

goodoldboat.com

Issue 128 September/October 2019



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Typographical errors are unintentional and subject to correction.

# GOODOLDBOAT



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Andiamo, this 1989 Brewer 44 owned by Carolyn and Gino Del Guercio, joins a short list of boats that have twice been a *Good Old Boat* cover girl (see the January 2017 cover). This time, Susan Bisaillon captured the Brewer sailing in the Bahamas in fresh winter wind.

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### Yaahting: the best sailing magazine ever?

You may have heard of Elizabeth Meyer. She formed a company, J Class Management, that has commissioned the painstaking restorations of hundreds of classic yachts — including two J-class yachts: *Endeavor* and *Shamrock V*. She founded the International Yacht Restoration School, which has instructed hundreds of students in the skills of yacht building and restoration. She is an author and political activist. But, in 1984, she did something remarkable.

Elizabeth Meyer published *Yaahting*, a one-off, 160-page, laugh-out-loud parody of sailing magazines. Despite being published



35 years ago, it's still relevant — it's shocking how little has changed. If the cover weren't a giveaway, thumbing through *Yaahting* would be like thumbing through the pages of any sailing magazine. The articles, the layout,



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BOTTOM: Attracts, Ive tried other ands that died so hard themses, Ive tried other was the soft and devic terdate. After all, ny berterdate. After all n

Interlust

and the advertisements are all there, all familiar, but not quite right. Jesus H. Christ himself has a byline, as the author of, "Galilee Force 10" (the Fastnet has nothing on this biblical storm). Eric Hiccup wrote, "Cruising the Persian Gulf" and Lint and Berry Nurdee offer their tale on cruising the Indian Ocean.

Interlust took out a full-page ad for their bottom paint. So did Hearken winches (for when you want to *sound* high tech). Rood sails, Z-Scar varnish, and Mired rum are all there too. And our own Jeremy McGeary was involved in this project, contributing parodies such as DIY instructions for nailing down a deck cleat.

Be forewarned: while we love the bawdy elements of *Yaahting*, there are overtly racist and misogynistic bits in this magazine that reflect the period it was produced, stuff that is no longer

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funny. But looking past these things, we can't recommend *Yaahting* more highly. We only wish we'd thought of it first.

The print run was only 30,000. Remaining copies are available at the 1984 cover price at jclass.com

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## Getting from Under Pressure to Bohemian Rhapsody

#### BY MICHAEL ROBERTSON

In 2016, my family and I were lucky to witness the dawn of the resurgence of youth sailing in American Samoa. I wish everyone could experience the joy of pushing hard on the transom of an Opti to launch a smiling child into a bay breeze for their first solo sail. Of course, many have experienced that joy, all over the world. And that's a good thing, right?

A while back, Geoffrey Emanuel, for four years a junior sailing instructor, wrote on SailingScuttlebutt.com, "I am thoroughly convinced that what [junior sailing instruction] needs is a grenade rolled into the room I see full of status-quo thinking." Emanuel was writing emphatically about the problem he sees, of the status quo burning out junior sailors with a "forced march to race and win" pressure-cooker approach to sailing.

Commenters on Emanuel's post and similar posts say they see kids leaving sailing after high school and wonder whether it's an emphasis on competition that's driving many kids away. Opti-parents come under the gun frequently, accused of turning what was designed as a fun little dinghy for kids to play with, into a Grand Prix-class in miniature, with no apparent restrictions on cost. Parents spend fortunes carting boats and kids all over the country and to international competitions, they hire coaches, and they buy chase boats ... pressure, pressure.

And if some kids are getting burned out on sailing or, worse, turned off by sailing, because of how we're exposing them to the activity, we're not going to wind up with a next generation of adults who sail for pleasure and recreation. That's the fear — and perhaps, the cause of the decline in interest in sailing we see today. And if there are fewer parents who sail with their kids simply for the joy of sailing, than there were in the 1970s and 1980s, and if the only other opportunity youth have to be introduced to sailing is race-oriented, then maybe Emanuel is right, we need to change the status quo.

US Sailing Vice President (and former Training Committee Chair) Rich Jepsen suggested that current junior sailing instruction isn't aligned with sailing's interests. "If our goal is to create more lifelong sailors, then we need to serve each segment of interest, rather than fit all kids into a single experience."

I agree. But the only means I see of accomplishing that is for all of us who sail for pleasure to seek out non-sailors with whom we can share our joy of sailing. It's up to individuals, it's up to us. It's up to each one of us to share sailing as a fun



escape from the daily grind. It's up to us to show that sailing isn't so complicated, that it can be safely enjoyed long before it is ever mastered. It's up to us to counter the perceptions that sailing is an elite pastime with high-dollar barriers to entry. It's up to us to get people out on the water under sail, showing them that it doesn't have to be about aiming for a specific buoy, but can be about wandering with the wind.

In the years since I pushed those smiling kids into the gentle trades that blow off Coconut Point, sailing coach Matt Erickson and other members of the Sailing Association of American Samoa, Inc. (SAASI) have launched many dozens of new sailors into the waters around Pago Pago. Kids they've taught from the beginning have graduated to Lasers, competed locally, trained for the Pacific Games, and have their sights set on the Tokyo 2020 Olympics. Shockingly, there was no youth sailing program of any kind for these island kids when Matt and his wife, Brittany, began in 2016.

Despite SAASI's lofty and potentially alienating competitive goals for the American Samoan kids, I know that not one of these young sailors' love of the pastime is being squashed by competitive urges they don't share. I know this because I know Matt. I know his enthusiasm for life and sailing eclipses any competitive goals of the organization. I know that non-competitive kids are not being pushed or excluded and that it will be impossible for any of them not to be infected by the pure joy of sailing Matt exudes.

And maybe that's the other angle, that those involved in running and coaching competition-oriented junior sailing programs continue grooming the racers-at-heart, while also ensuring space for the junior soul sailors. We need them all.  $\Delta$ 

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### Our Mag in Mexico, Ethanol Lament, and Goodbye Gwyneth

#### Messing About in Messenger

Great review of the Columbia 43 (July 2019); the whole issue was a terrific read! My wife, Christine, and I have lived aboard *Messenger*, our Columbia 43, since 1989. In the first six years we owned her, we made some significant modifications to her, including converting the T-shaped cockpit into an aft cabin, moving the



steering forward, and converting the liner tanks into integral tanks. This latter project resolved some serious oil canning in the hull because we built the baffles of the new tanks as structural members. In later years, we cruised aboard *Messenger* with our two daughters, throughout the Pacific. She's a capable vessel.

Thank you again for your fine magazine; we identify as part of the *Good Old Boat* tribe.

Jon Jenks, Ventura, California



Dodging the Mexican shrimper fleet is part of Sea of Cortez regatta sailing.

#### *Good Old Boat* in Mexico

A big howdy and thank you from all the sailors here in San Carlos, Mexico, who participated in the 2019 Beach Party and San Carlos Regatta!

Raul Martinez III, Anthony, New Mexico



PHOTO COURTESY OF RAUL MARTINEZ III



#### **Finding Ethanol**

The article on living with ethanol hit home ("Living With Ethanol," July 2019), as I finally replaced the carburetor on my 2-horsepower Honda motor and it's

running nicely again. However, I was disappointed in the resource listed in the article, pure-gas.org. I buy my ethanol-free gas at Contractors Supply in Stamford, Connecticut, for \$9 per gallon. Each [station I found on the app] sold race gas (usually found at \$16 per gallon). In Vermont, I stopped at a station in Chester that had non-ethanol gas for about \$.50 more than regular. I swallow hard when I buy \$9 gas, but it is worth it to have the little engine run well. All in all, I'm disappointed that more stations do not have a pump with reasonable pricing, as I find at the Vermont station.

Len Lipton

#### continued on page 54



Steve Christensen spotted this aid to navigation on the Mississippi River, near Hastings, Minnesota. He wrote, "Not sure whether I'm supposed to take the trees on port or starboard. Red, right, return?"

### A true racer/cruiser from the world's largest boatbuilder

BY ROBB LOVELL

eneteau is arguably one of the oldest and most successful boatbuilders in the world. The French company traces its roots back to 1884 when its founder, Benjamin Beneteau, a shipwright, started building wooden fishing vessels. Fast forward to the 1960s and the decline in commercial fishing when the company found itself in tough times and began building small recreational fishing boats and cruisers out of a new material — fiberglass. By the mid-1960s, at the insistence of Annette Roux, Benjamin's granddaughter, Beneteau dove headlong into designing and building recreational sailboats.

The company gained market share in the sailing industry, both in France and other parts of Europe. Leveraging a strong U.S. dollar and an even stronger U.S. market, Beneteau began importing boats to the U.S. through a dealership network and, in 1986, established a factory in Marion, South Carolina. As of mid-2017, this U.S. production facility had built more than 8,700 boats.

The Beneteau First 345 was designed by Jean Baret of Beret-Recoupeau, a French design firm specializing in performance sailboats. Production of the First 345 started in 1985 and ceased in 1988 with about 500 hulls, the majority built in France and an estimated 80 hulls built in the U.S.

#### Design

Since the dawn of leisure sailing and recreational sailboat racing, some designers have striven to create the perfect performance cruiser, a boat that



is a joy to sail around the buoys and possesses the creature comforts for extended days aboard.

The Beneteau First 345 effectively blends these two traits in a production boat of decent quality from a wellknown manufacturer. In our local fleet in Windsor, Ontario, there are two Beneteau 345s. One has been used principally for club racing and some longer-distance racing and the occasional week or two of regional cruising. The other First 345 has carried its owner from Lake St Clair, Ontario, and down the Intracoastal Waterway, where he cruised the boat extensively for a year around the Caribbean. Ask either of these two owners about their boat and they both

rave about its attributes as a great racer and a great cruiser.

The 345 has a European look, with crisp lines that Beneteau is known for. A high freeboard and large cabin trunk (with generous windows and hatches) give the First 345 the look of a cruiser, but upon closer examination, the boat's powerful double-spreader masthead rig, deep fin keel, spade rudder, firm bilges, and flat bottom leave no doubt that the boat was designed with performance as a priority.

*Bliss*, a 1986 Beneteau 345, heading toward the starting line of a race on the Detroit River; its sleek appearance reinforces the true racer-cruiser bloodlines of the design. Faux teak dresses the cockpit. Note how the sidedecks rise to the top of the seatbacks, which makes for comfortable seating facing inward or for crew serving as "rail meat."

![](_page_10_Picture_1.jpeg)

The First 345 has a fine and flat entry leading to a long 29-foot 2-inch waterline. The maximum beam is just shy of 11 feet 5 inches, with the beam carried well aft.

The iron external keel was available with either standard 6-foot 2-inch draft or a shoal draft of 5 feet 2 inches. Our test boat, *Bliss*, is equipped with the standard-draft keel.

Total listed displacement of 11,244 pounds (including ballast of about 4,600 pounds) gives the 345 a displacement/LOA ratio of 182 and a ballast/displacement ratio of 45. Coupled with a sail area/displacement ratio of 17.5, this is a fairly speedy boat, until compared to a J/34 which has a PHRF rating of 117 — or the J/35 at 72. Fleet PHRF ratings for the Beneteau range from 120 to 135 seconds per mile.

#### Construction

The 345 features a hand-laid solid-fiberglass hull with a balsa-cored deck. Some owners report that plywood was used for core in high-stress areas, such as under winches.

The hull-to-deck joint is an inward-facing flange bonded with 3M 5200 adhesive and mechanically fastened with rivets through an

![](_page_10_Picture_8.jpeg)

aluminum toerail that runs the entire length of the hull and is slotted to accommodate snatch blocks and save weight.

The First 345 is powered by a raw-water-cooled Volvo 22-hp diesel. Our test boat, *Bliss*, is driven by a Martel folding prop for reduced drag.

Large self-tailing winches adorn the sides of the cockpit coaming on molded-in bases. Cabintop winches provide effective leverage for the halyards and other control lines, all of which lead back to the cockpit.

The Isomat mast is keel-stepped with double spreaders and is configured as a masthead sloop supporting a large 431-square-foot genoa and a 258-square-foot mainsail. The matching Isomat boom is relatively short, leaving the aft end of the cockpit clear to accommodate a small bimini for sun protection or davits for carrying a dinghy.

The First 345 is rated for offshore work by the French international certification agency Bureau Veritas (the French equivalent to Lloyds of London).

#### **On deck**

Another indication of the dual-purpose nature Beneteau intended for this boat are the two configurations they offered: a racing package and a cruising package. *Bliss* is equipped with the racing package, which means she features a tiller, a taller rig, and a traveler-and-mainsheet system situated on the bridge deck in front of the companionway. The cruising package boats feature wheel steering and a mainsheet system on the cabintop, allowing for The crisp facets in the deck mold give the 345 a modern techy look. The companionway hatch slides nearly to the mast. Note the portlight below the bridge deck that provides light to the aft cabin.

a clear cockpit and unobstructed companionway access.

*Bliss'* cockpit is commodious and comfortable, with seats long enough to stretch out for a nap. Underway, the cockpit easily accommodates both a skipper and a racing crew of two or three to handle the sails without running into one another's elbows. The cockpit sole is accented in a faux-teak veneer, and a deep cockpit locker provides an adequate catchall for fenders and cleaning gear. The coamings make for adequate backrests.

A bridge deck leads to a small recessed companionway with a large glass sliding hatch that runs forward nearly to the mast step, providing both headroom and ample light below.

The sidedecks are wide and uncluttered; access to the bow is hampered only slightly by the shrouds and chainplates located well inboard to accommodate better sheeting angles for improved pointing.

Twin hatches provide ventilation for the main cabin, while a larger centered forward hatch provides light and ventilation in the forward cabin.

At the bow there is an anchor locker and a set of small anchor rollers integrated into the stem fitting, where a Harken furler handles the large genoa.

#### Accommodations

The overall feeling of the cabin is bright and airy, owing to the substantial light coming from both the portlights and the large companionway slide, which can best be described as a giant skylight. All this glass and light makes for a pleasant open interior that effectively eliminates

![](_page_11_Picture_1.jpeg)

![](_page_11_Picture_2.jpeg)

The long companionway hatch opens on both ends and provides headroom down the centerline of the boat, as well as light and ventilation. The companionway steps are steep, like rungs in a ladder, at top. To starboard is a cozy and dedicated navigation table large enough for a chartbook and with storage both inside and beneath. Entry to the starboard aft cabin is aft of the nav station, above.

that underwater feeling of some sailboat cabins.

The cabin is clad in light wood veneer, which is nicely offset with a teak-and-holly sole. Overall, the finish grade of the cabin is excellent and attractive.

![](_page_11_Picture_6.jpeg)

![](_page_11_Picture_7.jpeg)

The saloon features port and starboard settees that will comfortably seat the entire crew. The drop-leaf table between is centerline.

The interior was available in two configurations, one with a matching pair of quarter cabins aft under the cockpit and coamings and a walkthrough head on the way to the forward cabin, or in the case of *Bliss*, a single aft cabin with a larger owner's forward cabin with the head situated to the rear adjacent the aft cabin.

Coming down the companionway into the main cabin, *Bliss* features an L-shaped galley with double sinks near the boat's centerline and a large icebox with an integrated cold plate (that kept our beers cold for post-race celebrations). There's an LPG gimballed stove/ oven combination with storage for plates and associated sundries above the stove and the counter.

The rounded door to the aft cabin is directly aft of the nav station and inside is a large berth that is mostly under the cockpit; headroom is limited.

Adjacent the aft cabin is the head with access via an identical door situated aft of the galley, and while the head is a respectable size for a 35-foot boat, it lacks headroom, much like the aft cabin.

Rounding out the interior is the master cabin forward, where a large hatch for ventilation and star gazing dominates. At 5-feet 11-inches, I was able to fit on all bunks; taller sailors might wish the designers worried less about large built-in cabinets and used those precious inches for slightly longer bunks.

#### Underway

On a brisk fall day with variable winds, our test sail was a club regatta at the LaSalle Mariners Yacht Club located on the Detroit River. Racing is a great way to get a feel for a boat as most races run the boat through basically all points of sail. *Bliss* did well both upwind and downwind. In gusts on our downwind leg, she made a little over 7 knots. The spinnaker was impressively large and kept *Bliss* moving well and her crew on its toes.

The helm felt well balanced and the boat tacked quickly, no doubt owing to its modern underbody combined with good crew work. The boat felt substantial yet nimble and responsive, and was manageable when reacting to gusts. The freeboard and wide beam makes for a reasonably dry ride in all but the worst conditions.

Sitting on the coaming with one's back to the lifelines affords a better view of the course while putting crew weight on the high side where it belongs. The wide tops of the coamings and wide sidedecks in relation to the lifelines make it a fantastic boat for racing as well as cruising.

The Volvo diesel pushed the boat well and is surprisingly quiet. However, on *Bliss* the ignition switch used to start the diesel is below, at the nav station, which is fine when sailing with crew, but could present a challenge for a singlehander.

#### **Known issues**

While the First 345 is generally regarded as a decent-quality production boat, every example is over 30 years old and should be evaluated carefully before purchase. In particular, the decks of the First 345 are balsa-cored, and a

![](_page_12_Picture_0.jpeg)

![](_page_12_Picture_1.jpeg)

surveyor should be retained to check for soft spots and delamination.

On virtually all First 345s, the adhesive holding the vinyl headliner fails and the liner falls down. While this is strictly a cosmetic issue, there are pages of online forums dedicated to creative solutions to address this problem.

Likewise, the 345's iron keel seems to require ongoing maintenance, which is why lead is preferred. An inspection of the bilge should hopefully reveal bright and shiny stainless steel keel bolts; keep a close eye on them.

Many production boats in the mid-1980s had issues with hull blisters and Beneteau models of this era are no exception. Checking the hull for blisters is a good idea and applying a barrier coat before they appear is good insurance.

#### Pricing and availability

Because the vast majority of the First 345s were built in France, it's not surprising there are far more for sale in Europe. Prices range from \$28,000 to \$52,000. We found eight for sale, seven in Europe and just one in the U.S., on the East Coast.

Can one boat be all things? While every boat is a compromise, the Beneteau First 345 seems to be an excellent choice for the sailor looking for a respectable club racer that also can be cruised in relative comfort.  $\varDelta$ 

Robb Lovell grew up sailing on Lake Huron aboard his family's Endeavor 40, where he caught the sailing bug. That was about 20 boats ago. Robb enjoys buying and restoring boats, and is an avid racer and cruiser based out of Lasalle Mariner's Yacht Club (LMYC) in Ontario. He currently races on a Cal 9.2 named Jade, but owns three other sailboats and a tugboat!

room for one's feet, left middle. Common to many French designs are quarter cabins with privacy doors — not for the claustrophobic, left bottom. In *Bliss'* accommodation plan, the head is located aft with a single aft cabin and a larger owner's cabin forward, immediate left. A second plan features two aft quarter cabins and a narrow head forward, aft of a smaller forward cabin.

