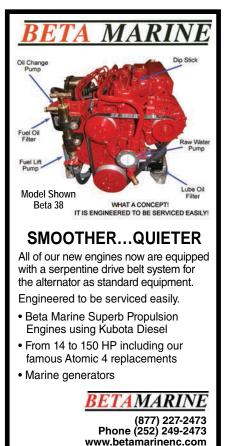
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### WOOD TECHNOLOGY



## Tracking Legal Timber from the Tropics

### by Richard Jagels

n a series of WoodenBoat columns I wrote in the 1980s, I discussed some of the problems facing tropical forests: land clearing for agriculture or other development, unsustainable logging (especially by large concessionaires), and widespread uncontrolled fires in places like Borneo.

At that time, Rainforest Action Network (RAN) and some other environmental organizations were advocating boycotts on all imported tropical woods (see Wood Technology, WB No. 94), while my position and that of the International Tropical Timber Organization (ITTO) was a more nuanced, complex approach political involving education, action, and the establishment of small-scale, model forest manage-

ment systems appropriate to individual countries (see WB No. 90). Fortunately, the latter approaches have prevailed, and for the most part they have met with success. The non-governmental organization (NGO) that I have been involved with, GreenWood (see www.greenwood global.org), has been successfully operating in Honduras for over 20 years.

I am proud of our accomplishments, for example in helping indigenous communities in Honduras manage forests sustainably while also providing their families with an income through the marketing of wood products ranging from chairs to guitar parts. However, recent events in the country have dampened my enthusiasm and cast a pall of gloom over the future. The culprit is narco-deforestation: illegal logging driven by the drug trade.

I have been somewhat reluctant to bring up the subject in this column, but a recent letter has prompted me to tackle this disturbing predicament facing many Latin American countries. Reader Susan Gateley wrote: "I am wondering if it would be possible to revisit the topic of illegal tropical hardwoods and how boatbuilders could avoid same again. I know it's been addressed in the past, but in light of the headlines about the brutal murder of Ashaninka Indian leader Edwin Chota by illegal loggers, I am curious to know if there has been any progress in the tracking and identification of illegal woods imported to North America. Is there any way people doing repairs or new construction can



avoid this lumber? Are the current labels and tracking programs credible? A 30-second survey of the Internet via Google suggests illegal logging in the Amazon remains a huge problem. We boat folk might be a small market, but I wouldn't want ANY of that blood-stained wood in MY boat! Thanks for trying to educate people about the problem."

### **Drugs and Timber**

The murder of Edwin Chota was covered by The New York Times, but many other examples of threats, intimidation, and murder have been quietly occurring in many Latin American countries. In Honduras, our GreenWood communities have been threatened and a forester murdered. We have had to develop plans for possible evacuation of key personnel.

Much of the rampant violence is driven by the narcotics trade. Wellarmed drug lords typically enter a remote forest area and clear enough timber to make a landing strip for small planes. Then, they cut trees to sell on the illegal timber market, which they often control with bribes to corrupt officials. In the process, they build roads for the movement of drugs and timber. Finally, they launder drug profits by establishing cattle ranches or palm oil plantations on deforested land.

Quite often, these activities occur on "protected" land. Just in the year 2011, 183 sq km of forest was destroyed in eastern Honduras, much of it in the Rio Platano Biosphere Reserve, a UNESCO world heritage site. According to The

A forest in Honduras was logged in 2011 for conversion to cattle-grazing land. In recent years, illegal timber harvests have been intertwined with drug smugglers.

Nature Conservancy, "Each year more than 32 million acres of natural forest are logged illegally." Because the United States is one of the world's largest wood consumers, it is inevitable that some of that illegal lumber reaches the U.S. market.

In WB No. 235, I discussed CITES (Convention on International Trade in Endangered Species) and the U.S. Lacey Act—especially the 2008 amendments. Together these are

helping to reduce illegal wood exports from tropical countries and reduce imports of illegal wood into the U.S. market.

### **Deceptive Tricks**

However, for these laws to be effective, lumber and logs being exported must be carefully screened by government inspectors at exit ports, and similar diligence is needed at entry ports in the United States. Although unlike drugs lumber is not easy to hide during shipment, it can be falsely labeled. One trick is to mislabel a CITES-protected species by relabeling it as a species not on the list of species banned for export. Or, lumber that has been illegally logged can be mixed with legally logged lumber. Unless wood is diligently tracked from the forest to its final destination, opportunities abound for deception. Add to this the difficulties in accurately identifying tropical woods—even by trained inspectors—and we begin to see the scope of the quandary.

### **Solutions?**

For decades, the trade in illegal drugs has flourished despite massive efforts to thwart it and even with long jail sentences for captured offenders. Fewer resources have targeted the illegal lumber trade, and punitive measures have been weak. And now that illegal drugs and wood are becoming intimately entwined, any reduction in trade in the near future seems slim at best.

At the consumer level, solutions are

somewhat limited. The best approach is to purchase wood, when possible, that has been stamped by one of the international certifiers approved by the Forest Stewardship Council (FSC). One of the FSC's roles is the certification of forest management, for which it has specific requirements. But the FSC also plays a key role in "Chain-of-Custody Certification." In this capacity, wood is traced from forest to end user. FSC states: "Any company in this supply chain, including harvesters, processors, manufacturers, distributors, printers, retailers, or anyone that is taking ownership of the forest products before the end user, needs to be FSC certified to be able to label or promote their products as FSC certified." Within the United States, ten organizations are approved FSC certifiers (see https://us.fsc.org/ certifying-bodies-in-the-us.221.htm).

While FSC certification is the ideal solution, not all legally harvested wood is FSC certified. In some cases, the cost of getting certified is a limitation. In other cases, the time and difficulties involved in getting certified are beyond the means or inclinations of a company or community. In these cases, one must rely on the reputations of dealers—with the caveat that some illegal wood may slip through the cracks.

### The Future

GreenWood has been exploring two other ways of tracking timber from source to consumer. The first involves a collaboration between Helveta Ltd., a software company based in Abingdon, England (www.helveta.com), and Taylor Guitar, a guitar manufacturer based in El Cajon, California (www.taylorguitars .com), in which a barcode tag with GPS coordinates is attached to the stump of each tree harvested, and similar tags are attached to logs and lumber as they move through the supply train to the consumer. This is still in the early stages of development. A second project involves DNA analysis of mahogany wood in collaboration with a genomics laboratory at New Mexico State University. The hope is that distinct genetic populations will be identified that occupy limited geographical locations—which is, admittedly, a long shot.

In January 2014, Helveta announced the launch of its latest timber traceability software, Elements Wood, which publishes what the company calls a "Digital Passport" for each consignment shipped to the European Union, the United States, or Australia. Perhaps this will prove to be another tool in the kit for

thwarting the importation of illegal wood.

During the past few decades, the key measures that have been instituted to reduce the trade in illegal timber have led to significant progress. Now that the drug trade is becoming enmeshed with the illegal timber trade, the future is less rosy, but not doomed. As individuals, we can all try to be as informed as possible about sources of lumber we purchase. **.** 

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.

# 2015 CALENDAR OF WOODEN BOATS\*



PHOTOGRAPHS BY BENJAMIN MENDLOWITZ

That's the *Lewis R. French* on the cover. Built in 1871, she's the oldest commercial schooner in the US. Inside you'll discover eleven more beautiful boats, including several you've probably not seen before, like the Joel White designed 42' glass cabin launch, or *Belle*, a 16' daysailer designed and built by Daniel Gonneau. And as always, interesting background captions from maritime writer/historian Maynard Bray. Opens to 12" x 24".

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# LAUNCHINGS

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 a boat within the past year, please email us at launchings@woodenboat.com, or write us at Launchings, WoodenBoat, P.O. Box 78, Brooklin, ME 04616.

Please include the following information:
(1) the boat's length and beam; (2) the name of its design class or type; (3) the names of the designer, builder, owner, and photographer; (4) your mailing address along with an email address or phone number; (5) the port or place of intended use; (6) date of launching; and (7) a few sentences describing the construction or restoration. (8) Send no more than five photographs (jpg images at 300 dpi) and enclose a SASE if you want anything returned.



Seeking a boat big enough for three fixed-seat rowing stations, Burton Knapp admired the Chamberlain Gunning dory in John Gardner's book, *Building Classic Small Craft* (available from www.woodenboatstore.com). When a friend heard about this, he gave Burt a partially completed Chamberlain dory for which a second friend had made the frames. Burt eagerly took on the project and launched it on his birthday last year.



MISS B is a Rambler 26 built by Harry Bryan and Wyatt Lawrence (www.harrybryan.com) for Scott Bailey of Plymouth, Massachusetts. An extended version of Bryan's Rambler 16, MISS B is traditionally built of cedar planks riveted to oak frames. Powered by her Westerbeke M3-20B diesel, she'll make 11 knots. Harry and Scott launched her and conducted sea trials last April at Naushon Island, Massachusetts.



Angus Rowboats, started by Colin and Julie Angus, is a fledgling kit-boat business in Victoria, British Columbia. The couple's first designed kit is this 15'10" Oxford Wherry 16, built from okoume plywood and Bolivian mahogany. The 53-lb wherry has a 'midship thwart for rowing, but can also be set up with a sliding seat. Contact Angus Rowboats at colin@angusadventures.com.