The L-shaped galley is compact yet retains the essentials: stove, sink, and ice box, left top. A downside of the generous cabinetry is a short V-berth that doesn't provide much

![](_page_12_Figure_12.jpeg)

| Docionar               | Joon Porot |
|------------------------|------------|
| Designer               | Jean beret |
| LOA:                   | 34' 6"     |
| LWL:                   | 29' 2"     |
| Beam:                  | 11' 5"     |
| Draft ( deep):         | 6' 2"      |
| Draft ( shoal)         | 5' 2"      |
| Displacement:          | 10,141 lb  |
| Ballast:               | 4,600 lb   |
| Disp./LWL ratio:       | 182        |
| Sail area:             | 512 sq ft  |
| Sail area/disp. ratio: | 17.5       |

![](_page_12_Figure_14.jpeg)

# Beneteau First 345...

### ... and a couple North American racer/cruisers

#### BY ROB MAZZA

he 1980s were a transformative period in the sailboat industry in North America. After years of incredible expansion in the 1970s, the International Offshore Rule (IOR) was falling out of favor, and a suitable replacement had not yet been found. (Some would argue that a suitable replacement has yet to be found!) Builders of dual-purpose sailboats were taking a beating because they were often competing against their own boats on the used market, as well as fighting the emergence of one-design "around the buoys" keel-boat racing and "sport" boats. At the same time, shoal-draft cruising boats, a maturing trawler market for aging sailboaters, and the emerging popularity of multihulls all contributed to fragmenting the market. When you add in the additional challenge of competition from both Taiwan and France, things really started to get tough!

A number of North American builders did not survive the 1980s. Those that did were then hit with the 10% luxury tax in 1991, a tax that turned out to be the final straw for many more. However, the boats built in the 1980s are still some of the finest good old boats out there today.

The Beneteau First 345 is a classic example of the 1980s competition from France (the "French Invasion"). As a comparison to the French Beneteau First 345, let's take a look at two North American boats designed and built in this same period that target the same shrinking dual-purpose racer/cruiser market: the Roger Hewson-designed Sabre 36 and the Steve Killing-designed Express 35. (The latter was built by another C&C alumnus, Bill Goman of Goman/Express Yachting.) All three boats are surprisingly similar in their dimensions and design philosophy, reflecting the established influence of the IOR, this time in a positive way, because they are all good wholesome

![](_page_13_Picture_7.jpeg)

|                  | First 345   | Sabre 36     | Express 35                |
|------------------|-------------|--------------|---------------------------|
| LOA              | 34' 6"      | 36' 0"       | 35' 0"                    |
| LWL              | 29' 2"      | 29' 4"       | 29' 0"                    |
| Beam             | 11' 5"      | 11' 3"       | 11' 6"                    |
| Draught          | 6' 3"       | 6' 4"        | 6' 6"                     |
| Displacement     | 10,141 lb   | 13,200 lb    | 11,500 lb                 |
| Ballast          | 4,600 lb    | 5,400 lb     | 5,300 lb                  |
| LOA/LWL          | 1.18        | 1.23         | 1.21                      |
| Beam/LWL         | .39         | .38          | .40                       |
| Disp./LWL        | 182         | 354          | 206                       |
| Bal./Displ.      | 45%         | 41%          | 46%                       |
| Sail area (100%) | 512 sq. ft. | 610 sq. ft.  | 656 sq. ft.               |
| SA/Displ.        | 17.46       | 17.4         | 20.6                      |
| Capsize No.      | 2.1         | 1.9          | 2.0                       |
| Comfort Ratio    | 19.9        | 25.9         | 22.3                      |
| Year built       | 1985        | 1985         | 1984                      |
| Designer         | Jean Beret  | Roger Hewson | Steve Killing             |
| Builder          | Beneteau    | Sabre Yachts | Goman/Express<br>Yachting |

boats. But the emergence of the IOR "type" is obvious and well illustrated in all three.

Each has the now-standard split keel and rudder, with low wetted surface, and a tall sail plan incorporating a mast head rig with double spreaders and a large fore triangle. Each bears the IOR hallmarks of a straight stem, and a small skeg above the rudder to "tweek" the after girth stations, as well as, I suspect, but cannot confirm, possibly U-shaped forward sections and flatter midship sections. Of the three, the Sabre looks to be the more conservative design with the larger and elongated rudder skeg extending forward to the keel. This certainly increases wetted surface and impedes maneuverability, but does improve directional stability. The waterline lengths, max beams, and draft are all within inches of each other. There is about a 3,000-pound variation in displacement, but how much of that is actual, and how much is marketing is always an open question. As we have discussed in the past, sometimes "designed" displacement is not always realized in a production environment. The lighter 10,141-pound displacement of the First 345 on essentially the same waterline length as the other two boats yields the lowest displacement/length (D/LWL) ratio of the three at a very competitive 182, followed by the Express at 211, and a still-competitive 234 for the 13,200pound Sabre. The lighter First 345 has the smallest sail area at 512 square

feet, but still produces a high sail area/ displacement (SA/D) ratio of 17.46, essentially equal to the heavier Sabre, which carries almost 100 square feet more sail! However, the 11,500-pound Express carries the most sail area on the tallest rig of the three, for a very impressive SA/D ratio of 20.6. That would make the Express a hard boat to beat in light air on any point of sail. As the breeze builds, though, the heavier displacement and greater ballast weight of the Sabre would give her a distinct advantage upwind, but off the wind in those conditions, the First would certainly have the edge.

A lighter displacement combined with a relatively wide beam pushes the capsize number of the First 345 slightly above the 2.0 threshold, while the heavier Saber is slightly under, and the Express right on 2.0. The heavier displacement of the Sabre, along with the narrower beam, results in the best comfort ratio of 25.9, with the other two falling in line in direct relation to their lighter displacements.

I look upon the boats from this era as the finest product of the late IOR. Most of the more egregious exploitation of the rule prior to the 1979 Fastnet Race had been eliminated, and the boats produced by almost all builders were becoming more sophisticated in their design and executions, specifically the installation of mechanical and electrical systems that were more and more being installed to recognized standards set by the American Boat and Yacht Council (ABYC) and National Marine Manufacturers Association (NMMA). I'm not sure we could call this the golden age of fiberglass production boat building, but it is certainly mighty close.  $\varDelta$ 

Rob Mazza is a Good Old Boat contributing editor. He began his career as a naval architect in the late 1960s, working for Cuthbertson & Cassian. He's been familiar with good old boats from the time they were new, and had a hand in designing a good many of them.

![](_page_14_Picture_5.jpeg)

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![](_page_14_Picture_8.jpeg)

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![](_page_14_Picture_10.jpeg)

# Working in Another

## A diver's insight can reveal the hull story

BY BRIAN MYKYTIUK

This is the first in a series of upcoming articles by tradespeople who support the owners of good old boats.

A s I eat oatmeal and berries for breakfast, I make the day's schedule. The oatmeal will be the last food I have until late afternoon because, in my line of work, I spend much of my day on my back, sometimes even completely upside down, feet-up. Too much food and I get an upset stomach, an acid-reflux thing.

From my daily check of the NOAA forecast, I learn that the skies are going to start overcast, like a lot of days in Oxnard. Yet the clouds are likely to burn off midmorning and they expect to issue a small-craft advisory in the afternoon. The sea temperature is 57 degrees; I fill three used juice bottles with piping-hot water and stick them in my cooler. They'll remain hot long

![](_page_15_Picture_7.jpeg)

enough for me to pour them into my wetsuit later, just about the time I am cold enough to think about quitting. Hot water keeps me going.

When people ask about my work, I tell them I'm a diver, that I clean and maintain boat bottoms. This regularly involves scraping barnacles off hulls, but I'm responsible for much more. I'm my clients' eyes below the waterline. I let them know about problems I see, such as worn paint due for a new coat, or the new coat the yard applied last month that's not adhering to a large area aft, flaking off in big pieces. I can spot osmotic blisters when they're tiny

![](_page_15_Picture_11.jpeg)

Before cleaning, unpainted prop, shaft, and strut show typical hard and soft growth, at left. After cleaning, the metal shines and is protected with new zincs on the shaft and strut, at right.

# World

![](_page_16_Picture_1.jpeg)

![](_page_16_Picture_2.jpeg)

There's no paint left on the lower aft section of this winged keel, far left. An unfortunate, tangled mess that's easy for a diver to remove, at left.

and track them over time, to let the boat owner know if they're growing in size and number. I can see the earliest telltale signs of electrolysis on a prop or shaft. It's obvious to me when a particular boat or slip is "hot" and zinc anodes are being eaten up more quickly than on surrounding boats. Sometimes, I'll report newly dinged or chipped props, or remove lines or netting that have become wrapped around a prop or a shaft.

In the past, I would verbally report problems to my clients. Today, I can email photos or video I've taken underwater so clients can see things for themselves. This technology has been a positive change in the industry, even helping to weed out dishonest business practices and improve the overall quality of work.

The first boat that I have scheduled for the day belongs to a new customer and has reportedly not been cleaned in four months. As I pull my skiff up to the dock, it looks to me like it hasn't been cleaned in a year, judging by the size of the mussels clumped around the rudder. I try to get the harder jobs done earlier in the day so the rest of the day seems easier.

Before rolling backwards into the water to start cleaning, I'll pull my hood over my head and don my fins, gloves, and mask. I'll pull the cord to start the Honda motor that powers my compressor and note that all 100 feet of my hookah hose is coiled just so, in a way that ensures it will follow me tangle-free as I do my job.

If I later need a coarser brush or a particular tool or a 1 ¼-inch collar zinc, it'll be right where I expect when I reach for it over the side from the water. Regulator in my mouth, I fall backwards with a window-glazer's suction cup in my left hand and a scraper in the other. I orient myself as the cold saltwater quickly finds a path to trickle down from my neck to the small of my back. The shock is my daily

#### On Becoming a Hull Cleaner

What kinds of people succeed in your trade and how do they get started? What was your path?

People in this line of work must love the water. They must have the integrity that drives them to do a thorough job on every boat, or they won't last. It's hard work; upper body muscles get a workout every day. It isn't clean work; most days I'll emerge from the water and my wetsuit is crawling with tiny krill (they get in my hair and ears too). It's also not a social job, most of the days it's just me and the underwater life. Even above water, motivation to get moving in a bid to stay warm.

After scraping the bulk of the growth off the bottom, I notice that I am surrounded by thousands of tiny bait fish, all enjoying a free meal in the cloud of sea life I created.

People regularly ask me if there is, "anything to see" in the harbor. Absolutely! On any random day, I observe spider crabs scooting through the sea stars and scallops that are stuck to the dock pylons. Jellyfish, nudibranchs, lobster, and rays all call the harbor their home. And then there are the octopuses! I often find them resting

#### -BM

it's rare that a boat owner is there to talk to when I'm done; marinas are usually quiet places during the week, especially outside the summer months. Some divers go to commercial dive school and then find work as hull cleaners. I grew up surfing in Southern California and was certified as a diver in my mid-twenties. I advanced as a rescue diver and then worked as a dive instructor with local shops. I was turned on to hull cleaning as a more lucrative career option and worked for a large dive company before opening my own business.

![](_page_17_Picture_1.jpeg)

People who spend their working lives underwater get used to quiet, often multiarmed bystanders, above. Tools of the hull-cleaning trade are varied and must be at hand for access from the water, right.

wrapped around a prop or inside a through-hull. It is always amusing to shoo them away, as I always get inked.

After two-and-a-half hours spent under the neglected boat with a scraper, steel wool, a stiff plastic-bristled brush, a wire brush, a scouring pad, and a screwdriver, I motor off to the first of five or six boats that I clean on a monthly basis. These will fill the rest of my day. They'll be a mix of sail and power, from a 22-foot Catalina to a 47-foot Hatteras with twin screws, twin rudders, and trim tabs with hard-to-clean actuators. In addition

![](_page_17_Picture_5.jpeg)

to removing all the soft growth on the hulls, I'll change a zinc or two, ream hard growth out of through-hulls, and clean stainless steel shafts and bronze props until they're smooth and shiny. I'll be as careful as possible to remove tenacious growth and scum from the unpainted waterline of one, without getting too abrasive on the exposed gelcoat.

Finished, I'll arrive back at the dock exhausted, cold, and hungry, but happy. A typical day is satisfying, another group of hulls is clean and anode-protected. My skiff is organized and prepped for the next day. If I'm lucky, I'll bring an underwater story home for my kids; spotting a ray or small shark is always a hit. At home I'll send the day's bills and reports via email, including a few before and after pictures. And each of those clients, no matter what I report, receives peace of mind from the information I send, clear knowledge of what is happening with their boat beneath the waterline.

Brian Mykytiuk has been maintaining boat bottoms underwater for 16 years. He and his wife, Lindy, own and operate Neptune Dive Service of Ventura, California. Between Channel Islands Harbor and Ventura Harbor, Neptune services over 150 boats monthly. When Brian's not underwater, he enjoys spending time with his family at the beach, maintaining his garden, and perfecting his smoked tri-tip.

![](_page_17_Picture_10.jpeg)

#### **Always the Unexpected**

In my 20s, your editor worked for a couple years as a diver cleaning boat bottoms. As Brian would attest, as rote as each day might seem, each is very different; I never knew what might surprise me. I once picked up a plastic chair from the bottom to return to the dock. The biggest octopus I'd ever seen (or have seen since) flew out from underneath the chair, right in my direction, brushing over my mask. It scared the heck out of me. Then there was the Sunday morning my boss called, gave me the phone number of a guy who'd called her in a panic because he'd dropped his car keys off the dock. "It's up to you

whether you take the job, charge what you will, it's your day off."

I called the guy and asked if he could wait until the next day, explaining that it was a huge effort to pull on a full wetsuit and motor over just for one quick dive, "And there's a chance I won't find them, the bottom is very soft muck."

"I'll pay you \$200 for trying." I'd have spent a couple of days looking for his keys for \$200. I was suited up and drove there as fast as possible.

"Hey look, I appreciate you coming. I didn't drop my car keys." The guy pulled out a badge. "I'm an FBI agent and I dropped my gun. It's holstered, safety's on."

#### -Michael Robertson

Visibility was terrible, but I found the gun within 5 seconds. I didn't bring it to the surface, I couldn't. For almost 20 minutes I swam around in slow circles and surveyed stuff growing on the pilings; I picked around the odd trash on the bottom. When I did surface with the gun, I saw color return to the agent's face. Twenty-five years later, it's obvious to me that the agent would have been much happier paying for a 1-minute recovery than a 20-minute recovery and all the anxiety that went with it. But at the time I thought it would be wrong to surface so quickly to take that much money.

# Equal Angles, Equal Forces

N ext time you're at the marina, look up. If there are enough sailboats around, you'll likely find a variety of rigs, with masts sporting anywhere from zero to several sets of spreaders. And in that mix of masts, chances are there will be quite a few wonky spreaders.

Spreaders serve a couple purposes on a rig. To start, they act as a means of increasing the staying angle. The staying angle is the inside angle that is formed at the top of the mast, between the mast and stay. For a stay to exert the force necessary to support a mast, the staying angle should be at least 12 degrees, the minimum magic number. Sailboats are generally long enough that it's easy, in the case of a forestay or a backstay, to meet or exceed the 12-degree minimum. But monohulls are not normally beamy enough (or the masts not short enough) to run a stay from the top of the mast to the outside of the hull and create a staying angle of at least 12 degrees.

Enter the spreader.

By introducing a spreader (to spread the angle between the mast and shroud), a staying angle greater than 12 degrees is easy to achieve, even on a narrow-beamed boat.

At this point, you may be wondering why multihulls use spreaders. After all, with all that beam, surely shrouds can be easily fixed at deck level such that the critical 12-degree staying angle is exceeded. And what about boats with taller masts, why two or more sets of spreaders? After all, the first set of spreaders establishes the critical angle.

In both cases, the answer is the same. In addition to providing a greater staying angle for shrouds, spreaders act as a compression member, supporting the mast where they're attached, shortening the unsupported length of mast. A single set of spreaders set ¾ of the way up a 48-foot mast produces two unsupported sections of mast, 36 feet below the spreaders and 12 feet above, rather than a single 48-foot unsupported section. Consider the often-used analogy of a stick of uncooked spaghetti. Put your hands on either end

![](_page_18_Picture_8.jpeg)

### Correct adjustment of your spreaders may save your rig

#### BY CONNIE MCBRIDE

of the spaghetti and push. SNAP! It will break fairly easily. Now, take one of the shorter pieces and try it again. You'll be able to exert much more force on a shorter strand without breaking it. Because your mast is loaded under compression forces, it should be clear why this is an apt comparison.

Now, take another, longer stick of spaghetti and have a friend pinch it in the middle, or perhaps in two places, and repeat the experiment. This time, the longer "mast" is as stiff as a shorter one. This is because the unsupported length is

![](_page_19_Figure_1.jpeg)

When the spreader bisects the shroud to create equal angles above and below the spreader, the spreader is in perfect compression.

shorter. Shrouds exert a compressive force on the spreaders, which in turn act like a friend pinching the spaghetti: they shorten the unsupported section of mast, allowing you to have a taller rig that can handle the compression loads imposed on it, without buckling.

But spreaders are only as effective as their installation. Rigger-extraordinaire Brion Toss calls improper spreader angle the "single most common flaw in rigging." Looking around the harbor, I agree. It appears there's a

– CM

#### Using a Bevel Gauge

A bevel gauge, though primarily a carpenter's tool, can be handy to have aboard. It can be used to verify, compare, and transfer angles, or bevels. In the case of rigging, a bevel gauge can be used to compare the angle formed by the shroud and the spreader both above and below the spreader. Properly aligned spreaders should create equal angles. To use a bevel gauge, first loosen the wing nut. The metal half slides and pivots (thus its other name, sliding T-bevel) to form any angle with the handle. When using it to verify spreader angle, it is easiest to align the handle with the spreader, let's say the bottom side, and adjust the metal half to lay against the shroud. Tighten the wing nut to keep the gauge at that angle. Then, flip the bevel gauge to the other side of the spreader, in this case, the top side, and verify that the angle formed with the shroud is the same as what your gauge shows. If not, move the spreader

### Downward stay tension Spreader/stay angles unequal Force exerted by stay not aligned with spreader

**Incorrect** 

When the spreader is out of adjustment, it not only looks funny, but compression forces exerted on the spreader are not aligned with the spreader, which can lead to rig failure.

not-so-uncommon misperception that spreaders should be horizontal, level with the water. The dangers of having spreaders in this position are significant.

The compressive force exerted by a shroud upon a spreader should be in-line with the spreader itself, from the spreader tip to the spreader root. And the only way a shroud can exert a force evenly upon the spreader, is if the angle formed where the spreader intersects the shroud is the same above and below the spreader.

![](_page_19_Picture_11.jpeg)

toward the smaller angle. In other words, if you mark the bottom angle, then compare it to the top angle and see that your gauge is bigger than that angle, move the outboard end of the spreader *up*.

![](_page_20_Picture_0.jpeg)

The spreaders in the photo at left appear to be set at good angles. The spreaders in the photo at right may have worked this way for years, but misaligned forces are stressing the spreaders and putting the rig at risk.

With that understanding, consider again the horizontal spreader. The only way a shroud could impart a compressive force aligned with the plane of a horizontally mounted spreader, is if that spreader was mounted exactly halfway between the deck and the top of the mast, and if the stay was attached to the masthead and at the point where the deck and mast meet — like a bow and arrow.

But boats aren't rigged that way and so spreaders should never be level (and never drooping downward!). Consider that same improperly leveled spreader in the conventional position, much higher on the mast, and with the lower end of the shroud attached well-outboard, near the toe rail. Now the shroud is exerting a downward force on the horizontally aligned spreader. If the seizing, or whatever mechanism holds the spreader tip in place, slips or breaks, the downward component of the force exerted could collapse the spreader and result in a dismasting.

Fortunately, even without measuring angles, it's easy, with the right perspective, to visually identify correct and incorrect spreader angles. Look at your boat and others head on, from a couple hundred feet away. Does a spreader seem to be horizontal? Incorrect. But note that when the angle between the spreader and the shroud, both above and below the spreader, appears to be the same, the spreader is angled slightly upward. This is correct. Do your own spreaders look correct?

If not, the remedy is simple, and urgent. Climb your rig. Arrange hand signals with a friend whose got the right perspective. Based on your friend's input, adjust the angle of the spreader. But before you secure the spreader tip to the shroud, use a bevel gauge to double-check that the above and below angles are the same. (An eye can get it close, but a gauge can confirm they are the same angle.)

Spreader angles are too important to neglect. Take a row around the harbor, study your own spreaders, then take a bevel gauge aloft. Your rig will thank you.  $\Delta$ 

Connie McBride and her husband, Dave, raised three boys aboard their 34-foot sailboat Eurisko while cruising the Caribbean. After 15 years, they now divide their time between enjoying being empty nesters and visiting their grandson, the third-generation McBride cruiser. You can follow their adventures at www.facebook.com/ simplysailingonline.

#### Don't believe everything you read (or hear)

We've seen it in the online forums and heard it said on the docks that the best way to ensure the proper spreader angle is to make sure the distance from the masthead to the root of the spreader is equal to the distance from the masthead to the tip of the spreader. This sounds pretty good and moves the spreaders in the right direction — and may even serendipitously turn out to be true on a few rigs — but it's inaccurate. That approach ensures only that the two angles above the spreader — where the spreader root intersects the mast and where the spreader tip intersects the shroud — are equal. This is not relevant. Not only is it easier to use a bevel gauge or the good eyes of a helper to guide your spreader adjustment, you'll get a better result.

- Editors

# A Squall, a Broken Shackle, and Hydrolock

Tarwathie side-tied, ready to go

### A Bristol and her crew are schooled on the Chesapeake

BY ED LAWLER

L was a calm, foggy Friday morning in Rock Creek, just southeast of Baltimore. The day before, Keith, Scott, and I had sailed *Tarwathie*, Keith's 1978 Bristol 29.9, across the bay from Rock Hall. Having spent the night, we planned to head further south today, continuing our Chesapeake Bay cruise. We didn't know exactly where we were headed, just south. We never planned this annual cruise too tightly.

MIN 3004 BE

We motored away from the dock at Fairview Marina, out the creek, around the White Rocks, and into the Patapsco. Through the mist that hung on the water, we could just see the old Sparrows Point steel plant across the river. Around 8:30, a breeze filled in and we raised the sails. Boats occasionally appeared out of the fog. When a large freighter appeared — was it even a mile

![](_page_22_Picture_0.jpeg)

away? — we resolved to keep outside the shipping channel. It was weird not being able to judge distances.

Keith swapped out a battery the day we left. The replacement battery wasn't new, but it was in better shape than the one it replaced, which apparently wasn't holding a charge. Given that we expected to have shore power almost every evening of our trip, our ability to keep the batteries charged, even with the refrigerator running, wasn't a concern.

By 9:40, the wind had piped up to the point that we reefed the main. A bit later, we noticed a well-defined dark band of clouds approaching. It wasn't a surprise; the morning marine forecast had called for a cold front to come through before midday, with a wind shift from south to northwest, increasing to 20 knots, with gusts as high as 40. The forecast hadn't raised any alarms for me. Northwest winds would allow us to cover a lot of miles and even if the temperature dropped, I'd brought enough clothing to stay warm.

The winds increased a bit, but nothing to get excited about. Then Keith or Scott made a comment, "The water looks different over there." Indeed there was a marked contrast between the water we were in and the water beneath the clouds defining the front. The weather was changing, fast. A line of squalls appeared just a little way off to the west.

When we felt the first raindrops hit, blown upon us from the approaching front, we donned our jackets and rolled up the jib. Each of us also put on our harness/inflatable PFD. Then, like someone had flicked a switch, the rain and wind both got serious. I had my hood up and my collar cinched tight with Velcro. Scott began taking pictures.

It was just after 10:00 a.m. and the sailing had become thrilling. We were flying along on a single-reefed main with no jib, going as fast as the boat had ever gone before, and tracking nice and straight.

By 10:30, Scott was steering and I was taking the pictures. The squall had passed, the sky had cleared, and we were sailing like a bat out of hell!

![](_page_22_Picture_9.jpeg)

The past hour had been pretty exciting, from dead calm, to a building breeze, to a dramatic line of squalls passing over the top of us! Taking stock, we'd anticipated what would happen, made the boat and ourselves ready, and handled the foul weather nicely. But where should we steer for now? As the front passed, our heading changed from southeast through west to more northerly. After some thought and discussion, we decided to sail back to Rock Hall.

But the winds weren't laying down, something that surprised us all. We assumed that after the front passed, they would gradually drop to something steady, maybe strong and steady, but none of us imagined that they would continue to increase in strength. They were now blowing steady, well into the 20s, and with regular, stronger gusts. Tarwathie continued to handle the conditions well, but we were concerned that we did not have a lot of options if the winds increased further. The second reef on the main sail was missing the reef points. We could take another reef, but we wouldn't be able to tie up the extra sail along the boom.

At 11:40, Keith recorded our position in the log with the note, "Course 320, speed 5.8, winds 24-28, way up!!, sailboat near Kent Island took in sails". This would be our last log entry for a while.

![](_page_23_Picture_1.jpeg)

Seeing ships like this emerge from the fog gave Ed and crew reason to stay clear of the shipping lanes, at left. Sailing into the maw of a fast-approaching squall line, *Tarwathie* has a first reef in her main, but is not set up to reef further, at right.

Keith took over steering and we headed northeast toward the shallow Swan Point Bar off Rock Hall. The waves were steep and running at least 2 to 3 feet, with an occasional higher one. Characteristic of the Chesapeake, the seas didn't take long to build, but we knew they would calm down quickly, soon after the wind dropped.

Broad reaching toward the two navigation light towers on the Swan Point

Bar, I wondered if we would have trouble crossing it. The water was shallow over the bar, only a foot or two deeper than our 4 ½-foot draft. With the sea state

as it was, I was concerned we'd pound the bottom. I reasoned that if we did make contact, we wouldn't be aground for long, just a bounce and then we'd be off. Scott reasoned that as we headed closer to the wind, we were heeled way over, thus reducing our effective draft substantially. We kept moving along at a good clip.

Approaching the bar, we decided to turn on the diesel. Once across the bar, we'd have a straight shot on a northerly course into Swan Creek and up to the marina, but we doubted our ability to sail that close. It would be a wet ride, but the diesel would make short work of it. I turned the key and pressed the starter button...clunk. No cranking, just a single clunk. I tried it again...clunk. I put my head inside of the companionway, to listen more closely, away from the howling wind. I tried it again... clunk. I wondered aloud if the battery was the problem, that we didn't have enough juice to turn the engine over. Keith was certain that wasn't it.

It occurred to me that since we were moving so fast, we could probably turn the key on, shift the transmission into gear, and jump start it, using the water's

# We all agreed that sailing in 40 knots was a hell of a lot different than hearing a forecast of 40 knots on the VHF. "

flow over the propeller to turn the engine over, like popping the clutch.

I got to work trying out my theory just as we started across the bar. The seas were suddenly and dramatically worse, bigger. We were on a broad reach, and Scott and Keith were getting soaked in the cockpit. I was under the dodger, working on the engine, and had no idea we were being pooped!

I gave up on trying to start the motor, we would have to sail her in. We discussed our options. Once across the bar, we had a little room, but would need to commit to a course quickly. Another option was to continue further north to Tolchester, but it wasn't well protected against a westerly. We considered the entrance to Fairlee Creek, but reasoned that it would be difficult, if not hazardous, to maneuver in these conditions. The northern side of the Sassafras River would be well protected, but that was further than we could plan to sail before dark. We all came back around to the original plan: tack into Swan Creek and up to Haven Harbour Marina. One advantage is that we knew the area and were completely familiar with the approach. We rolled

out a bit of the jib, being careful to keep a tight reign on the furling line. We figured that a little bit of jib would let us point higher and allow us to tack. We headed up as

far north as we could, into the full fury of the wind, the speed of the apparent wind increasing significantly. Gusts were now reaching at least 40 knots. We all agreed that it was a hell of a lot different to sail in 40 knots than it was to hear a forecast of 40 knots on the VHF. The wind continued to howl from the north and water sprayed all over the boat. We yelled to each other to make ourselves heard. Plenty of water came over the bow, and when we finally tacked over to starboard, it took us a couple of tries to keep our momentum and get the bow across the wind. Our performance wasn't exactly a confidence boost, but we were handling it.

From our new tack, it was still up in the air whether we could make the The author (at the helm) and Keith smiling in the cockpit during a boisterous sail, at right. Scott at the helm, post squall, far right.

entrance to the creek. We all soon realized we couldn't. In fact, we would need at least two more tacks to make it into the creek. The winds were crazy. and we were being pushed close to the limit. I couldn't stop thinking of the worst-case scenarios that could play out from the position we'd gotten ourselves, primary among them getting blown ashore. I even considered the shoreline, where we could make the softest landing, one of the sandy parts, and hopefully survive to disembark and walk back to our cars! There were worse times and places to be shipwrecked.

The further north we went, the narrower the channel became. We would have to tack again soon. According to the GPS and the daymarker, we were already at the edge of the navigable water, but the depth sounder indicated we still had room. Because we were heeled so far. I was confident in the shallow area, but I was keeping a close eye on it. Still shouting, we discussed when to make the next tack. "All right, ready, that's far enough—lets do it!" Keith turned the wheel, and over we went ... until a gust caught the jib before we could backwind it. We quickly fell off again and gained just enough speed, "Lets try it again!"

This time looked much better and I even yelled, "We are going to make it!" just before we were blown back to starboard. We were now well outside of the channel, and probably didn't have room for more than one more try. We quickly and carefully judged the waves, tried to anticipate the gusts, and gave it another go. This time we made it! We were now on a port tack, but not for long.

We shouted while discussing our next move. "Let's keep on this course as long as possible! We need to have enough room so we can make the creek

![](_page_24_Picture_5.jpeg)

on starboard tack, there's no way we can tack inside the creek in these conditions!" We continued our course and the houses ahead grew bigger. Riprap lined most of the shore, the sandy, soft landing spots further apart than they appeared earlier. My new comforting thought was that if we wrecked ashore, the boat may not make it, but we would.

Keith yelled into the rush of wind, "Ready? Lets do it!" This tack was smooth and we now focused on first clearing the orange day marker, and then clearing the wooden bulkhead protecting the boats at Gratitude Marina, at the mouth of the creek.

"I can't see!" From the wheel, Keith couldn't see past the main and jib, and so couldn't tell whether we'd clear the mark in our path. It was all he could do to stand and hold onto the wheel. Scott and I, positioned port and starboard, shouted that Keith was steering a good heading. With my right hand on the starboard toerail and my left hand holding on to the edge of the companionway, I stared around the dodger at the orange day mark and the wooden bulkhead. I velled again to Keith that he was doing fine. I knew I wouldn't have to shout so loud if I turned toward him first, but I couldn't take my eyes off the day marker and the bulkhead.

![](_page_24_Picture_9.jpeg)

![](_page_24_Picture_10.jpeg)

![](_page_25_Picture_1.jpeg)

One broken shackle, combined with just a bit of poor luck, could have caused a lot more damage, at left. Winds still whipped through the protected Haven Harbour Marina, as seen from *Tarwathie* at anchor, awaiting a tow, right.

In addition to taking water over the bow, the starboard rail was at least a foot underwater. Scott said later the inclinometer was pegged at 45 degrees. Despite the extreme heel, our course was as straight as could be, and we were flying! Closer to land, where I expected the wind to moderate, it only increased. We roared past the orange day mark and continued toward the bulkhead. Once in the creek, I knew that we could fall off a bit and things would ease up.

Flying past the closely spaced rows of pilings that made up the

bulkhead, we noticed several guys up top, cheering us on. Spectators on the walkway were cheering and shaking their fists — go for it! We must have been a sight, sailing into the creek in these howling winds. I wondered if any of them considered that we weren't doing this by choice.

Bang! We all looked up as the boom and mainsail crashed against the leeward shrouds. The mainsail was now whipping in the wind and our only propulsion came from the wisp of a headsail we had out. What now? Something had broken and our mainsheet was no longer attached to the traveler. We quickly fell off and all decided we could still make it up the creek. I wondered what our audience thought of us now. I wished I was watching the show instead of making it.

I clambered up the windward port side, up to the shrouds. Scott was down on the leeward rail and together we tried hard to pull the boom back to the boat's centerline. We needed some power from the mainsail and we wanted to keep it from getting ripped to shreds. From my vantage point on the high side, Scott's position looked precarious.

#### The Takeaway

Despite all the anxiety, the breakage, and the fact that our trip was cut short, our adventure ended successfully with no injuries, the boat intact, and memories that will last a lifetime. The biggest factor for our outcome is our tight-knit, competent crew. We know each other well and we trust each other from years of sailing together on each other's boats. We knew the weather forecast before heading out and when we first saw the menacing clouds, we all donned our PFDs and reefed the mainsail.

Our problems stemmed from our not being prepared for the weather we encountered (weather that was an eye-opener for all of us). Because we couldn't reef further, we ended up stressing the boat until something broke. Because the engine was not protected (neither with a valve nor a check valve in the exhaust system) against water entering, following seas were able to push water into the cylinders and disable the engine.

After the engine died, our decision to head into the channel and up the creek (we were overeager to get back to Keith's marina, but acknowledge our options were limited) was a risky one and luck had something to do with our not losing the boat ashore. In retrospect, we could have anchored somewhere in the bay to let the wind die down while we set up the second set of reef points, or arranged a tow. In the end, experience was a great teacher to us all, and we learned many lessons. We all now know the symptoms of a hydrolocked engine, roughly how to fix it, and more importantly, how to prevent it. We've been reminded that good old stainless steel fittings can break at inconvenient times. And we all now know that when a squall overtakes us, we can't assume the wind will die down soon after it passes.

We were probably overconfident that we could handle the predicted weather. That said, it's a confidence boost to have successfully dealt with what the day threw at us, keeping in mind that it was too close for comfort.

-EL

We quickly decided it was best to lower the main, and sail under jib alone. Only a couple-hundred yards away from the marina entrance, Keith headed up in a widening part of the creek so we could drop the anchor, lower the main, and catch our breath.

As Keith turned into the wind, Scott and I quickly released the halvard, wrestled the untethered boom and main, and secured the sail with ties. Seconds later, Scott was at the bow, readving the anchor rode. In our frantic states, I was impressed that he remembered to take the anchor through the bow pulpit and around the jib furling line so it wouldn't foul once we let it go. Adrenaline sure sharpens thought processes, but I'm not sure I'd have done the same. Scott let the anchor drop and we all waited to see whether it would hold. When he felt the hook bite a bit, Scott quickly let some additional rode out, secured it to

see if it would bite some more, then let some more out. When the scope looked good, Scott cleated it. *Tarwathie* yawed back and forth, urgently, but we weren't dragging. We were out of the woods and could finally relax. I needed a beer! All of us were amazed at how strong the winds were here, in the protected creek. Keith summed up everyone's thoughts, "I wouldn't want to go through this with anyone else but you two guys."

We found the broken stainless steel shackle that had connected the main sheet block to the traveler. We got a tow into the slip and Keith got a hold of a diesel mechanic who came right down and showed us that water had entered the engine's cylinders via the exhaust system and caused a hydrostatic lock. It seems that when the boat is heeled over hard, the water-lift exhaust system doesn't prevent strong following seas from pushing water into the engine. Luckily the old Perkins diesel is damn strong, and I hadn't done any damage in attempting to try to restart it. We watched the mechanic drain seawater from the exhaust and the cylinders and an hour later the engine was running.

We started planning next year's cruise right then.  $\Delta$ 

Ed Lawler has been sailing on Massachusetts and Rhode Island waters since the 1970s, first on a Sunfish, and since the 1980s on Kestrel, a Bristol 24 he has co-owned with Scott Drew. Ed and Scott have sailed the Chesapeake with Keith Hausknecht on Keith's Bristol 29.9, Tarwathie, since the early 2000s. The three sailors and friends have worked together in the environmental chemistry and consulting fields for even longer.

![](_page_26_Picture_7.jpeg)

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![](_page_26_Picture_9.jpeg)

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![](_page_26_Picture_12.jpeg)

# The Hull-to-Deck Joint

There's more than one way to fasten the two biggest boat parts

#### BY DAN SPURR

t is the nature of boats that they be built as two primary pieces — hull and deck. Over the decades, boatbuilders have devised various means of making the all-important attachment of these independent structures. Done correctly, they form one structure, absent leaks and able to withstand enormous and varied forces, for the boat's lifespan.

Before fiberglass boat construction, traditional plank-onframe wooden boat construction married the hull and deck using a sheer clamp and a beam shelf to support the deck beams, all reinforced by hanging and lodging knees. Building boats from fiberglass means there are fewer pieces — just the hull and deck. And there are three ways in which they are attached to each other: outward hull flange, inward hull flange, and the so-called shoebox or coffee can. And there are variations of these three primary techniques, such as when the deck includes a raised portion that serves as a toerail or bulwark, and the design determines the actual location of the joint.