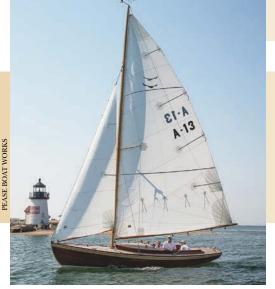
Fifteen years ago, sailmaker Frank Van Zoest of Groningen, Netherlands, took Joel White's Shellback dinghy design, straightened the stem, tweaked the lines here and there, and then turned it over to naval architect Klaas Bes to fair his efforts into the sailing dinghy of his dreams. Three years ago, he was finally able to start building, and launched the  $17' \times 5'$  LUCIA last May. Contact Frank at info@oarandsail.nl.



The Italian word fidanzata means "girlfriend," a name David Wooddell calls his wife of 16 years and his new 16'9" kayak. FIDANZATA is a Redfish kayak (www.redfishkayak. com) built from western red cedar, Alaska yellow cedar, and walnut. David launched her on the Patuxent River in Maryland last May. He paddles her on Chesapeake Bay and its surrounding estuaries.

Arnie Egli devoted six years of his life to building BARBIE, a 26'5" Cuddy Sport sportfisherman that he launched last summer in Winchester Bay, Oregon. He modified Ken Hankinson's design (www.glen-l.com) a bit, lengthening the hull from 24' and adding an enclosed wheelhouse. She is built of sapele, meranti, and white oak. Arnie and BARBIE fish off Oregon's coast.





Pease Boat Works (www.peaseboatworks.com) recently launched MYTH, a reproduction 1912 Alerion-class sloop designed by Nathanael Herreshoff. Alfred Sanford of Sanford Boat Company (www.sanfordboat.com) made several modifications to the design, the most significant being cold-molding the hull and adding more ballast to compensate for the difference in hull weight. MYTH sails out of Nantucket, Massachusetts.

In 2001, John Carter, Sr., of Audubon, New Jersey, had his boat displayed in Launchings. His son, John Carter, Jr., wanted his own boat in Launchings, and at age 15 built a Minimost hydroplane from plywood and epoxy following plans by William D. Jackson (see www.muskokaseaflea.ca). John, Jr. also bought a 1951 Mercury Super 5 outboard and got that running as well. Like father, like son!

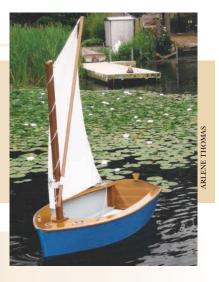


JEFFREY CARTER



Amelia and Dennis Murphy of New Hyde Park, New York, spent a week last summer in Jeremy Gage's class at WoodenBoat School learning to build a Shellback dinghy. The father-and-daughter pair took the halfcompleted hull home to New York and finished it that fall. They launched it at Great South Bay, Long Island, last November. Find out more about kits and classes at www.woodenboat.com.

Art Thomas of Lacey, Washington, had plenty of resources in building this 5' Guppy sailing dinghy: plans by John Burroughs, directions in *How to Build 20* Boats (1964, Fawcett Publications), and Burrough's book GUPPY—A 5-ft Sailor. The hull is made from 6mm and 18mm okoume plywood, with white oak for the tiller, rails, trim, and chines. The Guppy was a birthday present for a boy turning six.





After Ken Snyder of Salem, Oregon, read Sam Devlin's book on stitch-and-glue boatbuilding, he bought plans for a Candlefish 16 (www.devlindesigningboatbuilders.com). Ken spent one year building the fiberglass-covered plywood boat. She's powered by a 15-hp Honda outboard. Ken cruises on Oregon's lakes and waterways. Devlin's Boat Building Book is available from www.woodenboatstore.com.

Frank Russell designed and built this 16' × 7' asymmetric catamaran. The 190-lb POLYNESIAN BEACH BUGGY is 1/4" lauan plywood, covered with 6-oz 'glass and epoxy. He designed it to be paddled, pedaled, sailed, or motored (with its 6-hp outboard). Frank spent three months building the hull during his winter migration to Florida last year. For more information, contact Frank at 802–758–9276.





Don Rolph of Montague, California, built this 8' flyfishing pram after reading about Winfield Thompson's Wee Pup in WoodenBoat (see Nos. 199 and 224). LITTLE DOG weighs 60 lbs and was built stitch-and-glue from epoxy and plywood. Don 'glassed the bottom and installed flotation chambers, gear bins, and a dry box. Though meant for rowing, she'll take a trolling motor. Contact Don at dandrolph@gmail.com.

Denman Marine (www.denmanmarine.com.au) in Tasmania recently launched this 23'solar-electric riverboat, ESC.KEY. She's strip-planked western red cedar with celery-top pine structural timbers. Decks are teak, trim is Tasmanian blackwood and Huon pine. She carries a Mastervolt Drive 3.5-kW 48V AC motor and a 450Ah 48V AGM battery bank, fed by 1,000 watts of solar panels on her hard top.



# RELAUNCHINGS



Tom Hill took the lines from the original Jericho Bay Lobster Skiff, designed by Joel White and built by Jimmy Steele, to build the cedar-strip model described in *WoodenBoat* Nos. 210 and 211. Paul Kessinger bought that 40-year-old cedar-and-oak hull in 2010. He epoxied on a layer of thin diagonal cedar planking and Xynole to better suit the hull for storage on a trailer, and launched her last summer near his home on the Connecticut coast.

In 2008, Richard Nissen found this rowing shell, built about 1895, in the rafters of a friend's garage. The hull is lapstrake Brazilian cedar on frames of rock elm. Richard spent three years on her restoration—refurbishing the hull, replacing the outriggers and sliding seats, and stripping her to bare wood before giving her several coats of new varnish.





INTREPID is a 1960s-vintage Comet sailing dinghy recently restored by Scott Bower. Scott bought the 16' boat several years ago. The hull was in pretty good shape, needing only repairs to the stem and a couple of the frames, and replacement of the sternpost. Scott also replaced the cedar deck and completely refinished her. Scott sails in Hopkinton State Park in Massachusetts.

Sandy Scott built this DK-13 plywood kayak in 1990, and it appeared in *WoodenBoat's* Launchings soon after that. After years of use, the kayak was showing wear, Sandy recently gave her a thorough restoration: repairing cracks in her hull, stripping her down, and refinishing her. Plans are available from Dennis Davis, dennisdavisdesigns.weebly.com.



### Hints for taking good photos of your boat:

- 1. Set your camera for high-resolution images. We prefer jpg format, at 300 dpi minimum.
- 2. Stow fenders and extraneous gear out of the camera's view. Ensure the deck is clean and uncluttered.
- 3. Take your photographs in low-angle sunlight for best results. Early morning or late afternoon usually work well.
- 4. Keep the horizon level and the background simple and scenic so your boat stands out from its surroundings.

5. Take some pictures of the boat underway and some at rest. Vertical format often works well for sailboats. Shoot lots of images, send us your five favorites.

We enjoy learning of your work—it affirms the vitality of the wooden boat community. We receive so many submissions that there is not room in the magazine for all of them to be published. Launchings not printed in the magazine can be seen at www.woodenboat.com/boat-launchings.



### **DESIGNS: SKETCHBOOK**

# STELLA MARIS A 42' Shrimp Yacht

Design and commentary by Laurie McGowan, with Michael Schacht

Dear Designers,

I grew up in southwest Alabama, where many of my earliest memories are from time spent aboard my grandfather's self-built 60' stern-drive paddlewheel riverboat. LAZY LADY was well known along our stretch of the Alabama River because she evoked Mark Twain's grand old Mississippi riverboats. She had a huge covered porch toward the bow, a spacious saloon amidships, a full kitchen, a bunkroom, and a small cook's quarters proceeding toward the stern. The upper level featured a cozy deck area and a master suite for the captain and favored guests. LAZY LADY was used as part party barge on sunny summer afternoons; part mobile fish camp during overnight trips to catch bass and catfish; and part long-range cruiser on annual trips down the Alabama and across Mobile Bay to summer in Orange Beach, Alabama. She was a fanciful boat that captured the heritage of boating along the river where my grandfather lived, and she enabled his gregarious personality perfectly.

Now, 30 years later, I am blessed to live in the Lowcountry of South Carolina, a beautiful landscape perhaps more aptly described by Pat Conroy than Mark Twain. I need a boat that fulfills some of the primary functions of my grandfather's LAZY LADY, but I also want a boat that embodies the rich boating traditions of my adopted home. Put simply, I need a shrimp trawler yacht! What better vessel could convert from South Carolina workboat to pleasure craft as well as a riverboat in Alabama or a lobsterboat in Maine?

More practically, the shrimp trawlers of our area are shallow-drafted enough to navigate our rivers and deeper creeks and sturdy enough to withstand the summer squalls and 5-6' seas that occasionally kick up in Charleston Harbor and along the Atlantic Intracoastal Waterway. They have large, open rear decks that could be converted to accommodate parties of 10-15 people, especially if shaded by a canvas canopy. They have spartan deckhouses that might contain a galley and settee, and they feature slightly raised wheelhouses that could be

comfortable for longer cruises. Yes, I dream of taking my family and friends out on a shrimp boat.

My ideal boat would be around 40' overall and have accommodations for six, but they need not be too fancy, in keeping with her working boat roots. She'd have clean, painted wood with hardwood soles, and perhaps a raised queen berth and a head with shower in the bow with two sets of bunk beds almost like quarter berths, one on the starboard side and one to port, flanking a central stair leading down from the saloon. As described above, she would have three primary missions: First, she would host the kind of party where multiple boats would tie up to her as the focal point of long and lazy afternoons on the rivers behind Charleston's barrier islands. Second, she would be the home base for two to six friends during trips to enjoy the myriad fishing excursions that are possible in South Carolina's Lowcountry. For example, she could ply up the Cooper River to the freshwater lakes in Marion and Moultrie during the spring bass spawn. She could wend her way down to Port Royal Sound during the late spring cobia runs. She could also host overnight sorties into the fall to bait shrimp in Bulls Bay north of Charleston. Of course, she would need to tow a smaller 16-18'fishing boat for such excursions. Finally, she could embark on occasional longer trips up and down the Intracoastal to more distant locales.

I am a physician by trade, so I won't presume to suggest technical aspects of such a boat. I have little idea what type of motor would be best suited, or what type of displacement hull would allow her to cruise at around  $8\text{--}10\,\mathrm{k}\,\mathrm{nots}$  . However, I hope I have described the emotional motivations and desired missions of the type of boat about which people would say, "Yes, I saw that boat once. How imaginative!" Thank you for considering my proposal.

Neal Axon Charleston, South Carolina

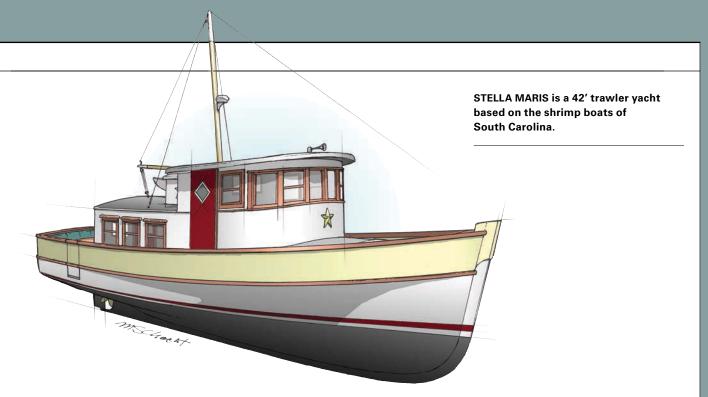
### Dear Neal:

Thank you very much for your letter. The way you paint the evocative image of being on the water while aboard your grandfather's riverboat helped us to frame the feel of the design really well. Your goal of achieving a Maine lobster yacht-like boat, but based on a shrimper hull, also helped a lot. However, and we say this carefully and respectfully, what's become the typical Maine lobster yacht has developed from the simple elegance of the original workboat, while many shrimpers exhibit a more "folk-art" aesthetic in their lines and detailing. In other words, we had to tone down some of the extremes of the shrimper workboat to get to the "yacht." We hope we achieved this in STELLA MARIS (we call her STELLA, for short).

We kept the strong sheer of the workboat without

going to extremes, as well as the straight bow, and the fairly high and nearly plumb bulwarks. STELLA's dimensions are roughly  $42' \text{ LOD} \times 14' \text{ beam} \times 4'3''$ draft (12.8m  $\times$  4.26m x 1.3m), which are similar to smaller shrimpers. We also remained fairly true to the wheelhouse and cabin shapes of the workboats, and really made an effort to blend them into the rest of the boat. We employed a tall mast to resemble, a little bit, the rigging of a shrimp trawler, with a boom to launch and retrieve the 10' dinghy stowed atop the cabin roof.

The hull (the eighth version, it turns out) was a compromise between performance, looks, and interior volume, and we pared down much of the volume of the workboats-with a fine entrance and a deadflat run. We like boats that do not drag the ocean



behind them, and find shrimpers often have a lot of submerged volume at the transom. By having the hull built-down (with recurved sections toward the keel aft) we were able to achieve a nice curve of areas in a physically strong shape, have plenty of space for the engine down low, and have an almosthorizontal propeller shaft.

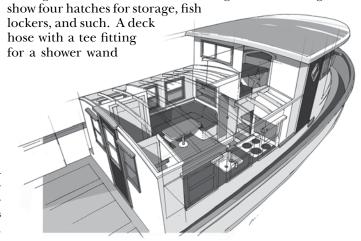
A look at the power-to-speed curve is encouraging, and a lot lighter engine than the traditional Detroit 6-71 or Caterpillar 13,000 may be used. We're suggesting a 260-hp Yanmar diesel with 3:1 gearing and a  $27'' \times 19''' (0685 \text{ mm} \times 0485 \text{ mm})$ three-blade propeller for the boat. We picked that engine partly due to the decent fuel numbers but also because of its small size. It will fit nicely below the saloon sole and still leave plenty of room for excellent soundproofing. Though the engine would burn around 11 U.S. gallons (41.6 L) per hour at 10 knots, only 3 gallons (11.4L) per hour would be used at 8 knots. Notice that there is a big jump in resistance through the water, and power required to overcome this, at around 8.5 knots. There is a lot of space for good-sized fuel, water, and wastewater tanks below the saloon sole as well. Two batteries are suggested—especially if a bow thruster is desired.

For strength and ease of maintenance, construction will be strip-plank wood/epoxy/'glass. Dave Gerr's *The Elements of Boat Strength* provides excellent scantlings for this type of construction. The fiberglass sheathing is layers of biaxial fabric totaling 60 oz/sq yd (2,000 g/m²) and will keep the fairly heavy 1¾6" (30mm) square strips of Douglas-fir from showing or "printing" through the 'glass. A laminated

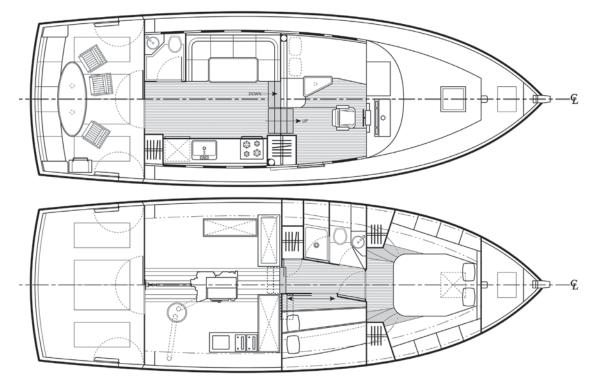
ash stem, keel, and horn timber, seven major plywood bulkheads,  $2\frac{1}{8}$ " (54mm) laminated square ash frames, a  $1\frac{1}{4}$ " (32mm) plywood transom, 1" (25mm) sheathed plywood working decks, and  $1\frac{1}{2}$ " (38mm) sheathed plywood cabin sides will make a very strong boat. Finish may be all painted, as you say, and should look really nice.

### Accommodations

Although the cabin is farther aft than on shrimpers, the cockpit is still large for a cruising yacht this size, to accommodate the many activities you anticipate. We show a nice shade awning covering the cockpit, though people who are fishing would want to keep it more open. An unusual feature is the opening topside doors to port and starboard, instead of the more usual transom door, for access to docks, dinghy (or the towed 18-footer), or to the water for swimmers. With the cabin door on-center and a nicely cambered deck, the first potential down-flooding point is high, or safe enough for your intended trips. The wide transom ensures good buoyancy aft, and even with a party of 10 standing there, calculations show that the transom would submerge only 1'' (2.5 cm). The topside doors permit a nice settee aft, a proper table, a barbecue, and at least three folding deck chairs for outside dining and socializing. We



STELLA's cabin extends farther aft than that of her workboat predecessors, but the boat still has an ample afterdeck for entertaining. The spacious and well-lit saloon has 6'9" of headroom on the centerline.



The sleeping quarters include a master stateroom forward with an "island" double berth. Aft of this, tucked beneath the wheelhouse, is a stateroom featuring two stacked berths to starboard, and a head to port. The head is cleverly located under the pilothouse berth.

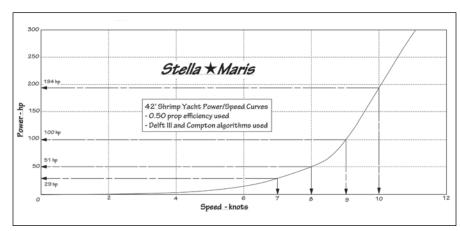
would be coiled on the aft end of the cabin to port, and a life ring is to starboard.

Entering the saloon through the companionway and one step down we have a big, well-lit space with 6'9" (2.06 m) of clear headroom on the centerline. We kept the floor plan as open as possible to permit easy flow with a large group of guests. The generous galley is to starboard, with a hanging locker aft. To port is the lounge with seating for six, and aft of that is the day head, which may also be used as a wet locker. Up a short flight of stairs to starboard is the pilothouse, with the distinctive shrimper curve of windows forward, and offering an excellent view. The helm is off-center to starboard, with a starboard sliding door for deck access forward. We used the diamond window in the pilothouse door that is sometimes seen on shrimpers, and

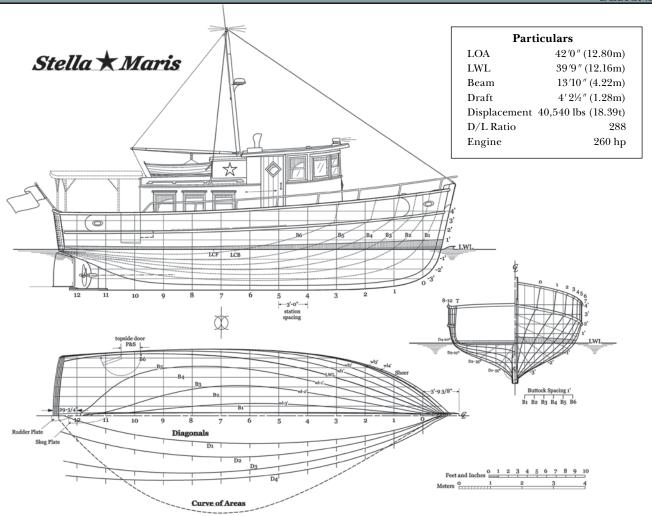
it adds a fun element to the boat. To port, beside the helm, is the navigation station.