#### **Key aspects**

When evaluating the critical hull-to-deck joint, consider these three key aspects:

- How the joint is sealed.
- How the joint is fastened.
- How the joint is covered.

#### Sealing the joint

Making the joint watertight is accomplished by inserting a material between the two surfaces, such as how a gasket or O-ring functions in other applications. Polysulfide caulk has been commonly used, as has butyl tape. These presuppose the possible eventuality of having to open the joint for some reason. With the advent of structural adhesives, such as methacrylate (Plexus) and polyurethane (3M 5200 and Sikaflex 292i), conventional sealants fell out of favor. (In addition to waterproofing the joint, structural adhesives add integrity. My friend Bill Seifert tells a story that took place at Tartan Yachts, when an external lead keel was sealed to the hull with 3M 5200. The crew wanted to change the keel, so they removed the bolts and lifted the hull with a crane, expecting the keel would stay in place on the ground. Nope.) In his book Ted Brewer Explains Yacht Design, Ted says quality builders glass-over the inside of a hull-to-deck joint for a strong, guaranteed waterproof seal. Glassing the inside of the joint with several layers of fiberglass tape serves two key aspects: to back-up mechanical fasteners and to assure a watertight joint.

Of course, an old joint can leak. But unlike portlights and hatches, a hull-to-deck joint can be significantly more difficult to repair. The best way to fix a leaky seal is to open it, remove old sealing material, and apply fresh material. But this remedy

#### **Outward hull flange**

**Inward flange** 

Shown with cap rail

![](_page_27_Figure_15.jpeg)

![](_page_27_Figure_17.jpeg)

![](_page_27_Figure_18.jpeg)

is very rarely going to be an option on an old boat. Instead, a boatowner is likely going to be left to apply some sort of sealant to the exterior edges of the joint, and smearing paste over a thin crack is not a very effective solution.

#### **Fastening the joint**

For fastening, methacrylate adhesive obviates the need for rivets, screws, or through-bolts. Applied to clean fiberglass surfaces, methacrylate creates a bond of which it's been said: What methacrylate has joined, let no man tear asunder. Not that it's likely you'll ever need to take a methacrylate- or polyurethane-fastened joint apart. Longtime Marblehead, Massachusetts, surveyor Jonathan Klopman, who has examined hundreds of hurricane-damaged boats during his career, says "You're not going to take [methacrylate-fastened joints] apart. Consider these permanent joints." And if a boat with extensive rail damage is going to be repaired, "you'll just glass it all together." Of the mechanical fastening methods, through-bolts are preferred over rivets and screws.

#### **Covering the joint**

How a hull-to-deck joint is covered is a function of cost, aesthetics, and function. Materials range from elastomeric extrusions to aluminum, stainless steel, and wood. In the case of the latter, it was traditionally teak, though older boats (especially European) often employed oak or mahogany. The location of the joint determines whether it will be a cap rail or rubrail. Rubrails are important in protecting the topsides of the hull when docking or rafting with other boats, so they need to be resilient and strong. Sourcing replacements can be difficult, especially if the builder is out of business.

#### **Three joint types**

*Outward flanges:* An advantage to the builder is lower cost; if the builder opts to fasten the joint with nuts and bolts, a single employee can install through-bolts and nuts working on the outside of the boat. A disadvantage of this joint is vulnerability to damage, such as from striking a dock or piling.

*Inward flanges:* These are more expensive to assemble by through-bolting, which is a two-person job, unless the builder has developed a clever method for one person. This is why lower-quality boats are screwed or riveted together. This type of joint is common on sailboats.

*Shoebox or coffee can:* The simplest, cheapest, and probably least-reliable joint is the shoebox, because forces applied to either the hull or deck are almost entirely transferred to the fastener. This joint type is more common on powerboats than sailboats. Upon examining damaged boats with this joint type, Klopman says that it's easy to see the difficulty builders have in trying to tightly mate the two surfaces. "It's often a wide gap, impossible for the builder to pull together with screws." He adds that in a serious collision, this type of hull-to-deck joint can easily "zip open." Screws out of alignment are often an indicator that a shoebox joint is working.

Finally, all hull-to-deck joints are trimmed for appearance sake. This makes a prominent feature of a sailboat (the joint) even more prominent. For this reason, trim can help or hurt appearance. A varnished, teak cap rail can accentuate a lovely sweeping sheer, and a wavy or scuffed plastic rubrail can detract from an otherwise pleasing impression of a boat.

There are many features and design aspects to consider when choosing a boat, primarily type, size, and cost. Then construction quality, coring issues, and tank materials and installation are common areas of inspection. But if you find yourself looking at your next boat, or even getting to know your current boat better, don't forget the all-important hullto-deck joint. If you begin your boat experience with a quality joint, you're way ahead of the old-boat game. *A* 

Dan Spurr is a Good Old Boat contributing editor and editor-at-large with Professional Boatbuilder. He is the author of seven books on boats and sailing including Heart of Glass, about the fiberglass boatbuilding industry, and was formerly senior editor at Cruising World and the editor of Practical Sailor.

![](_page_28_Picture_12.jpeg)

# A Step Above (or Below)

#### **BY DREW FRYE**

A ailboat designers have good knees. I know this because I've owned three sailboats with companionway step heights twice as high as the building-code-specified 7<sup>1</sup>/<sub>2</sub> inches. My Stiletto 27 had a 21-inch-high step and my Corsair F-24 has a 19-inch step. Even my PDQ 32 cruising cat had 16-inch steps to climb to reach the cockpit, something my aging parents, my wife's artificial knee, and I struggled with. In the case of each boat, there was room for designers to accommodate proper ergonomics, they just didn't do it.

Beyond my three examples, I've found that aboard many smaller boats, crews are supposed to grab the edges of the companionway and muscle their way up and down, I suppose. Depending on sea and knee conditions, this ranges between uncomfortable and unsafe.

A tested, effective, and simple solution is to lay one or more planks, across the cabin at the correct height, in fitted cleats. These steps are light and easily removed for under-companionway access. The Stiletto 27 came from the factory with a single step built this way (and conveniently, it serves also as a bench seat). Unfortunately, the drop into the cabin was nearly 40 inches, making for two very long strides across the single step. To this boat I added two additional, like steps, creating a set of stairs that was easy to navigate and easily set aside for access to the aft-storage area.

This seemed like the best solution for my Corsair F-24 as well. Because the total drop was 19 inches, I needed to add only a single step.

![](_page_29_Picture_7.jpeg)

### Safety and comfort increase with a companionway fix

I started by considering what I had on-hand: a surplus foam-and-fiberglass inflatable dinghy seat (alternatively, I could have used a  $\frac{3}{4}$ - x 8-inch board, as I have on other boats). Cutting the molded ends off the seat allowed me to see the cross section of the seat, and the shape that cleats would need to accommodate.

With this knowledge, I cut cleats from 2- x 2-inch hardwood blocks on a table saw. I cut the rabbet (a notch or groove) in two passes, being sure to leave more than half of the material below the deepest groove to ensure strength and room for bolts. When finished, I glued ¼-inch endplates to the backs using thickened epoxy and then trimmed them to shape with a disk sander.

I mounted each cleat differently because the port and starboard bulkheads I had to work with were very different. To port was a thin hull liner, to the back of which

![](_page_29_Picture_12.jpeg)

Drew made the step cleats from oak pieces, shaped to fit the cross-section of a salvaged dinghy seat, left. G/flex epoxy is semi-flexible when cured, an important property in this application, as the bulkheads may give a bit.

![](_page_30_Picture_0.jpeg)

![](_page_30_Picture_1.jpeg)

Drew thickened the epoxy with colloidal silica before applying to the backs of the cleats. He made sure the epoxy was thick enough to fill gaps and thin enough to penetrate. Another approach would have been to paint the surfaces with un-thickened epoxy, then thicken and apply the bedding coat, top. Finished cleats installed and ready for the step, above. Project complete: a factory-finish-looking step where one was sorely needed, above right.

I epoxy-bonded a  $\frac{3}{16}$ -inch-thick fiberglass backing plate, about 1-inch larger in both dimensions than the cleat. Then I epoxy-bonded the cleat to the liner and fastened the whole sandwich together using  $2\frac{1}{4}$ -inch bolts.

The starboard side was more complicated because the carpeted bulkhead is one side of a balsa-cored centerboard case (and there is water on the other side of it). Here, I cut away a cleat-sized rectangle of the carpet and removed the crumbly old glue and prepped the fiberglass surface with a cup brush on a drill and a multitool with 80-grit sandpaper. To mount the cleat, I epoxy-bonded it and used wood screws (just long enough to bite into the first layer of fiberglass, but not penetrate the inner skin) to apply light clamping pressure. These screws will never carry the load, but in addition to providing clamping pressure while the epoxy sets, they provide visual symmetry with the port-side cleat.

In all cases, I used West System's G/flex epoxy blended with colloidal silica. I ensured that it was thin enough to penetrate and wet, but not so thin that it ran. G/flex is not as strong as regular epoxies, but it bonds better to plastics and imperfectly prepared surfaces, and it better tolerates the

![](_page_30_Picture_6.jpeg)

small amount of flexing I expected from the thin hull liner (even with the backing plate).

The last step was to cut the surplus dinghy seat to the right size. I cut it about <sup>1</sup>/<sub>8</sub>-inch shorter than the actual span to prevent jamming and allow for hull movement. Then I dug out <sup>3</sup>/<sub>16</sub>-inch of foam from each end and filled with thickened epoxy to finish them.

The result is a rugged factory-looking step that is easy on the knees and simple to remove. Total cost of the project? It was all scraps, but \$20 should cover it if you have the paint and glue on hand.  $\Delta$ 

To solve boating problems, Drew Frye draws on his training as a chemical engineer and his pastimes of climbing and sailing. He sails Chesapeake Bay and the mid-Atlantic coast in his Corsair F-24 trimaran, Fast and Furry-ous. His book, Rigging Modern Anchors, was recently published by Seaworthy Publications.

![](_page_30_Picture_11.jpeg)

# The JOY of SEXTANT

#### BY JOE ROSENFELD

n the way back from Bermuda after the 2014 Newport-Bermuda Race, the inevitable "What's next?" came up. Captain Dana of his J/40, *Eagle*, suggested we do the 2015 Marion-Bermuda Race ... in the celestial navigation class.

For the record, my role as *Eagle*'s navigator is solely a function of nobody else will do it. My only celestial qualification was being owner of a plastic yard-sale sextant collecting dust in my basement, next to my "Learn Spanish" tapes. My only Spanish is "Hi my name is Joe and I have no Spanish." My celestial skills were almost as good.

When the captain asked if I wanted to navigate next year's

Marion-Bermuda Race, I said "My name is Joe, I have no Spanish."

To which he replied, "Great! It'll be fun."

How hard could it be? Vikings found their way around and they couldn't speak Spanish either. So, I told the captain, "No problem, I'll be ready. Piece of cake!" I dusted off the plastic sextant and within a few weeks I proved to my wife we were well north of the equator and likely in North America. She said she already knew that, but frankly, she had nothing to support her theory. I kept this to myself.

I turned to YouTube. I have learned more from YouTube than I ever learned in college, likely not the school's fault. I also signed up for online classes. I could now impress my wife with terms like celestial sphere and names like Admiral St. Hilaire. She rolled her eyes a lot. Then, with the race still the better part of a year off, I went sailing, lost focus, and sort of put it off.

When the captain called to see how it was going, I told him I could prove we were in North America 8 out of 10 times. He took this as humility, "Keep up the good work!"

Meanwhile, I was repeatedly outbid on eBay sextants. I wasn't worried, there were still 8 months before the race start. Then came ski season.

![](_page_31_Picture_12.jpeg)

### A J/40 races celestially to Bermuda

The next time the captain called, it was to let me know he was going to have the life raft inspected and pay the entrance fee. He seemed to want some assurance from me before he wrote the checks. I explained my view of the celestial sphere and threw in "line of position" for good measure. Impressed, he wrote the checks.

I tamped down a flash of panic by reminding myself that a very long time ago, people who couldn't read figured all of this out. Deep breath.

With six months to go, real doubt was creeping in. How *did* those axe-wielding, people-chopping Norsemen figure this stuff out, and without YouTube?

Then, a breakthrough!

Late one cold winter night over a Manhattan, browsing the internet, I found William F. Buckley's 1980's celestial navigation how-to video. Back in the day, this was sold as a VHS tape with worksheets. It walks viewers through the steps necessary to obtain a position fix using the intercept method, the one developed by Admiral St. Hilaire in 1837. I was able to find and download a blank copy of the original worksheet.

With just four months to go, I gave up on eBay and bought a new Astra IIIB sextant and an artificial horizon. I felt like

![](_page_32_Picture_0.jpeg)

the celestial gods were in my corner when the instrument arrived with a zero error factor.

I used a handheld GPS in the backyard to establish where I was. Then I took sun shots using the artificial horizon. Then I took those shots down into my corner of the basement to work through the calculations. I did this hundreds of times. Each time, lining up the artificial horizon, taking the shot, and marking the time while leaning against my house, seemed difficult. I would later learn it's even more difficult to do this from the rail of a surfing J/40 in the Gulf Stream.

Three months out and I could take a sun shot (leaning on a house) and work the math.

The captain called and suggested we take our wives to Annapolis for a few days. We'd eat some great seafood and attend the Annapolis School of Seamanship's two-day class on celestial navigation. Nonchalantly, I agreed, immediately. As it turned out, the instructor, sailing writer Ralph Naranjo, brought his wealth of practical knowledge to the class. I left feeling what may have been the first twinge of confidence.

When Lake Ontario thawed, I was able to get a few shots over water with a real horizon (leaning against a tree for support). The reoccurring Ivory Coast shipwreck nightmares became less frequent. Then race day was upon us.

At our dinner the night before, I sensed some doubt and trepidation from the rest of the crew. Discussion tacked around a self-imposed deadline for turning on the electronics after having not found Bermuda. In the end, we compromised; barring injury or impending danger, we would keep sailing until we ran out of food or found Bermuda. I stashed a box of cookie bars and a bottle of rum under my bunk, in case I later needed to barter for my life.

The race started with a long shifty beat out of Buzzards Bay. We rounded Martha's Vineyard on a southerly course. As the sun set, we plotted our position and shut down the electronics at the race-established point, 25 miles off the U.S. coast.

With the fleet starting to spread out, we settled into our watch schedule. Each hour, the crew logged our speed, distance, water temperature, and course. I plotted the data on a chart every four hours. Unfortunately, the wind wouldn't allow us to run the rhumb line.

At dawn, it was time to earn my bunk. I officiously extracted the sextant from its box and made my way

![](_page_32_Picture_12.jpeg)

to the weather rail. My intent was to get a shot in that brief period when I could still see a few fading stars and the awakening horizon. The laser-like gaze of the crew from the cockpit was intense as I raised the instrument to my eye. I had crewmember Ron read and record the time when I yelled, "MARK!" We did this three times. The boat wouldn't hold still, the stars all looked the same to me, and my glasses were salty.

I dropped the instrument down to my chest and turned toward the cockpit. The crew looked at me expectantly. Scanning the horizon, I could still see boats around us, many of which were on the opposite tack. I announced to the crew that we should tack, then went below to crunch the numbers.

Below, I realized that star/moon shots were out, and doing math below decks with salty glasses makes me seasick. And I was doing it old-school: almanacs, pencil, and paper. No apps or computers for us. Thank you, Mr. Buckley.

I half-remembered one of Ralph's tips from the course. He had mentioned taking shots when the sun was between the boat's position and the next landfall, to keep track of the rate of approach. At least that's what I think he said. I decided that from then on, I would take shots early in the am, mid-day, and late in the afternoon to build a celestial path we could use to sail *Eagle* to Bermuda. In between, I would dead reckon and get enough sun shots to develop some fixes. Armed with a plan, the Atlantic seemed a bit smaller and Bermuda a touch bigger

I suspect real navigators continually calculate and factor in set and drift. The coastal navigation class I took explained it well, but failed to mention that in the real world, I would have to figure out the speed and direction of the current. *Eagle* is a weatherly boat with good sails, so outside the Gulf Stream, I was confident that our DR corrections were good.

I was able to get several sun shots during the daylight hours. I'd do my best to get the sun to kiss the horizon as *Eagle* worked her way through the building seas. I'd holler, "MARK!" and my crewmates would record the time. Rarely did any of the multiple efforts match, so I'd pick the one I thought might have been our best and go below to crunch it.

By nightfall, there were no other boats in sight. When the crew expressed concern over this, I explained that we were probably too far ahead to still see them, then I passed out a few cookie bars. They took their cookie bars below. I could hear them muttering. I wasn't worried, I had the SD card hidden in the cookie-bar box under my bunk.

The pre-race plan had been to sail south of an adverse eddy and jump into the sweet meander that was aiming toward Bermuda. These features were clearly delineated on our Jenifer Clark's Gulfstream chart. We even plotted a course that would set us up perfectly, if only we knew where we were after all the tacking the day before.

By day three, we were solidly in the Gulf Stream sailing at 7-plus through the water and hopefully faster over the ground. SOG went away with the chart plotter, but the water temp was in the high 80s and the wind building. We were now able to close reach directly toward where I truly hoped Bermuda was. Crewmembers Ron and John rigged the inner forestay and bent on the storm jib as it now seemed likely that the squall lines mentioned at the skipper's meeting would arrive just in time to enhance our Gulf Stream experience.

It rained so hard that the waves seemed to round off the breakers and it looked like the ocean was smoking. None of us even looked at the wind speed and surfing down waves in a cloud of spray doesn't lend itself to accurate navigation. I grew increasingly nauseated below, squinting at almanacs and crunching numbers.

As the sun rose on day four, we were close reaching under a full main and number 1. But to where? That was just about anyone's guess.

Over coffee I noticed the crew eating cookie bars, *my* stashed cookie bars. After a few minutes, I casually went below to look under my bunk. The box was gone. I heard muted laughter on deck. I returned to the companionway and asked about the box.

"It's in the garbage."

"The overboard-table-scraps garbage or the dispose-ofashore garbage?"

"Oh, we put the coffee grounds in it and tossed it overboard. And we found the rum."

I went below to calculate the exact number of ways we were now screwed. I gave up. The odds of our position matching our plotted position seemed low, and there are a lot of shoals on the approach to Bermuda, assuming we ever found Bermuda. We hadn't seen another boat in days. The chart plotter was no longer our back-up salvation, it was just a place to store the screen cover.

Then the crew began clamoring to turn on the chart plotter. I reminded them that we all had sailed here before, that we know how long this trip takes and that we were still likely outside the 50-mile radius of Bermuda. Turning on the electronics now would mean incurring a penalty.