We tried very hard to keep deckhouses as low as possible, and also wanted a more slippery hull than that of a typical shrimper, but these two points worked against each other. To get the best of both and achieve the desired three-cabin layout, we "cheated" by converting the pilothouse into the third stateroom. To port is a settee and double berth on a riser, and this would be the ultimate lounging space while steaming or at anchor, and a nice private berth at night. The riser is utilized for headroom belowdecks, and it provides a good base for the helm seat, with standing room beside it to starboard. The pilothouse guests have a locker at their disposal, just aft of the sliding door to starboard, and the day head would be theirs to use at night.

The lower deck under the pilothouse is accessed from the main saloon by stairs to port of the ones leading up. Below and to starboard is a small stateroom with two stacked bunks, and across the passageway to port is another storage locker (aft), and a head with



STELLA will cruise efficiently at about 8 knots, burning just 3 gallons per hour at that speed. Considerable additional horsepower will push her to 10 knots, and she'll require 11 gallons per hour to do that.



STELLA's hull, say the designers, is a compromise between performance, looks, and interior volume. She's more streamlined than a working shrimper, with a finer entrance and less immersed volume aft.

enclosed shower stall (forward). An enormous amount of foot and headroom was gained here by going up a step from the passageway (to widen the sole) and by placing the head under the riser and berth in the wheelhouse. Both the double cabin and head below have portlights on the cabin sides for good light and ventilation.

Continuing forward is the master stateroom with a centerline "island" double berth, and plenty of hanging locker and storage space. Big portlights and a large hatch overhead also ensure good light and air here. The doghouse forward is a nice seating height, making it a perfect forward sitting area. A sturdy samson post is located on the forward face of the doghouse. Wide side decks, a clear foredeck, and a solid 3' (91cm) high railing going forward ensure safe movement around the boat.

The pilothouse roof is perfect for solar panels to keep the batteries charged—or, for fun, a bench seat! Why not? It would be the best view in the house in good weather, and the roof would be great for diving or jumping off. A light railing would be needed for safety, but we think that a flying bridge would be visually too heavy on this boat.

Like your grandfather's riverboat, Neal, we hope that STELLA will someday be remembered with fondness by loads of young *and* older people, as a place of fun and adventures for family and friends.

Michael Schacht is an industrial designer with more than 25 years of experience in the commercial pleasure-boat industry. He lives in Port Townsend, Washington, and is best known for his conceptual design work, which may be viewed at www.proafile.com. Laurie McGowan is a boat designer in Nova Scotia with a diverse on- and below-water work history; he specializes in energy-efficient commercial and pleasure boats. More of his work may be found at www.mcgowan marinedesign.com.

Do you have a boat concept you'd like to see Laurie McGowan and Michael Schacht develop on these pages? If so, send it to Sketchbook, WoodenBoat Publications, P.O. Box 78, Brooklin, ME 04616, or email it to sketchbook@woodenboat.com. Your letter should be no longer than 500 words.



### **DESIGNS: REVIEW**



# Three Pulling Boats

### Low cost and good fun

Designs by John C. Harris, Iain Oughtred, and Phil Bolger Commentary by Mike O'Brien

pulling boats, each quite different from the others. They will take us to coves, creeks, and islands out back of nowhere... places where large sailboats and powerboats dare not go. Along the way, they will reward us with gentle exercise to increase our strength and endurance. Despite their simplicity (or perhaps because of it), these rowing boats might prove as elegant as any yacht in the harbor.

### **Expedition Wherry**

This sliding-seat pulling boat combines several merits of needle-thin recreational shells, wider fixed-seat pulling boats, and sea kayaks. Designer John C. Harris, at Chesapeake Light Craft, describes his Expedition Wherry as "a solution for fitness-oriented rowers who want to go out in cold or rough water, perhaps with camping gear."

The wherry's purpose dictated interesting compromises in hull shape to achieve the best blend of speed, payload, and stability. Harris explains: "Some of the characteristics that make a boat ideal for sprinting in flat water are completely at odds with performance in waves. I added a lot of rocker [convex longitudinal curvature to the bottom], which definitely gives the boat a nimble feel in waves, and as an added bonus keeps the wetted surface from creeping up on you."

Up forward the designer gave his wherry fine lines down low, but drew a pronounced "shoulder" near the deck to help lift the bow over waves. Hollow waterlines back aft reduce drag at cruising speed, and they look nice to most eyes, no matter that they might slow the boat in a flat-water sprint. Harris tells us, "You could make the same pile of plywood move faster in smooth

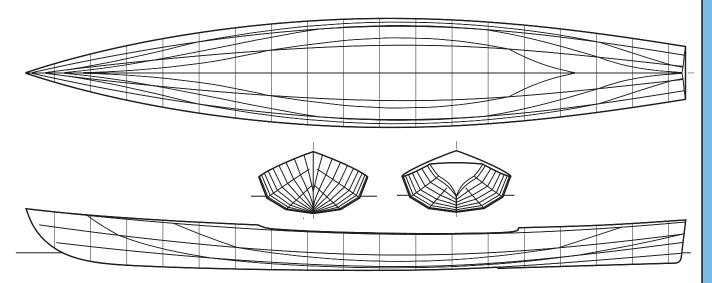
Expedition Wherry
Particulars

LOA 18'3"
Beam 3'
Weight 100 lbs

water if you flattened the run aft a lot and ditched the wineglass transom."

CLC rates the wherry to carry 423 lbs maximum payload. Large kayak-style deck hatches can accept tents, sleeping bags, and "kitchen sinks of modest size." This hull, although too short for pairs rowing, will indeed take a passenger. The

The sleek Expedition Wherry can move fast and carry a heavy load.



Previous page—Finished bright, the Expedition Wherry makes a striking appearance in any company. Above—The wherry's shapely hull lifts over tall waves and moves easily through rough water.



Designer John C. Harris cruises the wherry at 4.5 knots. Top speed measures about 6.5 knots.

sliding-seat rig easily moves forward and produces a setup that's "perfect for a picnic row with your significant other, a rowing coach, your kids, a dog, or whatever."

During four months of sea trials, Harris accumulated GPS data while studying different stroke rates. At a gentle cruising pace, about 50 percent effort and 22–23 strokes per minute, he traveled a measured 4.5 knots and believes: "Even with a couple of long breaks, you could cover 30 miles in a day, no problem." When pulled by an oarsman "of average fitness," top speed for this wherry seems to be about 6.5 knots.

The wherry's multichined hull goes together (from a kit or plans) in stitch-and-glue fashion with three strakes per side. We'll employ epoxy and high-quality mahogany plywood. CLC's 143-page illustrated instruction manual offers large doses of comfort and should help to make easy work of the project. In the end we'll have built a fast and striking pulling boat that combines full-body exercise, a good measure of rough-water capability, and adequate stowage for camp-cruising.

### Mole

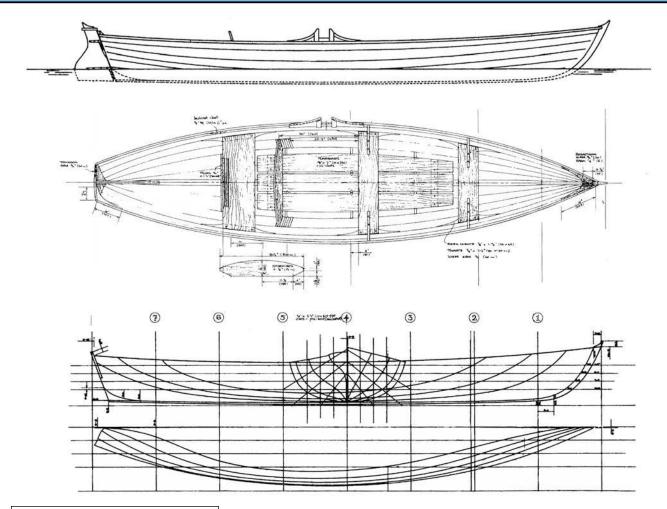
In Kenneth Grahame's *The Wind in the Willows*, Ratty, a perceptive little rodent, speaks one of the truest lines in all literature: "Believe me, my young friend, nothing—absolutely nothing—is half so much worth doing as simply messing about in boats." Designer Iain Oughtred has named this scaled-down Thames

River Skiff in honor of Mole, the recipient of Ratty's timeless wisdom.

Mole's slender and quick ancestors (the boats, that is) evolved from already light and fast British working skiffs in the middle of the 19th century. As pleasure craft, they became lighter and finer still. To put Mole within reach of rowers who don't have "suitable boathouses," Oughtred has drawn the hull to a length of 16'. Traditional Thames River Skiffs measure from about 20' to 24' for the singles and nearly 26' for the doubles.

Mole is set up for a single oarsman, with an occasional passenger who might tug gently on light steering lines. In a search for longitudinal balance, rower and passenger are placed in nearly intimate proximity. Rowers who desire more hull length for greater speed, capacity, or for social reasons, might wish to build Mole's longer cousin, the 19' Badger.

Oughtred describes the old Thames skiffs' traditional clinker construction as "quite sophisticated, with many light frames; usually sawn frames down to the bilge, and separate floors in between." For Mole he specifies glued-lapstrake plywood construction, which allows easy building by neophytes and results in a perpetually leak-free hull.



M	ole	
Particulars		
LOA	16′	
Beam	3′10″	
Weight	115 lbs	

Mole, a scaled-down Thames River Skiff, comes to us from lain Oughtred's drawing table. This elegant glued-lapstrake hull will take us through quiet water in fine style.

The designer seems pleased with Mole's performance: "Though obviously a smooth-water boat, the very fine entry and constant flare enable her to handle a bit of wind-blown chop or the wake of a large powerboat...with surprising ease." He goes on to say that the slender hull moves "astonishingly fast, with practically no effort on the oars."

### Spur II

We can learn much from a boat that a respected designer draws for himself. A long time ago, Phil Bolger designed a striking Whitehall-type pulling boat. Spur, as she was called, attracted considerable attention when the editors of *Boating* magazine pictured her on their December 1964

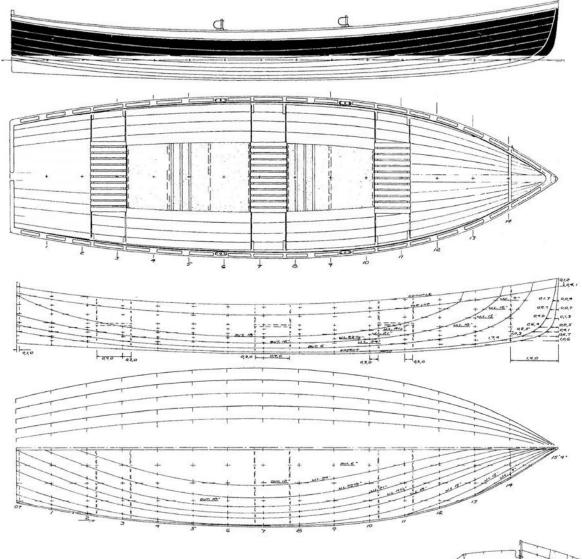
cover. More than 1,500 readers wrote to ask for plans, but Bolger refused to release the drawings. He believed the handsome Spur had proven too heavy and too difficult to build.

During the following three decades, Bolger drew several lighter and more efficient pulling boats. This evolution culminated with Spur II, his Design No. 600 and the final boat that he created for his own use. Compared to her Whitehall forebears, Spur II shows simpler and gentler curves. In the hands of David Montgomery, a skilled and fast professional builder, the gluedlapstrake prototype went together in about 85 hours and finished out at less than 100 lbs.

This new Spur floats lightly. Bolger explained: "She disturbs the

water noticeably less than some narrower boats.... With comparable weight, the narrow hull floats deeper and has to move the water she's encountering a greater vertical distance, generating comparatively deep waves." As we pull harder, Spur II simply goes faster without digging a deep hole. Her narrow waterline and strongly raked topsides help give smooth motion and easy speed in rough water.

Bolger created an auxiliary sailing rig in response to the "usual chorus of 'What a nice rowboat! Let's sail it!'" Yet he seemed less than fond of the concept. Before someone else might do worse, he drew a rig that interferes little with rowing. The spars stow out to the sides, and all of the sailing paraphernalia can be removed quickly.



Phil Bolger, a respected designer and experienced oarsman, drew Spur II for his own use. Descended from a Whitehall-type pulling boat, this hull (Bolger's Design No. 600) shows simpler and gentler curves.

Tiller lines allow us to keep our weight far forward of the transom... just as well, considering this hull's soft quarters. We can sit on the wide thwart that connects the leeboards, and so won't need to endure discomfort from the hull's narrow rails. Because the entire assembly (seat and all) pivots upward if a leeboard strikes a submerged piling or half-tide rock, we'll want to stay alert.

Bolger kept the first Spur II (with no sailing rig) for the rest of his years and often rowed the boat with his wife and design partner, Susanne Altenburger. He held fond

memories: "We've had some good times...a pull up the Sudbury and Assabet Rivers (Thoreau country), and out of Newport on a day when five 12-Meters were racing reefed, and everybody on Narragansett Bay got wet except for us."

Mike O'Brien is boat design editor for WoodenBoat. He teaches rowing and kayaking here at WoodenBoat School.

Expedition Wherry plans and kits from John C. Harris at Chesapeake Light Craft, 1805 George Ave., Annapolis, MD 21401; 410–267–0137; www.clcboats.com; john@clcboats.com.

	Spur II Particulars
LOA	15'4"
Beam	4'6"
Weight	100 lbs

Mole and Badger plans from Iain Oughtred, Struan Cottage, Bernisdale, Isle of Skye, IV51 9NS, Scotland; 011–44–1470– 532732; iain.oughtred@gmail.com.

Spur II plans from Susanne Altenburger at Phil Bolger & Friends, P.O. Box 1209, Gloucester, MA 01930; fax: 978–282– 1349; philbolger@comcast.net.

# WoodenBoat REVIEW PRODUCTS • BOOKS • VIDEOS • STUFF

# Polish for Brightwork

### Reviewed by Aaron LeDonne

The practice of polishing a varnish finish to perfection is widespread among restorers and builders of fine wooden runabouts, and is also done by some yacht builders. It is controversial, but the results speak for themselves.

Polishing a varnish finish involves using abrasives to level the surface and remove imperfections such as dirt, lint, and other airborne contaminants that may have found their way into the wet varnish coating during application or drying. Once the surface has been leveled and the imperfections removed by this fine sanding, polishes are used to eliminate fine sanding marks and restore gloss.

Some professional varnishers believe that using abrasives to break the surface coat will diminish its longevity; others claim that breaking the surface doesn't have much effect, if any at all. There is, however, no question that an abraded varnished surface that isn't polished correctly will not have the longevity or gloss of an untouched varnish finish.

There are many types of polishes available to achieve a mirror-finish. Over the past year, I have used polishes from three different manufacturers—3M, Meguiars, and Menzerna—and while the end result of each was nearly the same, the time and effort to achieve that result wasn't. But before we get into that, a brief overview of the polishing process is in order.

arnish can be sanded and polished before it has fully cured and hardened, but the best finish is achieved if the varnish is allowed to fully cure, which normally takes about 30 days. After that time has passed, and if you have a relatively smooth finish, you should be able to start with 1,000-grit wet/dry sandpaper on a sanding block. Soak this sandpaper in clean water mixed with a few drops of automotive or boat soap (without wax); this acts as a lubricant. If there are deep imperfections, then you may need to experiment



rk PHOTOGRA EXCEPT WH

Reviewer Aaron LeDonne sampled three different brightwork polishes: (left to right) Meguiars, 3M Finesse-It II, and Menzerna. They all yielded similar results, but for greatly varying degrees of effort.

with 400-, 600- or 800-grit to see if additional abrasive is necessary to level the surface and remove the imperfections. Always start with the finest grit that will work to remove the imperfections and level the surface, as you don't want to remove more finish than necessary. And remember: Polishing won't rescue bad varnishing; the better the varnish application, the more difference polishing will make.

Once you have completed sanding with your first grit (normally 1,000), follow with 1,200, then 1,500, and finish with 2,000-grit or higher depending on the polish you'll be using. Then it's time to begin polishing.

Different compounds and polishes require different pads and polishers, though some work with all types of polishers. There are three types of pads: wool (for cutting and polishing), foam (for cutting, polishing, and finishing), and microfiber (for cutting and polishing). There are two types of polishers: rotary (or circular) and random orbit/dual action. A rotary polisher rotates



The brothers LeDonne: Aaron (right) and Ben, in WITHAGRIN, a custom runabout they launched this year for a client near Ingomar, Pennsylvania. Their company, YNOT Yachts, brings the varnished surfaces of their restored and newly built runabouts to near-flawless finishes through the use of fine polishes.

in one circular direction. They are the best tools for making corrections, but they are also capable of removing the finish very quickly because they typically operate at high rpms and generate heat. Random-orbit/ dual-action polishers are more user-friendly: They have free-rotating spindle assemblies that prevent burns in the finish, but they also lack the cutting power of a rotary polisher. (There is also a hybrid of the two—the forced-rotation random-orbit polisher-which uses a direct-drive mechanical action to force the pad to both rotate and oscillate without slipping. It combines the power of a rotary polisher with the safety of dual action machine.) If you have never used a rotary polisher, I suggest a waffle-weave foam pad, such as those made by 3M or Lake Country Manufacturing Company. It is very difficult to rub through the finish with one of these.

s with varnish, everyone seems to have his or her preference of polish. The industry standard, 3M Finesse-It II (www.3m.com), has been around for years and is available from marine suppliers and automotive suppliers alike. Used with a rotary polisher, it removes 1,500-grit or finer sanding marks with a wool pad, or it removes compounding swirl marks with a foam pad. 3M recommends that you use an electric polisher with 1,500 rpm and moderate pressure; when the material starts to dry, increase the speed to 2,000-2,500 rpm and decrease the pressure.