I pulled the sextant out, only to find it a salt-encrusted lump. The only way I could free it up was to soak it in hot

water and scrub it with my toothbrush. Once clean, I took a dozen shots before noon. The boat motion was gentle and things kinda seemed in the ball park, if I did it right.

> Finally, the pressure was too much. I made a final shot and plotted a fix off the now highly

![](_page_33_Picture_22.jpeg)

![](_page_34_Picture_1.jpeg)

suspect Dead Reckoned Estimated position. I announced to the captain and crew that we were 20 miles north of Bermuda and on a course to intercept. I think I sounded confident. The crew held up the SD card holder and asked if it would help. What are friends for, if not to mess with?

According to the plotter, my stated position was 7 miles in error to the north on latitude, and 20 miles in error to the west on longitude. We likely would have sailed right on by Bermuda in the daylight hours. We may have seen a glow in the night sky. In the end, we finished in the bottom half of our fleet, but not last. The people of Bermuda were their usual welcoming, hospitable selves, putting on an amazing party.

After a thorough review of our plotting sheets by the race committee, captain Dana was awarded the Cooks Trophy for doing the race old-school. Along with the other first-time celestial navigators, I was awarded a sextant lapel pin for keeping the tradition alive.

For *Eagle*, the race was a success. Four good friends got to sail a great boat to Bermuda one more time. No one was injured, we didn't break anything, and we mostly did it without electronics.

Sailing back to Newport, we beat our own personal best by several hours. I didn't once unbox the sextant. When the captain began asking, "What's next?" I told him I'm going cruising with my wife for a few years. While we're gone, the Astra will keep my yard-sale plastic sextant and "Learn Spanish" tapes company in the basement. At least for now, I can say that my celestial navigation skills are a bit better than my Spanish. *A* 

Joe Rosenfeld started working on boats as a teenager, when his \$100 wooden catboat sank the day after he sailed it home. Diphtheria mostly floated through Joe's high school years until a shoreside keg party sent it to Valhalla. Over the next 40 years, the quality of the fixer-uppers went from "left for dead" to "just a little down on her luck" as Joe's career as a high-voltage lineman progressed. Along the way, he became an award-winning restorer of wooden boats. Joe, his wife, Mary Beth, and their fox terrier, Flexy, are cruising on their 2003 Tartan 3700, Sapphire.

![](_page_34_Picture_9.jpeg)

![](_page_34_Picture_10.jpeg)

# essons from Experience

### A refit turns a Great Lakes daysailer into a Caribbean cruiser

BY BOB ALLENICK

hen my wife, Sheila, and I bought Her Diamond, our 1991 Freedom 38, she was the ideal daysailer and vacation boat, an opinion affirmed by this magazine ("Freedom 38: A well-built sloop with an unstayed mast," January, 2014). But we didn't buy our Freedom 38 to daysail and vacation aboard, we bought her to fulfill our 20-year dream of cruising in retirement. Thus, we were challenged to convert our daysailer to a liveaboard cruiser. Accordingly, we bought Her Diamond 10 years before our expected retirement date to allow us time for a lengthy refit. As happens, life and work got in the way and our refit was squeezed into over just the 6 months between my retirement date and the sunny July day in 2017 when we cast off our dock lines and sailed away.

Since departing, we've discovered that our kind of refit is really a two-phase process: first, we did what we *thought* was necessary based on research, then, we did what we *learned* was necessary based on experience. We've learned a lot along the way.

Our preliminary refit budget was \$24,000 and our goals were to ready the boat for sailing in saltwater, for liveaboard comfort, for passagemaking, and for anchoring (which we almost never did on the Great Lakes). In the end, I completed about 70% of the work and left 30% to the yard.

#### Sailing in saltwater

We knew *Her Diamond*'s fresh water VC17 bottom paint wouldn't do the job in saltwater. To remove the old paint, we had the bottom pressure blasted with a pulverized-glass medium. Once all the old paint was removed, the yard sanded the surface fair before coating it with an epoxy barrier coat. Over that, they applied Sea Hawk Biocop, a high-copper-content bottom paint. Because we knew we would be moving aboard, we had the yard raise the waterline by five inches, narrowing our broad boot stripe to just one inch. Fully equipped and loaded, she now shows two inches of bottom paint above water. Thank goodness boats float higher in saltwater.

The author enjoying the fruits of his efforts: a boat transformed and underway in warm, clear water. Inset, *Her Diamond* with a fresh coat of saltwater-friendly bottom paint and a much higher waterline.

![](_page_36_Picture_0.jpeg)

![](_page_36_Picture_1.jpeg)

After a year of cruising, Bob and Sheila realized their original power-generation plans were unrealistic and installed a 320-watt solar panel and MPPT controller, above left. Except for their Yanmar's alternator, this 3.5-kilowatt diesel-powered generator was originally going to serve as the only batterycharging power source aboard *Her Diamond*, at right. The author would welcome a larger battery

![](_page_36_Picture_3.jpeg)

bank, but there is no room aboard this Freedom 38 for more, top right. Air conditioning aboard comes at a steep cost in terms of power usage, but Bob and Sheila installed a dedicated AC circuit for their system, so at least when connected to shorepower, they sleep better in the tropics, far right.

#### Liveaboard comfort

Primary to liveaboard comfort is plenty of power. We installed a 3.5-kilowatt Next Gen AC diesel generator. I did the wiring and installation of the controls. The boatyard built the platform, installed the generator, and ran the plumbing for exhaust and fuel connections to the boat's diesel fuel tank. (I have no idea how they shoehorned the unit through the 24-inch-wide opening to mount it in our cavernous lazaret.)

Because the unit burns only 1/10gallon of diesel per hour, we decided to forego solar panels and a wind generator. After a year of cruising, we realized how unrealistic this plan was, especially as we shifted away from marina stays and started spending more time on the hook. We thought we'd be able to fully charge our modest 300-amp-hour AGM house bank by running the generator two hours every other day, but because the charge-acceptance rate of lead-acid batteries slows dramatically after reaching the 80-percent-charged point, a more realistic generator-run

projection is eight hours every other day. We now understand why 90% of cruising boats (power and sail) are sporting solar panels.

In our first year of cruising, we mounted a 320-watt solar panel atop our new davits, connected to our batteries through a Victron MPPT 100/30 solar controller. Our batteries now silently receive electrons throughout the day, and we get away with running the generator for several hours every four days, which coincides perfectly with our water-making schedule.

To ensure we get the most power out of any time we spend motoring, we upgraded from our stock 30-amp Yanmar alternator to a 100-amp Balmar alternator with an external regulator.

And having ample power allows us to run an air conditioner at anchor. Under the V-berth, we installed a 16,000-BTU reverse-cycle Dometic unit. I did the plumbing, wiring, and most of the duct installation. The yard built the platform and installed and commissioned the unit. Humid, buggy, windless nights in the tropics are no longer sleepless!

![](_page_36_Picture_12.jpeg)

For marina stays, I later installed a second 120-volt AC circuit dedicated to the air conditioner (which means new shorepower cords with splitters).

Despite having adequate means to charge our batteries, we knew that at anchor, we'd be taxing them with our lifestyle. To ease the burden on the house bank, we installed a separate starter battery (for the diesel inboard and generator) and connected it to the system using a Blue Sea battery switch and an Automatic Charging Relay (ACR) that automatically combines the batteries during charging and keeps them isolated otherwise. We installed a Xantrex LinkLite battery monitor and I replaced most of the 12-volt wiring aboard.

I replaced our 12-year-old Lifeline AGM batteries with identical new batteries: three 100-amp-hour group 27 12-volt AGM batteries, providing a total modest capacity of 300 amp-hours.

Since leaving, we've learned that also primary to liveaboard comfort is plenty of water. Before leaving, friends suggested we would not need With the clear hose pulling raw water from a through-hull, the white hose dumping fresh water into the tank, the green hose sending brine to the galley sink, and the generator providing AC power, the Rainman portable watermaker provides Bob and Sue with all the water they need, below.

![](_page_37_Picture_2.jpeg)

a watermaker in the Bahamas because water is available, for purchase, almost everywhere. Their rationale was that we could buy a lot of water at 50 cents per gallon for the money we'd save not buying a watermaker. This made sense to us.

Then we arrived in the Bahamas and found the water quality variable. We learned that further south (mostly in the Exumas), good water for sale is harder to find. Between showering, dish washing, and drinking, our 62-gallon supply was exhausted much too quickly. After much research, we purchased a Rainman 115-VAC portable watermaker. Because the pump and membrane units are relatively heavy, we installed a diverter valve on the air conditioning raw-water inlet and use the watermaker down in the cabin, where it is stored. The product water is pumped directly into our boat's water tank through a clean-out plate and brine is discharged into the galley sink. The unit produces up to 18 gallons per hour and is powered by our diesel generator.

![](_page_37_Picture_5.jpeg)

![](_page_37_Picture_6.jpeg)

Only after throwing off the docklines and heading for blue water did we learn that living aboard didn't substantially decrease our need for connection to the internet. We sought to download books, do route planning, research destinations and boat repairs, and stream our favorite TV shows. We found that many marinas and mooring fields provide WiFi, but the signal was rarely particularly strong, especially as we moved further away from the marina office. We ended up installing a Coastal WiFi booster, which captures and amplifies available WiFi signals and creates an in-boat network, allowing us to simultaneously connect multiple devices.

But none of our enhanced connectivity mattered if we were getting eaten alive by flying pests. Our Freedom came with portlight screens to keep out flies, mosquitoes, and no-see-ums, but we built additional screens for the companionway and overhead hatches using scraps of teak and aluminum framing. What a difference.

Production boats from the 80s and 90s were commonly fitted with numerous cavernous cabinets. But nearly all these cabinets lack interior dividers or shelving to allow organization of clothing, linens, personal items, and ship's stores. We carefully During the refit, the author installed shelving in several large lockers, and used the space he needed to run AC ducting and some electrical. at left. Below left, it took only some teak scraps and aluminum frames to build needed hatch screens.

measured (no right angles on boats) and built shelves for nearly all the lockers and cabinets. In some of these cabins, we stole a bit of space for wiring and electronic equipment, the inverter, generator controls, AC ducting, and a secondary AC breaker panel for the air conditioning.

#### Passagemaking

When we purchased *Her Diamond* in 2006, she was equipped with Raymarine ST60 wind, speed, and depth instruments. When the depth sounder head stopped working, we replaced it with a Raymarine i50 unit, reusing the transducer and wiring. But because the ST60 series operates on a daisy chain and the i50 series uses a backbone wiring approach, we had to put the new depth instrument at the end of the daisy chain, fooling it into believing it was on a backbone.

Our original chart plotter was a monochrome unit from the time of Christopher Columbus. The radar was even older. Though we never felt we needed radar sailing on Lake Erie, we knew it was time to make some electronics upgrades. We already had a suite of Raymarine instruments and we opted to stick with the same brand, for compatibility and tech support purposes. We installed a Raymarine eS78 Multifunction Display (MFD) unit with digital radar. The radome communicates with the MFD via its own WiFi network, making rewiring much simpler. In addition to pulling new wires for the system, we needed to install a converter so the old SeaTalk instruments can communicate with the eS78's new-generation SeaTalk protocol.

Our next focus was our communications systems. We removed the vintage Sheila is all smiles before *Her Diamond's* mast gets painted. While the mast was pulled, the couple installed three new sheaves to ensure that halyards run smoothly, below left. Block and tackle preventers help control the long boom attached to the large main of the Freedom 38, at right. Below right, *Her Diamond* is in the middle of having a second hawse pipe added at the bow, which will make it easier to manage two sets of rode.

![](_page_38_Picture_1.jpeg)

spinnaker is relatively small. We have used it only four times since departing.

Because jibing with a massive main is no fun, we installed block-and-tackle preventers. Attached just aft of the rigid vang, they provide 4:1 purchase between the boom and the perforated toerail on either side. We lead control lines from cam cleats on the toerail to just outboard of the cockpit. In addition to controlling the boom in the event of an accidental jibe, the preventers help stabilize the boom when motoring in ugly seas. Being able to adjust the preventers without leaving the cockpit is an important safety feature.

Another safety consideration is preventing falling overboard. We set up jacklines in both the cockpit and along each side deck. Our rule is that when sailing at night or offshore, we're clipped in.

Perhaps the most important safety item we purchased is a four-person offshore life raft. We have cruising friends who have opted to not install a life raft, reasoning that rescue is close at hand with an EPIRB and that their dinghy provides an adequate rescue platform should they need to abandon ship. I disagree. I think waiting for rescue in an open dinghy, halfway across the Gulf Stream, in a squall, and being tossed by huge standing waves, is neither safe nor secure. And if the EPIRB fails?

#### Anchoring

In 33 years of sailing on Lake Erie and nearby waters, I believe we anchored a total of three times. Our two-week vacations over the years involved sailing from marina to marina. Lacking any substantial anchoring experience, we really didn't know how to prepare the boat, and we didn't give it enough

![](_page_38_Picture_8.jpeg)

marine VHF radio and replaced it with a Standard Horizon Matrix unit that includes built-in digital selective calling (DSC) and an AIS receiver. Having lived with an AIS receiver, we'd like to install an AIS transceiver. The broadcast function would allow others to track and hail us. In addition to the new VHF at the nav station, we wired and installed a remote radio extension at the helm. During our Great Lakes sailing days, we rarely used the VHF, but we find now that we use the radio often, sometimes dozens of times per day, and usually from the helm.

We considered all the options for communicating outside of cell phone and VHF range. We weighed SSB (very expensive and complex), satellite phone (very expensive), and cell phone boosters (expensive and mixed reviews on effectiveness). We ended up purchasing a DeLorme (now Garmin) inReach and haven't looked back. The unit is reasonably priced (purchase and service packages), easy to use, and enables us to email, text, receive weather forecasts, and leave a trail of cookie crumbs on a tracking map that friends and family can access online. To round out our communications

![](_page_38_Picture_11.jpeg)

package, we purchased a Standard Horizon HX870 handheld VHF with DSC and built-in GPS functionality. We use this radio in the dinghy and would throw it in the ditch bag.

With her unstayed mast, our fractional-rigged sloop incorporates a much larger mainsail than is found on other 38-foot sloops (and with a lot of roach). We rely on our main. In preparation for our journey, we knew we needed to replace our 1991vintage mainsail. We had a new main built by Ullman at their production facility in South Africa. We went with medium-weight cruising cloth and three reef points. We were very pleasantly surprised by the improved performance.

At the same time, we added an asymmetrical spinnaker on a top-down furler. But since leaving, we've found that because the Freedom's mainsail is so large, we do most downwind sailing under main alone. And because of the <sup>3</sup>/<sub>4</sub> hoist on our fractional rig, the consideration during our initial refit. We did replace our old plow anchor with a 35-pound Manson Supreme, having read that the new generation of roll-bar anchors have excellent setting and resetting qualities.

And while the Manson performed admirably during the times we used it, at the end of our first year cruising, after a respected sailing friend referred to a heavier anchor as a sleeping pill, we exchanged the Manson for a 44-pound Rocna. We haven't looked back; it can blow in the Bahamas.

After departure, we also added a Davis Instruments anchor-line snubber and a Mantus chain hook. And it was on our way south, after anchoring in the muddy Chesapeake, that we learned we needed a deck washdown hose. There were times when so much mud came up on the chain that its shape and size were completely unrecognizable.

![](_page_39_Picture_4.jpeg)

I installed the pump in the head and T-ed off the existing raw-water intake. Now that everything is dialed in, we can only wonder what took us so long to discover the joys of anchoring.

Of course, anchoring out creates a need for getting ashore. There are many high-quality RIB dinghies on the market and most people we talked to like the dinghy they own. We ended up buying a 9.5-foot BRIG RIB. To power it, we opted for a 4-stroke 6-horsepower Mercury. We chose this size because we knew we would be moving Down below, the anchor locker is newly divided, allowing *Her Diamond* to carry and manage two sets of rode.

the engine back and forth between the dinghy and the bracket on Her Diamond's stern rail. The two of us could manage the 6-horsepower Merc. But having lived with it, we've found the engine lacking in power. We can't exceed six knots in calm conditions. After loading the dinghy with our folding bicycles, groceries, or additional passengers, or motoring into head winds or seas, she is substantially slower, too slow for us. A four-mile run to a neighboring island for snorkeling becomes a very long trip. We should have added an outboard hoist to the stern rail and purchased a 9.9-horsepower outboard.

Transporting our dinghy yielded challenges we could not have

![](_page_39_Picture_10.jpeg)

Bob, by this point a seasoned cruiser, adjusts the height of the port-side davit arm during installation.

anticipated prior to our transition from occasional daysailors to liveaboard cruisers. On our previous boat (a Freedom 30), we'd been happy with the Dinghy-Tow for years of Lake Erie sailing. The Dinghy-Tow is a great system that allows the dinghy to be towed transom-to-transom with the mother boat. The system lifts the dinghy stern well above the water and only the dinghy bow drags behind. In this way, the engine can remain on the dinghy when being towed. Before leaving the Great Lakes, we ordered and installed a Dinghy-Tow unit on Her Diamond. This was a mistake.

We've since removed the system and installed a set of Garhauer davits in its place. The davits are a better and

![](_page_40_Picture_3.jpeg)

more secure way to carry the dinghy for the kind of traveling we are doing. Deploying and retrieving the dinghy from davits is much easier and we're relieved of the ½-knot penalty in drag.

At this point, we've spent over three times our original \$24,000 refit budget

(final refit tally is about 60% of our boat's market value). While that may seem crazy, we can justify it knowing that we've ended up with a boat in very good condition, and one with which we are familiar and comfortable. It's hard to put a price on that. As I write this, we are getting ready to leave Charlotte Harbor to return to the Bahamas (via the Keys) for another winter. Our good old boat continues to get better with each passing year. And in this sailing retirement life, it seems like the same might be true for us. *A* 

Bob Allenick has held a 50-ton USCG Master License since 2013. He and Sheila both grew up sailing and have been sailing together on their own keel boats since 1986. Bob and Sheila left Cleveland on July 23, 2017. Their blog and tracking map can be found at herdiamond.net.