If you have a consistently sanded finish of 2,000 grit or higher and have experience with a rotary polisher and are using a wool pad, Finesse-it works great at the recommended rpms, with one caveat: Heat is generated quickly, and this can mar your finish. Also—don't catch an edge of your pad on the finish, or you'll be reaching for the varnish brush.

In search of a product or products that could provide

This close-up of WITHAGRIN's deck shows a surface that has been leveled by fine wet sanding-a process that also removes dust and lint. The sanding marks were then buffed out with Menzerna polish.

a final finish similar to Finesse-It, but without the stress of the high rpms, I tried compounds and polishes by Meguiars (www.meguiars. com). They have several products in their Mirror Glaze line that

work very well polishing varnish; these include the M101 Foam Cut Compound, M105 Ultra-Cut Compound, and M205 Ultra Finishing Polish. M105 works well with either wool or foam pads, but M101 with a foam pad is much more effective and provides a higher gloss when polishing a varnish finish. M101 Foam Cut Compound is a heavy-cut compound that removes 1,200-grit and finer sanding marks with a foam pad and leaves a finish that you would normally expect from a polish and not a compound. (A polish is meant to leave a shiny gloss, while a compound typically leaves a haze that must then be polished.) Meguiars M101 was designed to be used with a rotary polisher, though it is effective when used with a dual-action polisher and somewhat effective when applied by hand. If you are using a dual-action polisher or applying by hand, have patience; it will take longer to remove sanding marks.

While Meguiars M101 will remove 1,200-grit and finer sanding marks, you will achieve a better finish if you sand up to 2,000 grit and then start to polish. The benefit of using M101 instead of the 3M Finesse-It II is that the M101 has more cutting power and if you have sanded to 1,500- or 2,000-grit, you are able to work the product at a slower speed, between 1,000 to 1,200 rpm, which creates less heat and risk of burning the finish.

Meguiars M101 was designed to be followed with





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### WOODENBOAT REVIEW

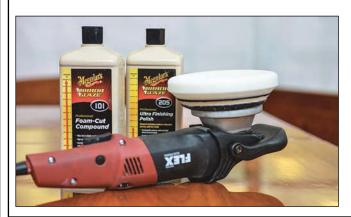


Finesse-It II, from 3M, is the industry standard in brightwork polish. 3M recommends that a wool pad (shown here) be used on a rotary polisher in order to remove 1,500-grit or finer sanding marks.

Meguiars M205 Ultra Finishing Polish. You may be satisfied with the finish after using M101, but an application of M205 will yield a deeper gloss. Meguiars M205 is a finishing polish, very much like 3M Finesse-It II, and will remove swirls, compounding marks, and light imperfections from the finish that may be left by M101. M205 is more versatile than the 3M product; it is designed to be used with a rotary or dual-action polisher and can also be used by hand; it yields an outstanding finish in less time and with less risk of harming the finish.

Knowing that Meguiars M101 was designed for the European automotive market and was available there for many years before being sold in North America, I looked to European companies for other alternatives and tried some compounds and polishes from the German company Menzerna (www.menzernausa.com). Like Meguiars, they have a line of products designed to be used together. The Menzerna products are a little

In search of a product that would yield a finish of the same quality as Finesse-It II, but at less-risky lower rpms, the author tried Meguiars, shown here. Meguiars recommends either a wool pad or a foam pad; foam pads have proven to leave a better finish. While meant to be used with a rotary polisher, the product is effective when applied with the dual-action tool seen here equipped with a waffle-weave foam pad.





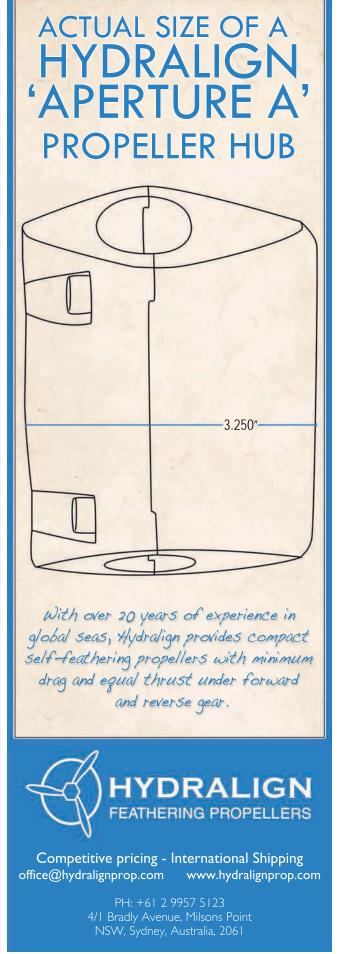
The author's final product test was Menzerna, a polish manufactured in Germany. Menzerna FG (Fast Gloss) 400 removes 1,200-grit or higher sanding marks when applied either by hand, by rotary polisher, or by the dual-action unit shown here. Of the three products tested, Menzerna required the lowest rpm.

more difficult to find in the United States, though are well worth the search (or shipping time). I use one of two first-step products, depending upon the level of finish desired. Menzerna Fast Gloss (FG) 400 is a high-performance, silicone-free compound. It is a one-step polish that removes 1,200-grit sanding marks and leaves a high-gloss finish better than that left by Meguiars M101—with the same effort.

FG 400 can be used very effectively by hand, with a dual-action polisher, or with a rotary polisher. The rotary polisher will make the quickest work of removing sanding marks, and the operating range is 900 to 1,200 rpm. FG 400 is very effective at 900 or 1,000 rpm, whereas Meguiars products aren't quite as effective unless used above 1,200 rpm, and 3M Finesse-It II isn't effective until used at close to 1,500 rpm. FG 400 produces very little dust, which makes cleanup virtually unnecessary. You may find that on lighter woods, a final polish is not necessary, though on darker species you will want to follow the FG 400 with a final polish, such as Final Finish 3000 or Super Finish 4500.

An alternative to FG 400 is Menzerna Super Intensive (SI) 1,500, which eliminates light scratches and 2,000-grit or finer sanding marks and leaves a high-gloss finish. SI 1500 can be used by hand (though FG 400 is more effective by hand), with a dual-action polisher, or a rotary polisher. Menzerna recommends that the operating range be 1,200 to 1,500 rpm, though I've found it to be as effective between 900 and 1,200 rpm. SI 1500 can be used in place of FG 400 if less cut is desired; it is meant to be followed by Menzerna Super Finish (SF) 4500 for a flawless finish, though in most cases it is only necessary to follow this product with SF 4500 to bring out additional gloss since the SI 1500 leaves such good finish.

The complement to Menzerna Fast Gloss 400 is Menzerna Final Finish 3000, a finishing polish that will remove compounding swirl marks and leave a perfect mirror finish without dust. It is very effectively applied



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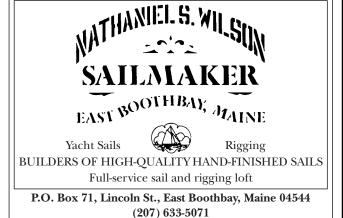
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Careful study of the two photographs above will reveal the difference between a polished and an unpolished surface. The highlight in the top photo reveals a mottled unpolished finish. The bottom photo shows a surface that has been perfectly leveled by fine sanding and then polished to a high gloss.

with a dual-action polisher and can be used with a rotary polisher as well. The complement to Menzerna SI 1500 is Menzerna Super Finish 4500, which is an ultra finishing polish with a deep gloss. Be warned: If you use SF 4500 on a runabout's deck, you'll need polarized sunglasses to cut the glare.

Ultimately, the compounds and polishes from all three companies provide a very similar result. But if you are looking for the highest-quality finish combined with the easiest application, then the Menzerna products are best.

Doing business as YNOT Yachts, Aaron LeDonne works alongside his brothers and father building and restoring wooden (and classic fiberglass) boats in Pittsburgh, Pennsylvania.

### BOOKS RECEIVED

In Search of ELLEN MARIE, by Rachel Rowley Spaulding. Published by Archway Publishing, 1663 Liberty Drive, Bloomington, IN 47403, www.archwaypublishing.com. 171 pp., paperback, \$13.99. ISBN: 978–1–4808–1044–0. Inspired by a painting of the wheelhouse of a fishing boat, the author takes on a quest to learn all she can about the boat.

Work Boats Under Sail: Australia 1788–1960, by John Fugill. Published by Hesperian Press, P.O. Box 317, Victoria Park 6979, 65 Oats St., Carlisle, Western Australia, 6101, www.hesperianpress.com. 118 pp., \$30. ISBN: 978–0–85905–582–6. A collection of articles, images, charts, and other data about sailing workboats Down Under until 1960.

Hand-Crafted Boats of Old Currituck: Fishing and Boating on the Carolina Coast, by Travis Morris. Published by The History Press, 645 Meeting St., Suite 200, Charleston, SC 29403, www.historypress.net. 127 pp., \$19.99. ISBN: 978–1–62619–648–3. A profile of the boatbuilders and their boats from the most northern region of the North Carolina coast.

Sail On, LITTLE WHEE, by Robert Buckner. Published by Creative Dreamings Press, Robert Buckner, 8332 Hemingway Ave. S., Cottage Grove, MN 55016, www. creativedreamings.com. 53 pp., softcover, \$13.95. ISBN: 978-0-615942-10-0. A colorfully illustrated children's story about a tree that grows up to become a boat.

Seeing the Eliphant: A Maine Couple's Adventures in Gold Rush San Francisco, by Kenneth R. Martin. Published by Friends of the San Francisco Maritime Museum Library, www.maritimelibraryfriends.org. 302 pp., softcover, \$19.95. ISBN: 978-0-9818221-1-2. A college writing project on maritime history led to a half-century quest by the author to learn the story of his great-grandparents' adventures during the California Gold Rush in the mid-19th century.

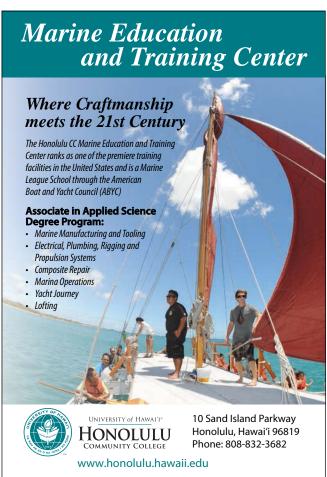
Sea-Country: Exploring Thames Estuary By-ways Under Sail, by Tony Smith, "Creeksailor." Published by Lodestar Books, 71 Boveney Rd., London, SE23 3NL, United Kingdom, www.lodestarbooks.com. 135 pp., softcover, \$21.95. ISBN: 978–1907206–25–2. In another of Lodestar's inviting books about voyaging in the British Isles in small boats, the author sails the Thames Estuary in his 16' miniature gaff cutter SHOAL WATERS.

The Hidden Coast of Maine: Isles of Shoals to West Quoddy Head, by Ken Textor. Photographs by Joe Devenney. Published by Tilbury House, 12 Starr St., Thomaston, ME 04861, www.tilburyhouse.com. 224 pp., hardcover, \$34.95. ISBN: 978-0-88448-350-2. A fine book of wonderful pictures of the Maine coast.

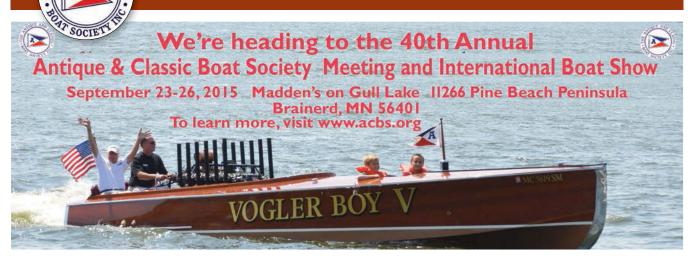
The SOL E MAR Tragedy off Martha's Vineyard, by Capt. W. Russell Webster, USCG (Ret.) and Elizabeth B. Webster. Published by The History Press, Charleston, SC 29403, www.historypress.net. 127 pp., softcover, \$19.99. ISBN: 978–1–62619–588–2. In March 1990, the crew of the SOL E MAR issued a distress call to the Coast Guard. That call was immediately followed by a hoax call, and the Coast Guard took the first call to be a hoax too. This led to the deaths of Hokey and Billy Hokanson, and changes in the USCG search-and-rescue procedures.







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2013 30' Custom Sport Hull 550 \$175,000



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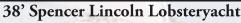
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PINTAIL Hull # 9014, Herreshoff 12 1/2, 161 Asking: \$23,500 / Maine



RACE HORSE 2010, BBY-Built W-Class Sloop, 37' 1996, BBY-Built Buzzards Bay 25, 33' Asking \$599,000 / Rhode Island



SAY WHEN Asking \$159,000 / Connecticut



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GAMECOCK 1925, Herreshoff R-Boat, 40' Asking \$125,000 / Maine

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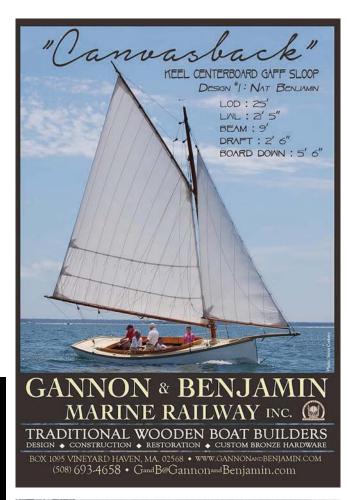
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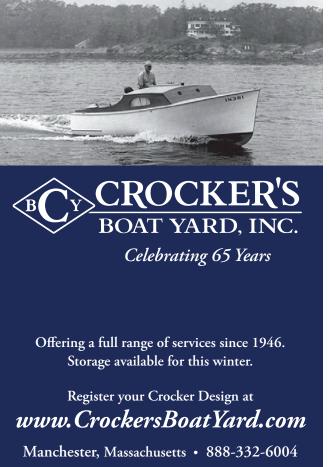
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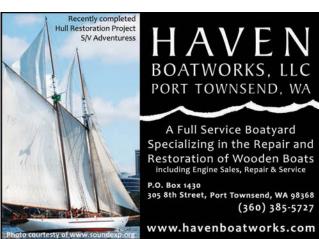


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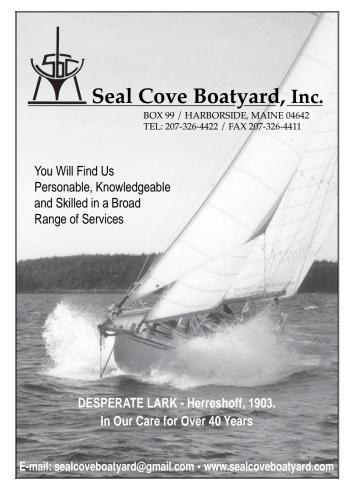


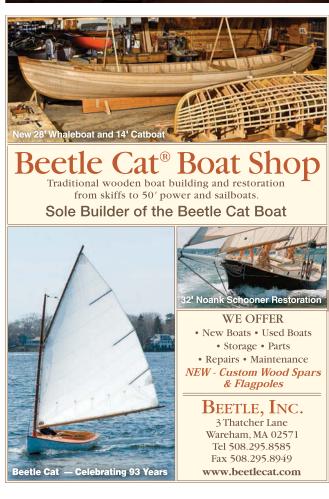
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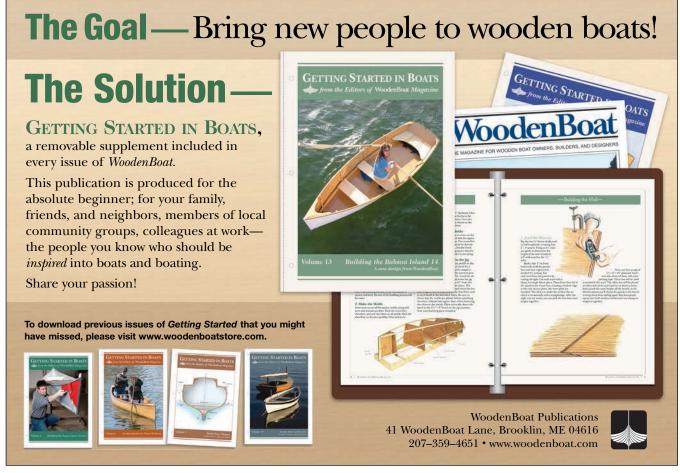








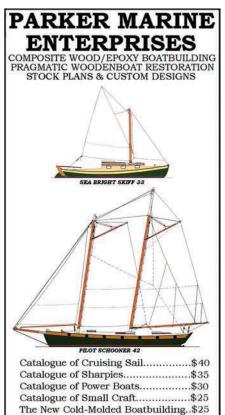






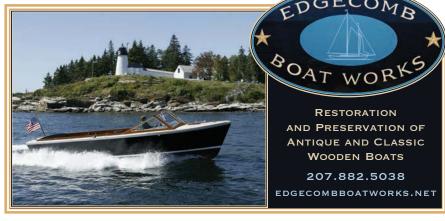






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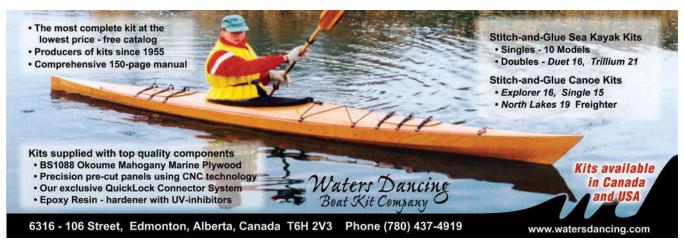


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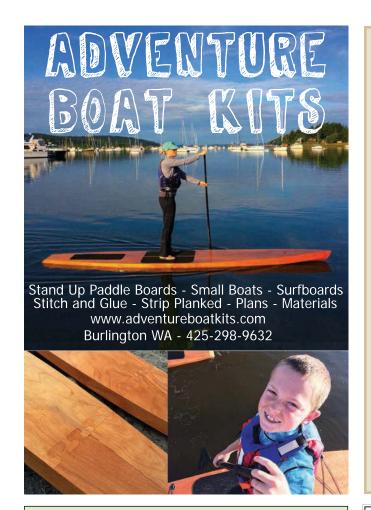