![](_page_40_Picture_8.jpeg)

![](_page_40_Picture_9.jpeg)

# The Canals of New York

### A first cruise after downsizing

BY SUSAN P. GATELEY

![](_page_41_Picture_4.jpeg)

ike many baby boomers, my husband, Chris, and I aren't quite as quick, strong, and nimble as we once were. Increasingly attracted to the advantages of a boat with smaller sails, lighter ground tackle, and lesser draft, we sold our 32-foot sloop, *Titania*, a 1968 Chris Craft Cherokee, and bought a trailer-sailer, a shoal-draft 3,000pound Compac 23 called Tringa. We like having a boat we can push around when leaving the dock and a mast we can step ourselves. Tringa doesn't sport a 7-foot bowsprit that we have to negotiate when time to reduce the headsail, and we can keep her at home on a trailer during the off-season, where she's easy to work on. She's a relatively new boat by our standards, having been built in 1985, and came equipped with a relatively new motor and trailer. In sharp contrast to our last boat purchase ("That Sinking Feeling," July 2015), she was ready to go.

We were intrigued by the notion of traveling overland at 60 miles per hour with our new boat, a gateway to distant waters and new horizons. We envisioned winter vacations spent exploring Florida's shallow waters, or perhaps a threeweek trip west to the greatest Great Lake, Superior.

We decided our first cruise aboard *Tringa* would be to Ithaca, home to Cornell University and Ithaca College. It's

famous for its museums, culture, and natural beauty, but it's also where *Titania*'s new owner berthed her, and visiting our old boat on our new boat sounded like a plan. Furthermore, we wouldn't need to tow *Tringa* because from our home it was just 10 miles by water to Oswego, where the Oswego River connected Lake Ontario to the Seneca River (both part of the 525-mile New York State Canal System) which connected to the north end of 38-mile-long Cayuga Lake, at the southern end of which was Ithaca. We started packing.

Lockport

**Buffalo** 

CANAD

Our first surprise was how roomy the 23-foot pocket cruiser is. I crammed the pressure cooker, a sizeable cast-iron skillet, and an amazing amount of dry and canned goods into her various spaces and lockers, and we stuffed her forepeak with bedding, more food, mast-lifting gear, and our minimal cruising wardrobe. *Tringa* settled on her lines, but there was still room to stretch out on the two main cabin berths. A big factor accounting for the Compac's interior space is her lack of an inboard engine and the associated shaft, exhaust system, and fuel tank. Instead, we used the space under the cockpit to stow a large cooler, wastebasket, toolbox, and a

*Tringa* side-tied near a bridge passing over the New York State Canal System in Seneca Falls, at top.

The New York State Canal System

half-dozen 1-gallon water jugs. An outboard motor (hung on a transom bracket) provided all the non-wind propulsion we needed.

Oswego

Svracuse

LAKE

**ONTARIO** 

Seneca Falls Oswego

Seneca River

Cavuaa

Lake

Syracuse

Gateley

Cruise

Ithaca

Rochester

We set sail with a light wind and arrived at Oswego in time to take the mast down and make our way through the first three locks. Canal travel on the New York State system is strictly a motoring affair, thanks to the many low bridges that traverse the waterway.

Using the pivoting A-frame system and a rope come-along for controlling descent of the deck-stepped mast, we dropped the spar and secured the rig upon arrival in the Oswego River. We were surprised that this unstepping took us a couple hours. If it took two hours each way to down-rig, and then the same to raise and re-rig, was it worth it for a day's sail? We decided it wasn't and left the rig down, shifting our cruise destination from Ithaca to Seneca Falls. Perhaps someday we'll drive down to visit our old boat in Ithaca.

We were pleased with the prospect of spending more time on the New York State Canal System, a National Historic Landmark. We had previously traveled the eastern part of the Canal System during a trip to the coast, so we had some idea what to expect.

Opened in 1918, the system is composed of the Erie Canal, the Oswego Canal, the Cayuga-Seneca Canal, and the Champlain Canal. While each of these canals existed prior to 1918, the New York State Canal System (formerly known as the New York State Barge Canal) was an upgrade to all the existing canals. While some of the original canal routes were preserved, much was new, and all of it was dredged to a minimum of 12 feet deep and widened to at least 120 feet wide. Modernization of the canals ceased in 1970, as commercial goods transport had largely moved to land transport. Today, there is very little commercial use of the canal system and the 57 locks are maintained strictly for private recreational vessels and flood control.

Albany

/ERMONT

MASSACHUSETTS

The creak, groan, and heavy thud of the lock doors and the descent into the clammy cool depths of the slime-covered lock chamber revived memories of

our 1999 canal crawl, though little *Tringa* was far easier to manage in and out of the locks than her 9,000-pound predecessor. We found the waterway lightly traveled. As we followed the winding course of the Seneca River through the early summer landscape, we rarely shared a lock with another boat.

The legendary Canal that helped build a nation and change history is now largely bypassed by modern society. With its 100-year-old machinery and early-twentieth-century tugs and work boats, it's a living history museum. As we passed through the countryside, we caught glimpses of old stone ruins of former canal locks along the shore and passed abandoned aqueducts and bridge supports from former days of canaling. In several towns, abandoned brick factories stood along the water, their windows shattered and their walls crumbling. We often traveled for miles without seeing any sign of current human habitation. In 1850, this canal was the interstate highway and 200 boats a day passed through the busier locks. Today, the pace of life on the canals is slow and the calm waters reflect the passing countryside. Along

![](_page_43_Picture_1.jpeg)

Susan and Chris approach one of the locks on the Oswego Canal, which connects Lake Ontario to the New York State Canal System. To the right of the lock, water spills over the length of the damn, left. Susan waits on the foredeck next to a lock wall as the water level rises, slowly lifting *Tringa* and crew, right.

#### **The Waste Factor**

-SG

Cruising aboard such a small boat, without a dedicated head or holding tank, presents a particular challenge. We considered several options before settling on the Double Doodie waste bags and Bio-Gel powder (an absorbent that deodorizes, gels, and promotes composting). This is a waste-storage system used by leave-no-trace backcountry hikers, and it's nothing more than a heavy-duty zip-lock garbage bag reinforced with a second layer of plastic and sized to fit the standard 5-gallon bucket (with the powder added).

Bio-Gel-powder effectively turns biological waste materials from humans or animals into a gel that is safe for "direct and indirect contact." Bio-Gel-treated waste packaged in bags like this is approved for landfill disposal and we were thus able to toss them in canal-side trash receptacles. This made our trip convenient (and possible), but the idea that we were putting perfectly compostable human manure inside two plastic bags with the half-life of plutonium offended my gardener's aesthetic. I'll note too that we did not have an odor problem with this system and that we also endeavored to keep urine out of the bags. For pee only, we used a 2-gallon jerry jug purchased just for this purpose. We emptied this at convenient canal rest stops.

Surprisingly, we didn't use as many bags as forecast, as we found more waterfront restrooms than we imagined. We found facilities for boaters complete with showers, laundromat, lounge, free 48-hour docking, and flush toilets. Marinas, village lunch counters, and a canal-side restaurant also provided relief.

Despite the success of this system, we've not left the drawing board. Composting is still our preference and although we could not figure out a way to fit a full-scale composting toilet aboard our little boat, we're now looking at something called C-Head, a more compact version of the composting toilets we have seen aboard other boats. the banks, we caught glimpses of deer, fox, muskrats, fishing herons, soaring ospreys, and a mink that scampered lightly over the dead limbs of a fallen tree. We locked through several times with mother mallards and their ducklings in tow.

The canal system is about predictability. In pre-fossil-fuel days of sail, canal travel and trade could be done on a schedule, as horse- or mule-drawn barges traveled long distances at a known rate. As a result, towns prospered. Cities like Buffalo and Rochester arose, and Clinton's Ditch made New York the Empire State.

The canal also brought a flow of fresh ideas that fueled new notions and social movements across the pre-Civil War countryside. This trade helped fuel a burst of technological development and a surge in progressive politics that fostered abolitionist and women's rights movements, as well as a host of radical and downright odd Utopian and spiritual endeavors and communities. We learned much of the region's history at Seneca Falls, home to several museums on technology and women's rights.

One unknown when we cast off was our motor and its fuel consumption. Our 4-cycle 6-horsepower Mercury/ Tohatsu hummed along day after day and we were pleasantly surprised at the thrifty fuel economy. Our modest 3-gallon fuel tank allowed for about a 60-mile range. With an additional 2-gallon jerry jug and the motor's integral tank capacity, we refueled only twice during our four-day trip. The disparity of waterfront real estate we passed — everything from liveaboard boats and shacks to 5,000-square-foot McMansions — was a constant source of interest. On occasion, we passed a sailboat returning from saltwater or a trawler doing The Loop.

After experiencing a slice of upstate New York's history and landscape to the gentle hum of our outboard, it was a pleasure, upon our return to Oswego, to raise the mast and transform back into a sailboat. And after having been constrained on a nautical highway, it was oddly exciting to look north at the watery horizon, and to contemplate our own.

![](_page_44_Picture_0.jpeg)

![](_page_44_Picture_1.jpeg)

Seneca Falls was once the, "pump center of the world." Today, 150-year-old Gould's Pumps remains and is one of the area's largest employers. "Working Man's Alchemy" is a sculpture along a walking/biking trail and is dedicated to Gould's and the

Tringa tied up along the free city dock in Seneca Falls, New York. A selection of restaurants and a laundromat

were an easy walk away, at top left. In the mid-1800's, Seneca Falls was a hotbed of the suffrage movement. This old knitting mill along the city's waterfront is being remodeled to serve as a women's rights museum, above.

-SG

Lake Ontario sailor and author Susan P. Gateley published Saving The Beautiful Lake, A Quest For Hope, that centers around a cruise aboard her 1950sbuilt 47-foot schooner, Sara B. Her latest book is an historic novel, Widow Maker. Visit susanpgateley.com for more information.

### The Compac 23

The Compac 23 is one of several cruising sailboats that range from 23 to 27 feet built by the Hutchins Company, Inc. of Clearwater, Florida. She's built for comfort and practicality rather than speed, and various versions have been in production since 1979. We were attracted by the comfort of the cockpit and owner-added bimini, as well as by the quality of the boat's hardware that included six opening ports, many lockers, ample storage areas, and the generous use of solid wood and teak veneers below. We liked the practical anchor roller, rode locker, and short bowsprit for ground tackle. Several other trailer-sailers we looked at had little or no provision for stowing and setting anchors.

town's history, above. *Tringa* under sail near her homeport, Little Sodus Bay, New York, on Lake Ontario, below.

![](_page_44_Picture_9.jpeg)

![](_page_44_Picture_10.jpeg)

# Cracked and Crazed No More

An old galley gets a new view

BY TERRY KOTAS

**66** ake a look at all these small cracks in the window, it looks like frost."

"I don't think the Sea of Cortez gets frost, Hon," was my wife's distracted response.

"Just take a look."

Heidi put down her book and stepped up to the galley window.

"I don't see any frost or cracks."

"You're too short, trust me, they're there." We had just experienced sump in a quiet anchorage aboard *Cetus*, our 1980 Fantasia 35, and the light illuminated all the cracks and crazes on the main galley windows. "We'll need to do something about that, soon." I'm sure I heard Heidi mumble, "Oh no, here we go again."

Even having owned and sailed *Cetus* for nearly a quarter century, replacing the main cabin windows had somehow never made it onto the many lists of things to repair or replace. We got close, making simple teak window frames in 1994 to cover the screws and washers that attached the windows to the cabin (obviously not a factory installation). After several offshore passages and the ensuing years, the teak frames showed their age.

The old and worn topside gelcoat had long ago been covered with polyurethane paint, that we recoated only a year ago. So before removing the exterior window frames, I carefully scored around the frame edges with a razor knife to ensure that when I pulled the frames off, topside paint wouldn't come with them.

Next, I drilled out the bungs covering the screws that held the teak frames in place. A small fabricating shop in a nearby town was noted for their work with aluminum, so we made the decision to scrap the teak and go with new low-maintenance brushed-aluminum frames. Knowing the old frames would make very accurate templates, we took our time during removal to keep them intact.

![](_page_45_Picture_15.jpeg)

The cracks and crazing of the old galley windows on *Cetus* were a sign that replacement was necessary, left. After removing the old teak frames, a Dremel was one of several tools Terry and Heidi used to clean the caulk- and silicone-covered surfaces, right.

![](_page_46_Picture_0.jpeg)

A close-up of the recess, with butyl tape applied, ready for its new window, left. The cut-to-fit window is a perfect match, resting in the cabin-side recess, right.

Under the teak frames, the screws attaching the old acrylic windows to the cabin sides were hidden by globs of silicon, but once exposed they were easily removed. When I removed the last screw attaching one window, it fell out on to the deck.

Well, that could explain the leak. Of course, the toughest part was cleaning off the globs of old silicone that were left after the windows and frames were removed. Razor blades, a Dremel tool, and sandpaper were the tools of choice. Here I must acknowledge our neighbors' patience during the three-day clean-up phase of this project because they endured hours of the dental-drill sounds from the Dremel, the fingernails-on-chalkboard sounds of scraping, and the moans and groans from me as I painfully contorted my body to complete this work. Eventually, I removed all the silicone and left behind was a clean recessed edge onto which the new bedding compound would have no trouble adhering.

One of the challenges of completing a DYI project in a small Mexican town is the difficulty we sometimes

encounter trying to find a source for the materials we need. This brings us to butyl tape, a synthetic rubber-based sealing material that comes in a roll, and in a variety of sizes and thicknesses. I have bedded deck hardware with butyl tape and it's proven to be a great alternative to caulk, with half the mess. I was hesitant to use something that I knew little about and that might need replacing sooner rather than later.

So, my mission was to find some butyl tape. After dropping the old teak frames off with an aluminum fabricator, I spent the rest of a day searching at hardware stores, auto parts stores, and a glass shop for butyl tape. I came home empty handed. Then, I was surprised and relieved to find that a fellow cruiser, right across the dock from us, had a whole roll on board that he was happy to let us use. The gifted tape was just what I was looking for: ½-inch wide, about ¼-inch thick, and a nice grey color. Another problem solved.

Before starting this project, I assumed the small local glass shop would stock something like Plexiglas, but I came to find there was nothing even close. This was about the time I conceded that my planning of this project, in terms of local availability of materials, was lacking.

Then I got lucky, again. The fabrication shop we were working with happened to have an employee coming down from San Diego with some supplies for the shop and the owner was able to catch him before he crossed the border. My window material was on its way. With the frames still a week away from being finished, and the window material somewhere between *Cetus* and the Mexican border, there wasn't much to do but wait. That's when it began to rain — hard, for a week! I couldn't put the old windows back in because I'd been careless and dropped and broken one, but our neighbors happened to have two new shower curtains they donated to our cause. Taped over the openings, they did the job, but I don't think the marina manager appreciated the new look; he visibly cringed at our boat as he walked the docks.

Then the rain stopped, the Lucite (another brand of plexiglass) showed up, and we were back in business. I cut the windows from the Lucite using a jigsaw with a very fine blade, and then sanded the edges smooth. I cut the glass just a wee bit smaller than the original all around to allow for any expansion caused by the summer heat.

Next, I carefully drilled eight <sup>3</sup>/<sub>6</sub>-inch holes in the windows, three across the top and bottom and one on each side. These holes are slightly larger than the screws to again allow for expansion. Though the butyl tape has strong

> adhesive properties, I felt more comfortable adding the mechanical fastening screws. Before inserting the screws, to seal the holes, I wrapped each one with some of the tape.

The window opening on the cabin side has a ½-inch recessed lip that the window sits against. After a thorough washing with alcohol, I placed the sticky tape around this lip taking great care in making sure the ends of each individual strip of tape made solid contact

![](_page_46_Picture_14.jpeg)

The new aluminum frames impart a bit of modernity to the nearly 40-year-old Fantasia 35.

with the adjoining strips to avoid any leaks. A razor blade worked well in cutting and fitting the corners. With the window recess lined with the tape, it was time to remove its paper backing.

I carefully placed the first window in its opening, lining up the screw holes using a couple of toothpicks stuck in two of the holes. It was clear to me that removing a misaligned window would not be fun, so we took our time. I inserted and hand-tightened each screw, then tightened them with a screwdriver until we could see there was full contact between the tape and the window, all the way around. We now had no need for our very attractive shower curtains.

A couple days later, the window frames were finished. The teak frames we'd installed almost 25 years ago were 1 <sup>3</sup>/<sub>4</sub>-inch wide. For these new frames, we had the shop use 2-inch-wide by <sup>3</sup>/<sub>6</sub>-inch-thick 6063 T6 aluminum flat stock. The extra width would cover the small nicks I made in the gelcoat when removing the old teak. I drilled 15 holes for each frame, each with a countersink to accept a #6 screw. I carefully placed the butyl near the edge of the frame

#### <u>Costs</u>

| Lucite                    | \$75  |
|---------------------------|-------|
| Aluminum Frames           | \$250 |
| Butyl Tape                | \$15  |
| Miscellaneous             | \$30  |
| (screws, sandpaper, etc.) |       |

and we again used toothpicks to help with alignment and again wrapped the screws with the butyl tape and drove the screws home so that the butyl just started to squeeze out the edge of the frame.

As the frames are attached to the cabin side, and because the recess the Lucite is bedded in is deeper than the Lucite is thick, there is a slim gap between the window and frame that I filled with silicone. One benefit of this deep recess is that it allowed me to use pan-head screws on the Lucite window. Had I countersunk the holes for these screws, I'd have increased the chances of cracks forming around those holes over time.

I didn't countersink the six holes I drilled for the window because doing so could lead to cracks from either over

#### Lessons Learned

As with all DIY projects, there is a learning curve. As we complete projects, we realize which techniques and materials worked better and made the project easier or improved our outcome. In the hope that they help someone tackling something similar, following are a few of the conclusions we drew from this project:

 Gather all parts and materials before starting, especially if you are in an area where things aren't readily available. tightening or expansion and contraction. The pan-head screws holding the window just barely touched the back of the frame, creating a narrow gap between frame and the window. This I filled using silicone.

Then we were finally able to remove the protective cover from the Lucite and we were both amazed at how clear the view had become.

"Not bad for a couple of weeks work," I said out loud.

"It's been a month," said Heidi. 🖉

Terry Kotas and his wife, Heidi, have lived and traveled aboard sailboats for most of the past 30 years. They are currently enjoying Mexico's Sea of Cortez while planning and readying their Fantasia 35, Cetus, for their next South Pacific adventure.

![](_page_47_Picture_17.jpeg)

- 2. In purchasing the window material, we would next time do more research on the types of materials available. Some materials are very restrictive regarding what can be used to clean them, which could be a problem.
- 3. It's possible that the reflective sunshade material that we (and others) use to cover the plastic windows from the inside, may heat them up to the point that it accelerates the crazing. We now use a white closed-cell foam sun shield that doesn't radiate heat.

![](_page_47_Picture_20.jpeg)

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# One Wrong Step

### The go-slow art of sailboat repair

**BY JON KELLER** 

don't go to boatyards, not unless I'm in Florida, working on my friend Brian's boat. There the ground is shell and coral, palm trees line the fences, and Brian buys me Tecates, limes, and sandwiches while I work, and those things make it bearable.