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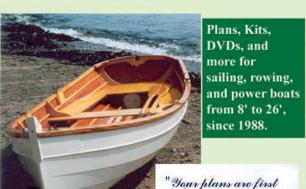
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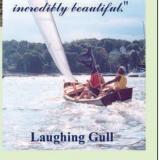
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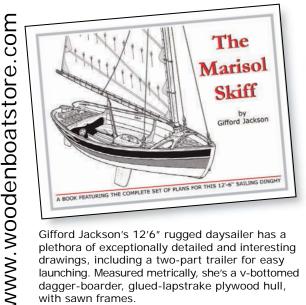
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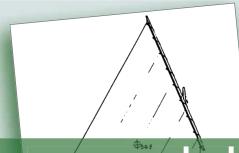
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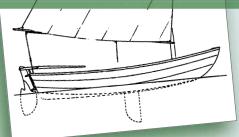


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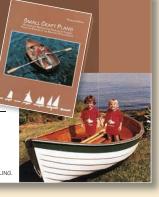


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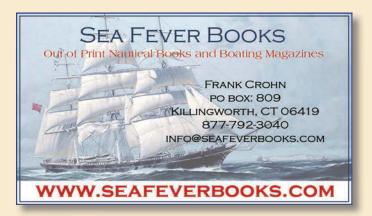
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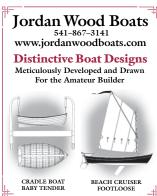
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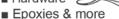


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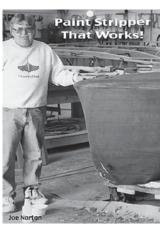
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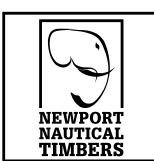
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# INDEX TO ADVERTISERS -

ADHESIVES & CO	DATINGS	KITS & PLANS		
Awlgrip	www.awlgrip.com Cover IV	Arch Davis Design	www.archdavisdesigns.com	- 116
	www.epifanes.com Cover II		www.clcboats.com	
	www.systemthree.com 21		www.devlinboat.com	- 115
	www.tritex.com	Directory of Boat	1 1	115
West System Inc	www.westsystem.com 45		www.woodenboat.com/boat-plans-kits	
<b>BOATBUILDERS</b>			www.fiberglasssupply.com	
	www.beetlecat.com 111		www.glen-l.com www.cnc-marine-hewesco.com	
	www.billingsmarine.com 109		www.woodenboatstore.com	
~	www.crockersboatyard.com 110		www.woodenboatstore.com	
	www.edgecombboatworks.net 113		www.noahsmarine.com	
Fish Brothers Marine Service	www.fishcustomboats.com 104	Nutshell Pram/		
Gannon & Benjamin	www.gannonandbenjamin.com 110	WoodenBoat Store	www.woodenboatstore.com	- 112
Haven Boatworks, LLC	www.havenboatworks.com 111	Pygmy Boats Inc	www.pygmyboats.com	- 115
Laughing Loon	www.laughingloon.com 113	Tippecanoe Boats, Ltd	www.modelsailboat.com	- 115
	www.mpgboats.com 109	Waters Dancing	www.watersdancing.com	- 115
	www.woodencanoes.com 109	MUCEUMC		
O'Donovan &		MUSEUMS		
	www.odonovandole.com 113	New Bedford		۵.
· · · · · · · · · · · · · · · · · · ·	www.parker-marine.com113		www.whalingmuseum.org	37
Products Inc	varan parkamillawaadneadusts com 92	North Carolina		co
	www.parkervillewoodproducts.com 83www.pendletonyachtyard.com 113		www.ncmaritimemuseums.com	60
Reuben Smith's	www.pendictonyaentyard.com	PRINTS & PUBL	ICATIONS	
	www.tumblehomeboats.com 113	A Collection of		
	www.sealcoveboatyard.com 111	Photographic Prints	www.annetconverse.com	59
,	www.stoningtonboatworks.com 112	Calendar of Wooden Boats	www.woodenboat.com	85
	111	Getting Started In Boats	www.woodenboat.com	- 112
Traditional Boat, LLC	www.mainetraditionalboat.com 111	SAILS		
Winchester Boatworks	www.winchesterboatworks.com 110			109
YNOT Yachts	www.ynotyachts.com 105		www.gambellandhunter.net	
BROKERS			ker	
			www.sailrite.com	
	www.brooklinboatyard.com 107	-	www.sperrysails.com	
	www.concordiaboats.com 107 www.coveyisland.com 107			
-	www.cuttsandcase.com 108	SCHOOLS & ASS	OCIATIONS	
	www.davidjonesclassics.com 106	Antique & Classic		
	107		www.acbs.org9	, 104
	www.hackerboat.com 106	Cape Fear	verez of a a odu	۲0
	www.sealcoveboatyard.com 108	Great Lakes	www.cfcc.edu	59
Moxie Yachts	108		www.glbbs.org	18
Page Traditional Boats	www.pagetraditionalboats.com 108	_	www.honolulu.hawaii.edu	
<b>EVENTS</b>		International Yacht	www.monoraramawameaa	100
	1 100		www.iyrs.edu	61
	www.boatcapecod.org 102		www.landingschool.edu	
	www.portlandcompany.com 46	Northwest School of	<u> </u>	
	www.smallreachregatta.org	Wooden Boatbuilding	www.nwboatschool.org 4	7, 78
WoodenBoat Tour	www.woodenboat.com21	Westlawn Institute of		
	www.woodenboat.com 35		www.westlawn.edu	
		WoodenBoat School	www.woodenboat.com	10-11
HARDWARE & AC	CCESSORIES	TOOLS		
Atlas Metal Sales	www.atlasmetal.com 47		www.shelterinstitute.com	79
Barkley Sound				13
	www.barkleysoundoar.com 44	MISCELLANEOU	J <b>S</b>	
	www.canadiantackandnail.ca 82	American Cruise Lines	www.americancruiselines.com	1
	www.hamiltonmarine.com8		www.betamarinenc.com	
	www.bronzeblocks.com46	Christopher Ward		
0 0	www.hydralignprop.com 101		www.christopherward.co.uk <b>Cov</b>	
	www.keystonespikes.com 61		www.halfhull.com	
	shop.woodenboat.org 103		www.pearseacruises.com	
R&W Traditional	www.rwrope.com 59	-	www.peoples.com	
	www.shawandtenney.com <b>60</b>		www.weems-plath.com	
	www.tnfasteners.com	woodenBoat Store	www.woodenboatstore.com	4-6



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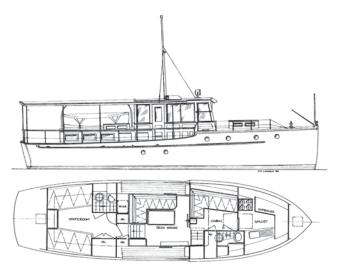
# An Elco Flat-top

by Maynard Bray

Elco cruisers, although built assembly-line fashion and known as "standardized," were among the best of their type—right up with Consolidated, Chris-Craft, Wheeler, and Richardson. Nearly 80 "Flat-top 42s" such as TENANGO were built during the 1920s and '30s, and back then you could take your Elco right back to its builder for storage and maintenance at season's end and pick her up ready to go come spring. But by the time Elco, as a yacht builder, folded around 1950 that option had disappeared, as had the New York City showroom called Port Elco.

The Elco story is a big one and stretches from the electric launches of Chicago's 1893 World's Fair, in which the fledgling company had a hand, through Charles Lindbergh's MOUETTE and JFK's PT-109, and on to its streamlined postwar cruisers. Elco historian Bill Swanson chronicled Elco in *Nautical Quarterly* No. 30 (summer 1985) and featured TENANGO among the representative boats. More recently, Bill donated his vast Elco archives to The Mariners' Museum, which is the place to go if you want to know more about the company and some of its designs.

During her first decade, MOBY DICK II, as TENANGO was then known, stayed in New York waters, near where she was built, then in 1947 moved to Providence, Rhode Island, where her new owner gave her the name TENANGO. Within a couple of years an eight-cylinder Packard replaced the original Elco power plant. Then she received a state-of-the-art Chrysler V-8 "hemi" in 1955. Since 1969, she's been with the present owner





A recent picture of TENANGO taken by her owner shows her afloat and in need of some paint. The drawings at lower left show the typical arrangement of Elco's 42' Cruisers; TENANGO's is somewhat different.

who kept the name and engine, gave the boat award-winning care including inside winter storage, used her for family cruising all along the southern New England coast, and homeported her in New London. For more than 30 of the 46 years of Powers family ownership, this stately lady served as committee boat for the annual Harvard–Yale rowing races, and you could often find her at Mystic Seaport's Antique and Classic Boat Rendezvous.

Cedar planked, oak framed, and copper riveted, this was an exceptionally well-built boat. But she's old, and her hull needs serious repair despite the fact that she's still operational. Is she worth it? You bet! Her manageable size and her classic charm should be convincing enough. But then there's the unusual layout. Just imagine being snugged down in perfect shelter inside her many-windowed deckhouse and watching what's happening outside, or stretching out under the canopy in the "Cleopatra" couch that's placed there.

For more about TENANGO you can contact Kristin Harkness at kristin@harkness.net. She is one of the three Powers children who grew up on the boat and took away many happy memories. TENANGO is in New London, Connecticut, hauled, as usual, at Crocker's Boat Yard.

# Swiss movement, English heart



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