But on a recent trip down the coast of Maine, I discovered that the mast step base on my boat was rotten, and the mast needed pulling. I eyeballed the small trap cranes on town wharves, thinking I could pull my mast and do the repairs with the boat in the water. I'd stepped my mast that way before, but with a crew of a half-dozen to help. I had no help, and certainly couldn't do it myself. I called a barge operator, thinking I'd pull the mast that way, but he was on vacation. I stared at my

![](_page_48_Picture_7.jpeg)

charts, looked at the ocean, and rapped on my mast with my palm; it was time to find a boatyard.

I called Alan Dugas at the Royal River Boatyard in Yarmouth. I'd met him years ago, and he'd been helpful and easygoing. He told me to come on up the Royal River.

Early in the morning, with a smooth layer of mist rising off the water, my

![](_page_48_Picture_11.jpeg)

When Jon realized that the mast step base was rotten, he put some oak wedges between the mast and subfloor, hoping that they would help to keep the mast from moving until repairs could be made, at top. With the mast pulled at the Royal River Boatyard in Yarmouth, Jon prepared to cut into the sole in the head to expose the mast step base, left. Demolition gets real. There's always a bit of gratification in accessing those hard-to-reach areas on an old boat, center. Beneath the stainless steel plate, the step base (just marine ply covered in a single layer of glass) was completely rotten. Jon was able to scoop the rotten wood away with his hands, at right. Unfortunately, removing the sole in the head didn't allow for enough access to fully encase the new base in fiberglass, so Jon used a multitool to cut into the subfloor outside the head, top right. It's said that to find the best boatyard, look at where the commercial fishing boats go. At Royal River, Jon found a mix of fishing boats, sailboats, and high-end yachts. The wooden dragger off *Jade*'s starboard rail is said to be the oldest working wooden boat in the Gulf of Maine, center. Building up *Jade*'s new mast step base with Coosa board and filler, below.

sails stowed below, my boom tied to the deck, I chugged up the river. Sturgeon jumped. Rowing teams passed by. I kept wondering if I'd made the right decision, part of me still wanting to cut *Jade* for home, fix her in a place where I had a community's worth of support, be it tools, advice, consolation, or distraction.

At Royal River, my mast was off before I'd finished cracking bad jokes about how the guy with the Hinckley better not scratch my boat, and just as fast, *Jade* was up in the air, then on stands in a patch of smooth gravel. I dragged a metal staircase over, borrowed an extension cord, and got started.

The mast on the Tartan 34C is keel stepped, planted someplace beneath the sole in the head. I'd taken a few pictures with my smart phone camera and could see some broken fiberglass and some rotten wood, but I couldn't make out the structure itself. I found no information online; the Tartan 34C forum was down.

I could reach down and jiggle the ¼-inch stainless steel plate on which the mast sits, though I couldn't lift it without cutting the floor out.

In Alan's office, we caught up and then he asked about my problem. His fiberglass guy, Oliver, came to my boat, looked at the base, and drew with his finger where I should cut the floor. He showed me around the shop, where the materials were, the tools, the marine supply store, and the washrooms.

"Go slow," he said, pressing his hands down. "Take measurements before you rip it apart. Go slow. Go slow. Remember, to go fast, you go slow."

I laughed, thinking about how I tended to rush into projects. He laughed too, and said, "Everyone's in a hurry. Go slow."

Soon, I was up and running, and quickly realized that boatyards made

life considerably easier, even if Brian wasn't around with beers and limes. I had power, water, advice, marine supplies, and hardware, all right there. No running to stores, chasing down tools, ordering stuff, and waiting days for it to arrive.

Using a Fein multitool, I cut the fiberglass-lined sole out of the head and, despite my best efforts, fiberglass dust was everywhere. Once through the glass, I cut through the ¼-inch cork and the ¾-inch plywood subfloor to expose the mast step base.

I was excited to finally see what was going on. I pulled on the stainless steel plate, but it was held down by a single stubborn screw. I let it be and instead took careful measurements to the walls and floor joists and edges of the subfloor and down to the keel top. I drew a diagram with everything labeled.

With my measurements complete, and with Oliver's zen mantra running through my head (Go slow, go slow... to go fast, you go slow...), I removed the stubborn screw and lifted the plate off. It was worse than I imagined, a pile of rotted plywood mush that I could scoop out with my hands. Nevertheless, the few cohesive spots made it obvious that the blocking was just two pieces of ¾-inch plywood sandwiched together then covered in a thin layer of fiberglass.

There was a little half-dollar-sized dollop of resin amid the rot that had been holding the stainless plate, and my mast, from dropping down the remaining 1  $\frac{1}{2}$  inches. I tinked it with a hammer and it popped off.

Once I cleaned everything up, I was left with a 6- x 12-inch base pad on top of the keel (the same size as the original

![](_page_49_Picture_16.jpeg)

![](_page_49_Picture_17.jpeg)

![](_page_49_Picture_18.jpeg)

block and plate). I was filthy and exhausted, and my boat was a wreck. It was pushing 90 degrees in the boatyard and I grabbed a shower and a beer.

In Royal River's shop, I cut several 6- x 12-inch sections of Coosa

![](_page_50_Picture_0.jpeg)

composite board and dry-fitted them atop the existing pad. All my measurements added up, but what didn't add up was that, since the base paralleled the outer head wall (aft of the door), I wouldn't be able to glass the base down on the starboard side of the mast. There was simply no room. I tried for an hour to come up with alternatives to removing the wall and cutting and removing more floor. I came up with nothing, but instead of rushing into ripping the trim and wall apart, I slowed down, looked at it from every angle, stuck my head and flashlight every place I could; there was no way to get a piece of fiberglass in there to hold my new base down.

I went back to Alan's office. I knew he was busy, but both he and Oliver had reiterated that Royal River Boatyard is old school, they'd rather have a boat owner ask a question than mess up a project. Alan agreed with my assessment. "Take the wall down, cut the floor out. Glass the base in on all sides. Make it bombproof."

I took the teak trim off, cut the fiberglass tab at the wall's base, and worked the small section of wall out. I cut through the cork (no fiberglass on the floor outside of the head) with a utility blade and saved the cut-out, then used the multitool to cut out the plywood subfloor. With more access, it was back to cleaning. It was good to rid the boat of all those years of buildup and to get a good look at what was going on. I rewired the bad ground connections that led to the mast.

![](_page_50_Picture_4.jpeg)

I dry-fitted the Coosa boards again, verified my measurements, and began mixing epoxy filler. The plan was to smear the filler on the base plate, then add a layer of Coosa, then fill, then Coosa, and build up my new base in that manner, making sure to push the Coosa down hard enough to squeeze out any excess fill. Then I'd fillet around the base before glassing it to the hull.

Despite my new mantra of "go slow, go slow to go fast," it was well into the 90s on my boat and adding the hardener to the epoxy felt like lighting the fuse on a stick of dynamite. I soon had epoxy all over the place, my gloves covered, my rags covered. I peeled the sweat-filled gloves off, adjusted my sweaty respirator, dried my hands, put new gloves on, and worked the Coosa boards into position. I checked the measurements before the fill hardened, made sure it was square with my T-square, then worked my fillets around the base of the blocking so that my fiberglass would have round corners to follow.

It wasn't until I finished and stood up that I noticed it. The forward end of the base appeared to be lower than the aft end. My heart raced, but I rechecked my measurements, found them right, and got off the boat.

After a shower, I walked up the hill above the boatyard and sat in the shade. I slept that night in a borrowed tent I pitched beneath big white pines on the same hill. I slept in fits, waking from the heat with thoughts about how The starboard wall in the head had to be removed, as well as the additional section of subfloor. This gave Jon all-around access to the base. The bulkhead, pictured, is aft, far left. The original stainless steel step lagged and sealed with Sikaflex, at left.

the step base appeared out of level. But nothing on a boat is level, I told myself. I'd measured over and over.

The next day, hotter than the previous, I encased the entire base I'd built in three layers of fiberglass, a schedule of mat, roving, mat. Then I wandered the boatyard. In the bathroom I soaked my head. There was no wind. Not a good time to work on a boat.

When the glass cured, I examined my work. The stainless plate fit perfectly, and the base was bombproof, but the fore-aft level ... I continued, knowing I am the sort to find something to worry about.

Using a piece of cardboard, I cut a template for the subfloor I needed to replace, then went to the shop and cut a new piece of ¾-inch plywood to fit. I cleaned up the piece of cork I'd removed, glued it down, and put the wall back up. I fitted the stainless plate, drilled out tap holes, and lagged it down, using Sikaflex to seal the lag screws and the plate.

I knew it was wrong. With the wall and floor in place, the forward part of the base was an obvious 1/2-inch lower than the aft section. I measured again and my measurements held true.

Alan asked if I was ready to launch.

"I don't know." "What's wrong?"

I explained and he said, "It's hard to tell. We'll launch you and ease the mast down. If it's not right, we'll fix it easy enough. It's no big deal."

Walking across the parking lot, the words "no big deal" rang in my head. It was a big deal for me if I messed up the entire project. How the hell would I, or could I, fix it? Lifting the mast for the trial stepping, at right. And this is how Jade's step and sole looked prior to the final stepping. Eager to get underway, Jon finished the sole upon reaching the Bahamas months later, below right.

![](_page_51_Picture_2.jpeg)

I talked to a couple boatyard friends, explained the problem. Both said that it's damned hard, if not impossible, to tell level or true or plum on a boat. Right angles weren't applicable. It'll be fine, they guessed.

We launched the next morning, lowered the mast, and sure enough, the mast butt contacted only the after edge. Soaked in sweat, I took new measurements, then stuck my head up the companionway and told them to pull the stick back out. All I could do was laugh. They put me in a slip near the lift.

I had no idea what to do. Cut the mast butt at a taper? I ran into Oliver, the glass guy.

"Cut an oak shim," he said. "It'll be rock solid."

"Can I get the stainless plate up with all that Sikaflex?"

"Go slow," he grinned. "It'll come up. Go slow backing your screws out. It won't be a problem, just a hassle."

"I don't get how it's so wrong. The measurements are all right."

"The factory," he said. "You see it all the time on production boats. They slam it together. You can't measure off what they did."

Translation: I'd measured off the wrong points.

Bob, the head carpenter, had built and repaired boats his entire life. I wanted a second opinion. "Oak wedge," he said. "Get your dimensions, I'll cut you one. It'll last longer than you."

I continued up the stairs to Alan's office, he was upbeat. "Let's put an oak wedge in there. I'll get Bob to cut one, just bring the measurements and the stainless plate."

Despite the consensus, I was still doubting, still envisioning taking a

grinder to the entire works, starting all over again. I called my brother, a high-end marine carpenter who was utterly unable to do anything half-assed.

"Oh yeah," he said. "Oak wedge for sure."

I asked him how it could be so out of level. "You run a string line down?"

My heart stopped. I was standing in the head, looking down at the base, and realized that not once had I looked up.

He was still talking. "Take your measurements from up there. That's where the mast comes down from, and you want that to be square. Rig up a dummy mast or something."

I hung up and went back to my boat. It was much cooler down by the water and I felt reinvigorated — in part, because knowing it was wrong was better than wondering if it was wrong.

I removed part of my new sole and was able to leave the wall and trim and cork floor intact. I took a long time getting the stainless plate up, working the screws out slowly, then working the plate up. I cleaned the Sikaflex off the plate and the top of the base, then began measuring. I knew roughly where I had to be because I'd measured when the mast was in, but I wanted it to be perfect.

Measuring down from the top, using a string line from the cowling where the mast passes through the coach roof, as well as a straight edge and a framing square off the bulkhead, made it so easy that I couldn't believe I hadn't thought of that before. But that is why my brother is a builder and I am a writer.

While measuring, it dawned on me that because the base pad I'd built on wasn't perpendicular to the mast

![](_page_51_Picture_24.jpeg)

base, the factory must have either set the mast on a base that wasn't right, or they'd used a wedge.

Bob cut a piece of quartersawn white oak and I oiled it with teak oil, then sealed it in place with Sikaflex, and mounted the stainless plate atop that. I replaced the floor piece I'd taken out and everything looked as it should. I was soon back in the haulout bay, the mast lowering. I looked at the yard worker who was down below with me, "If it doesn't fit, we're hauling her for the winter and a For Sale sign's going up."

But everything fit perfectly and an hour later, full with fuel and water, I was on my way back down the river. I caught myself thinking that I'd become a fan of boatyards ... at least the Royal River Boatyard.

I grabbed a mooring at Chebeague Island, in Casco Bay, and did my preliminary rigging adjustments, put the boom and sails back on, and the next morning I was sailing. I was going slow, and I was making good progress.  $\varDelta$ 

Jon Keller, a writer, commercial fisherman, and former Montana guide, divides his time between Jade, his Tartan 34C, and his Down East Maine cabin. His first novel, Of Sea and Cloud, was published in 2014.

![](_page_52_Picture_1.jpeg)

![](_page_52_Picture_2.jpeg)

#### A New Approach to Through-Hull Redundancy

Given that I needed to change the ball valve on the through-hull for my AC raw-water intake, I was the perfect candidate to test this better-mouse-trap device intended to replace the time-tested tapered wood plugs we keep in case of a through-hull emergency — only this isn't what I did, not at first.

When the ball valve came off, and water gushed, the first thing I did was push the tapered wood plug into the 1-inch hole. We were

no longer sinking, but things were at an impasse. With the plug in place, I couldn't screw a new ball valve onto the through-hull. I knew the Sea Bung I'd been sent promised a better outcome.

In short, the Sea Bung is a mushroom-shaped piece on a long stick-like stem. The mushroom part collapses as it's pushed through a hole (it's made of thermoplastic polyurethane) and then opens back up on the water side and takes advantage of head pressure to stop the inflow.

It was time to try it. I pulled the wooden plug out and quickly shoved the Sea Bung straight through the through-hull. Water pressure pressed it against the outside flange of the through-hull fitting and the inflow of water stopped immediately, totally.

After cleaning the threads of the through-hull fitting with a wire brush, I applied a sealant to them before sliding the new ball valve down the stem of the Sea Bung and screwing it on. Then, I pulled the Sea Bung back out of the through-hull and quickly closed the ball valve.

I don't have any complaints or critique of the Sea Bung. The package included two bungs, a small and a large (I used the smaller one). A feature I didn't use is the ring molded into the top of each stem. This is a tie-down point for a string or cord that could be used to apply and keep tension on the Sea Bung, in a case in which the through-hull is too close to the surface to provide adequate head pressure.

Sea Bungs are made in England and more information can be found at: seabung.com

- Roger Hughes, Good Old Boat contributor

#### **Open Anything**

The Mantus Marine Universal Deck Key is a winning combination of several boat-specific tools in one. It's forged from stainless steel and has a different form factor than other deck keys. One part of the key slides on the other, creating a spanner wrench that is adjustable up to four inches. I successfully tested the key on several slotted, keyhole, and finger-twist deck plates. I tested the shackle-opening slots on several stubborn shackles of different sizes, and the key provided plenty of leverage to open them easily. There are four hex wrenches on the tool ( $7_{16}$ ,  $11_{32}$ ,  $3_{8}$ , and  $5_{16}$ ) and a key for opening octagonal-starred deck fills. And rest assured, there is a bottle opener. For some reason, there is no tool for opening hexagonal-starred fills (common on Beneteaus). Mantus was interested to learn of this omission when I called them; maybe something we'll see in the next version?

For more information: mantusmarine.com

- Jerry Thompson, Good Old Boat contributor

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# The Solar Panel Bimini

Why build more than you need?

#### **BY JOHN LANGFORD**

e wanted two things to enhance our sailing lives aboard our Catalina 34: protection from the sun and rain while at the helm and a solar panel to keep our 400-amp-hour battery bank charged. We'd seen boats like ours with rigid solar panels attached to a stainless steel frame or arch above a

bimini. We'd seen others with flexible panels fastened directly atop a bimini.

Estimates for building a bimini ran as high as \$5,500 CAD. Adding three 100-watt flexible solar panels to the top could increase the cost by \$2,000 CAD, depending on panel quality. Alternatively, adding the same wattage in rigid panels to a frame or arch above the bimini would be a heavier option and cost at least \$1,500 CAD more, considerably more with an arch. All these costs were sobering.

But why cover the bimini with solar panels or build additional framework above the bimini to support them? What if the solar panels could also *be* the bimini? Looking at the stainless steel frame for the traditional Catalina 34 bimini, I realized it would be a straightforward DIY project to build a modified version of the frame and attach rigid panels to the top. The larger the panels, the more charging power and protection from the elements we'd gain.

We used two 20-foot lengths of 1-inch stainless steel tubing for the main horizontal arms that support the panels, hiring a local metal shop to make the 90-degree bends (no bending was required for the crown because we wanted the panels to lie flat). Offcuts from the main structure and an

![](_page_53_Picture_9.jpeg)

From above and below, *Calypso*'s DIY solar panel bimini with Sunbrella insert is both attractive and effective.

extra 10 feet of tubing were all we needed to create the four smaller support arms. All the fittings were available at our local chandlery. We ended up with a solid stiff frame just over 6 feet above the cockpit sole. It's flat on top and angled slightly aft to allow rainwater to flow off the panels. We spent just over \$700 making the frame.

Because our backstay splits above the top of the bimini frame, we opted for two 150-watt rigid panels, one on the outside of each backstay cable. To connect each panel to the two fore and aft poles of the bimini frame, we used two flat aluminum bars and four nylon rail fittings. We filled the space between the two panels with a piece of Sunbrella clipped to an L-shaped aluminum bar we fastened to the sides of the panels. Alternatively, we could have made a filler using Plexiglass or Starboard.

The two hard panels, Sunbrella filler, and aluminum bar and fittings added another 800 CAD to the cost of the project. We ended up with about  $4 \ge 8$  feet of cover.

Of course, however panels are mounted on a boat, there are costs involved with connecting them to the battery bank. In our case, 100 feet of 10 AWG wire, 4 MC4 connectors, 2 Genasun controllers, and a switch to disconnect the panels from the 400-amp-hour lead-acid battery bank added \$500 to the total cost.

The performance of our solar panel bimini met our expectations. The helmsperson is protected from overhead sun and rain and, even on cloudy days, the panels pump electricity into our battery bank. And the value of reducing our carbon footprint? Priceless!  $\Delta$ 

In the mid-70s, John Langford bought a well-used 27-foot Pearson Renegade in Fort Lauderdale and set off for the Bahamas during hurricane season. The gods were kind and over the next year, John explored the islands and sailed the boat back to Toronto. He's not been without a boat since. Today, the retired university professor lives in Victoria, British Columbia, where he and his wife, Kate Seaborne, regularly sail the Pacific Northwest aboard their Catalina 34, Calypso.

# **Fireplace Facelift**

Better than new after half a century

here are few experiences I enjoy more than dropping the hook in an empty anchorage, early or late in the Lake Superior sailing season, when the skies are clear and cool, and then opening a book and a beer while bathed in the warm glow of my fireplace.

You read that right. Built into the forward bulkhead of the main saloon of *Siren Song*, my 1966 Ted Hood Auxiliary Racing Sloop, is an honest-to-goodness, cast-iron, burn-what-you-have, Scottishbuilt, Simpson Lawrence fireplace.

The first year or two I owned *Siren Song*, I found the fireplace a bit frustrating. It was smoky and didn't seem to throw off a lot of heat. I finally learned that the key is to burn enough fuel to heat up the box and chimney and thus create a strong convection up the chimney. I've burned everything from driftwood to compressed sawdust bricks, but find charcoal briquettes to be tidy, compact, and a good source of heat.

A nice design feature is that the fireplace backs up to the head and the chimney passes through the head, making that space a very effective wet locker. I hang my foul weather gear up in there at night and it's nice and dry in the morning. (But I've learned to not stow my stick of Old Spice too close to the chimney!)

Despite her attributes, my fireplace's original decorative tiles were cracked and unsightly. For the past few years, I'd kept an eye open for replacement tiles, but I'd not found anything both unique and eye-catching, and appropriate to *Siren Song* and her teak cabinetry, mahogany cabin top, and teak and holly sole. Then, on a snowy winter's day, I wandered into Eckels Pottery of Bayfield, Wisconsin. The owners patiently showed me a variety of finishes and glazes that could be applied to kiln-fired tile. The time had arrived for a fireplace facelift.

After counting and measuring the tiles I needed, I worked with Eckels and settled on matte, dusty green tile (similar to the original Collinsworth tile), but with random splashes of glossy cobalt blue, which I hoped would stand out and compliment the reupholstered interior, but not overwhelm it. Because the handmade tiles wouldn't be ready for a few weeks, I got busy prepping the fireplace.

The tiles were held in place with cement, grout, two missing pins, and a stainless steel frame around the perimeter. As I removed the frame to release the old tile, I learned (with a thud) that this frame attached the entire fireplace to the bulkhead. So, I removed the fireplace. This turned out to be fortuitous.

Several of the screws that attached the frame broke off as I tried to remove them. Several bolts at the top of the fire box that held the gasketed flue in place, had rusted loose. The

![](_page_54_Picture_11.jpeg)

The old fireplace was due for a refit, above. The new tiles add color above the warm glow below, above right. The fireplace repaired and ready for service, and new tiles, at right.

fire box was cracked in a few places and needed to be welded. With the fireplace out, it was interesting to see how, at the time of the original

![](_page_54_Picture_14.jpeg)

BY REB BLANCHARD

![](_page_54_Picture_16.jpeg)

installation, they'd used asbestos panels around the back side and up the bulkhead to protect the wood surfaces from heat exposure.

Once I'd had the fire box welded, tapped new screw holes, and securely attached the flue, it was time to install the tile. From the U.K., I ordered Vitcas high-temperature sealer, adhesive, and grout. I followed the preparation instructions and the installation went smoothly. After cleaning the tile and allowing the grout to set, it was a simple matter of muscling the fireplace back into position, attaching it to the bulkhead, repositioning the chimney on top of the flue, and replacing the stainless steel heat shield behind the chimney.

These days, the joy I get from my fireplace is magnified. It's fresh, locally made, distinctive face is ready to keep *Siren Song*'s crew warm for another 50 years.  $\varDelta$ 

**Reb Blanchard** is the fourth owner of Siren Song, and he has spent much of his time maintaining, improving, and sailing her since he purchased her in 2010. He often sails Lake Superior solo, enjoying the Apostle Islands and the uncrowded open waters of the big lake.

#### continued from page 7

![](_page_55_Picture_2.jpeg)

#### Safe in the Harbor

When Canadian folk singer Stan Rogers died, fellow folkie Eric Bogle penned a tribute song with the words...

- "To every sailor comes time to drop anchor.
- Haul in the sails and make the lines fast.
- You deep water dreamer, your journey is over You're safe in the harbor at last."

Well, I'm not dead but, at 75, I was finding the work involved in maintaining *Gwyneth*, my 1974 28-foot sloop, too onerous. I decided it was time to pass her on to new owners. I wanted to do this while she was still in good condition. And I wanted her to go to younger owners who I felt would take good care of her, as I have done. I set a very reasonable price tag on her and sold her to a motivated young couple who live on the same island as me.

I still own a leaky 12-foot aluminum skiff that I can get out fishing on, but there will be no more big adventures and overnights. And it's ok. I have sailor friends here on the island who have offered to take me out.

I owned *Gwyneth* for over 15 years and had a lot of fun with her. One year we circumnavigated Vancouver Island. Am I sad? Maybe a little bit. But so much of aging carries a bit of sadness. Am I relieved? Yes, I won't miss crawling into tight corners to fix stuff and stretching my unmechanical brain to its limits when the motor acts up. And my garden will certainly get more attention! So, thank you *Gwyneth*, you were a good friend and I wish you well with your new owners.

Andy Vine, Cortes Island, British Columbia

![](_page_55_Picture_13.jpeg)

#### Humanure

In his response to a letter in the July 2019 Mail Buoy about his September 2018 article, "A Tartan 34 with PTSD," author Jon Keller describes his homemade toilet as a simple bucket not suitable for women's use because it does not separate the urine. Had Jon simply used more peat moss or sawdust, he would have created a sawdust toilet, one that works well without separating the liquids and solids. These types of toilets use more peat moss/sawdust to neutralize the waste so that it is a no-odor compostable material. This type of toilet is very effective, simple, and easily passes the no-odor test with flying colors. For more information see *The Humanure Handbook*, on author Joe Jenkins' site, humanurehandbook.com.

Jim Shell, Texas Gulf Coast

![](_page_55_Picture_17.jpeg)

![](_page_55_Picture_18.jpeg)

publish more letters in our monthly digital supplement, *The Dogwatch*. In fact, all *The Dogwatch* content is unique — and free! — so don't miss it. If *The Dogwatch* isn't landing in your email inbox each month, email brenda@goodoldboat.com.

![](_page_56_Picture_0.jpeg)

![](_page_56_Picture_1.jpeg)

![](_page_56_Picture_2.jpeg)

![](_page_56_Picture_3.jpeg)

September/October 2019

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#### **Boats for Sale**

![](_page_57_Picture_2.jpeg)

**Camper & Nicholson 32** 1966. Restored. Replaced during a 17-year dry dock: all rigging, main & 130 jib, t-hulls, and systems. All surfaces stripped and repainted, wood varnished. New dodger, sails, sail covers, etc. Many custom improvements including opening bronze ports, 2nd fuel tank, feathering 3-blade prop. 1985 Yanmar w/only 16 seasons of use. A great bluewater sailor. 32.75' LOA, 9.25' beam, 5.5' Disp. 6,000 lb lead bal. Faired bottom ready to launch with Pettit Vivid. Ashland, MA. \$22,400.

James Taylor 774-279-5018 jimt999@verizon.net

![](_page_57_Picture_5.jpeg)

Cape Dory 28

1977. Yanmar 2GM20F 16-hp diesel, RF 135 jib, reefed mainsail, new bimini, Garmin GPS Map 441s, Raymarine ST 2000 AP, solar-charged batteries, new Jabsco head. Origo 2-burner stove, Magma propane grill, standing headroom. Engine serviced recently. Many accessories. *Vasa* is a veteran of several East Coast voyages. Owner ready to retire. Galesville, MD. Reduced to \$\$,950. **Dixon Hemphill 703-250-9277** 

dixonh999@gmail.com

![](_page_57_Picture_9.jpeg)

Rhodes Custom 43 1967. CB yawl, custom design, launched 1976. Beam 12', draft 4.5'/8', 65-hp Volvo diesel (low hours). Spare set of rigging, RF headsail, 4 sails. Annapolis, MD. \$35,000.

> Barry Gruber gruberbarry2@gmail.com

![](_page_57_Picture_12.jpeg)

#### Vancouver 36

1978. Fully equipped bluewater cutter in sound cond. Designed by Robert Harris and built by Durbeck in FL. Many miles in her wake including 2 transatlantics. Ready for new owners with dreams of distant shores. See website for detailed description, equipment list, many pictures. Potomac River, VA. \$32,500 negotiable.

> George Hunt 434-591-4599 george@w4avo.org w4avo.org/promise.html

![](_page_57_Picture_16.jpeg)

#### Cape Dory 330

1986. Alberg's redesign: cutter rig, taller 35' mast, roomier interior and cockpit. *Annie Laurie* is jewel of the fleet, loaded with upgrades: new Yanmar engine in '08, new Yankee and Schaefer RF, new main in '12, new Bierig self-tending jib in '16, Hood in-mast RF, new rigging '14, 4 Awlgrip jobs since '00. Solid, safe, a joy to cruise, gorgeous. Perfect boat for couple with occasional guests. Mount Desert Island, ME. \$55,000.

Contact the broker: Newman Marine 207-244-5560 yachtworld.com/boats/1986/ Cape-Dory-330-3220159

Pearson 26 Weekender 1976. Great daysailer, excellent PHRF racer, heavy-duty gear, spinnaker-rigged. Lots of accessories. Includes long-shaft OB, car trailer, steel cradle. Plymouth, MN. \$8,000.

> Michael Barnes 763-557-2962 granite55446@gmail.com

![](_page_57_Picture_23.jpeg)

#### Seafarer 31

1968. Bill Tripp design. Cruise ready. *Trilogy* is a master cabinetmaker's boat, classic inside and out. Solent-type rig, furler, and headstay, inner cutter sail, spi in sock, red canvas dodger/awning. 200W solar, 400AH batt, inverter, hot showers, microwave, fridge, AP, cabin heater, Corian counters. 15-hp OB in lazarette. Rockland, ME. \$16,000.

> DT Lewis 603-669-7937 dtlewistrilogy@gmail.com

![](_page_57_Picture_27.jpeg)

#### East Coast Oyster Boat Design 17

1956. Wooden gaff rig w/jib, had it for 40 yrs. Wife and I restoring 3rd time. 40% left to do. 8-hp IB. New main, older jib. Sleeps 2, porta potty. Bronze fittings and rub rail. Canvas over plywood deck. Boat covers. Very good trailer and tires w/spare. Compass/depth sounder. Waseca, MN. \$10,000.

> Ken Earle 507-835-3452 1kjearle@gmail.com

All of these classified ads and more appear on our website GOODOLDBOAT.com

![](_page_57_Picture_32.jpeg)

**C&C 35 Mk I** 1973. Rare classic racer/cruiser. Draws 5'3"; fast, nimble, fun to sail. All lines led to cockpit. Solid hull/no blisters. Many upgrades, incl. 30-hp diesel, folding prop, FB main w/Dutchman, RF, 4 headsails, new halyards, bimini. Compass, GPS/Chartplotter D/S/W, VHF. Shorepower, regulated battery charger, dripless stuffing box. H/C water, microwave, propane cooktop. AM/FM/CD, electric bilge pump. Spinnaker/whisker poles, swim ladder, anchor. MD. \$14,500.

> John Filippini 703-409-9187 johncfilippini@gmail.com

![](_page_57_Picture_35.jpeg)

#### **Grampian 26**

1970. A fine-sailing, spacious sloop w/many owner enhancements. 9.9-hp Yamaha elec. start OB, UK sails, RF jib, Hood MPS, internal halyards, ST winches, rigid boom vang, D&S meters, VHF, bow anchor roller, teak-and-holly cabin sole, enclosed head, superb cabin cushions, sleeps 4 comfortably. Pelham Manor, NY. \$2,900.

Malcolm Hartman 718-885-1381 maljh@verizon.net

![](_page_57_Picture_39.jpeg)

Allied Princess Ketch 36 1976. Professionally maintained full-keel ketch, 2007 Walker Bay 8' dinghy, 2.2-hp Mercury OB. Bluewater equipped, 4'6" draft. North Sails 2017, Sunbrella canvas, 40-hp Westerbeke (2,100 hours). Awlgrip decks. New 31-gal aluminum fuel tank, 80-gal water, refrigeration, H/C pressurized water, 5 berths, 6'4" headroom. Updated B & G electronics, Dickinson gas grill, reverse heat/ air, Garmin 741 chart plotter at helm. USCG 2019 inspected. Yacht World #1721-3556178.

John Kaiser, Broker, Yacht View Brokerage LLC, Annapolis, MD 21032 443-223-7864 john@yachtview.com

![](_page_58_Picture_2.jpeg)

#### Magellan 36

1977 vintage, ChungHwa ketch. Currently cruising the Sea of Cortez, Mexico. Complete information and photos: Sailshamaness36footketch.weebly. com. Well-maintained with all systems running. Cruised for 23 years off Pacific Coast, Mexico, Central America, Hawaii, and British Columbia. Thick fiberglass and teak exterior/interior, Yanmar Diesel, complete set sails, Bluewater cruising equipment. Mexico. \$25,000.

Dennis Clifton 650-269-5827 cal20dennis@yahoo.com

![](_page_58_Picture_6.jpeg)

#### Luders 33

1967. This is a classic Luders, built very robustly of fiberglass by Allied. The Luders was a successful racer in her day and still has a good turn of speed. Westerbeke freshwater-cooled diesel, custom interior work, new sail cover. She is a great example of the class and a solid dry entry into the Luders association. Go to Luders.com for more detailed information. Stonington, CT. \$13,000.

Andy Williams 860-514-0592 andy@arhwms.com

![](_page_58_Picture_10.jpeg)

#### Cape Dory 25

1974. Being sold by Boy Scout Troop 24 in Portsmouth, Virginia. Boat in good condition. Hull and deck professionally redone. Sails, standing, running rigging in good condition. Boat in sail-away condition. Interior in fair condition, needs completion. No motor. \$1,000.00

> Eric 757-547-8190 cefly@t24.us

![](_page_58_Picture_14.jpeg)

#### South Coast 23

\$3.200.

1966. Carl Alberg-designed 4-berth keel fiberglass sloop, as-is. Ready to restore, on a like-new EZ Loader trailer. Take-it-all package includes nearly new Honda 2.3-hp OB, mast, boom, rigging, main, spin, suite of 100, 140, 180 headsails. More photos and data available. Paperwork in hand. Tow away and restore. Durham, NC.

> Todd Dickinson 919-732-5439 dicres@mindspring.com

![](_page_58_Picture_18.jpeg)

#### Mirage 27-2

1979. Robert Perry design. Length 27'11". Beam 9'3". Draft 4'4". Sail Area 313 sq. ft., Bal. 2,200 lbs. Displ. 5,200 lbs. 5-hp OMC Sail Drive (Gasoline). 130 and 150 Genoas, symmetrical spinnaker w/pole. Imron-painted top sides. VC 17m bottom paint. 2 reefs, Unit-O Harken furler, Harken main traveler, windward sheeting car, mainsheet blocks. Placed in several Leech Lake regattas, winning divisional trophies. Includes tandem-axle trailer, and Ship Shape Products winter cover. Walker, MN. \$10,000 Mark DeSchane 218-732-4891

#### mvdeschane@paulbunyan.net

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951-906-3185 FrConrad@gmail.com

#### Boats

![](_page_58_Picture_27.jpeg)

www.epoxyproducts.com/ marine.html 603-435-7199

![](_page_58_Picture_29.jpeg)

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![](_page_58_Picture_35.jpeg)

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| Magazine Ad with photo<br>Renew a Magazine Ad<br>(magazine and web) | \$55<br>\$55 | \$95<br>\$55  |

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#### **Good Old Classifieds**

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B0/

## Under the Sign of the Crab

#### BY CRAIG MOODIE

y wife sits down on the seawall above the beach. I tell her that I won't be long. She laughs and waves me away. "Take your time." A gust of chilled northeast wind lifts a wing of her dark hair. "I'm fine right here."

Her smile fades as she squints across the water at the mooring field. Only one sailboat lies on her mooring — *Petrel*, a catboat. Usually *Finn*'s first in. Not this year. A diagnosis has put our sailing season on hold.

I shift my eyes to our mooring ball, not a hundred feet upwind from where *Petrel* prances. It sits boatless, forlorn without our twelve-foot catboat frisking from it. Who knows how long *Petrel* will have to wait to welcome her smaller companion back to the water.

I trudge back up the dune path, pushing through the perfume of Rosa rugosa, to where the dinghy rests upside down at the path's edge. I muscle it over and it rumbles to a rest. I set the oarlocks and oars aboard, then drag it down to the water's edge.

As I shove off and row past the jetty, the early-June sunshine sends waves of oscillating light through the clear shallows. Soon the pebbled tortoiseshell bottom vanishes from view. The deeper blue-black water crinkles in a gust, sending *Petrel*'s halyards rapping.

I pass two cormorants standing atop separate rocks and move beyond the lee of the shore into the wind. Another gust scoots the dinghy toward our mooring as if goosed, and when I round up, we sweep past. I lunge and grab the pennant. I pin the line under my arm while I uncoil the loops from the eye, thinking that I'll let it dangle in the water. I reconsider. Why let it become an algae, slime, and barnacle farm? I coil it up again and drape it over the eye.

I release the mooring as a gust catches us broadside and we speed toward *Petrel*. As hard as I row, I cannot stem the drift. *Petrel* cuts back and forth in another gust, looming closer. I stroke too hard and the starboard oar skips off the water, the splash whipping downwind. Then the wind inhales, and I dig the oars in once, twice, and inch forward. I claw crabwise to regain the ground I've lost.

Soon I'm back in the lee of the beach, cruising across the sunlit shallows to meet Ellen, who has walked to the far jetty. I ship the oars and we linger, I on the water, she ashore. I wonder what runs through her mind on this last day before she begins a voyage into waters for which we have no chart, no star to steer by.

![](_page_62_Picture_11.jpeg)

"I found a piece of sea glass," she says. She weighs it in her hand, then tosses it into the water. "Not ready."

She turns back, and I take one stroke to pivot the dinghy, then rest on my oars. The wind carries me at the same pace Ellen keeps as she walks along the water's edge. I want to stay on the water, to coax Ellen into the dinghy for a row to Rand's Harbor, or even venture around the breakwater and up the channel into Squeteague Harbor, where we might have sailed *Finn* on this drafty day.

I backstroke to slow our drift as we reach our jetty. I know we must go. Ashore, my wife turns for the path. I land with a crunch and haul the dinghy back up the beach.

I pause to catch my breath and cast a look back out at our mooring. My hands tingle from handling wet rope and roughened oars. A vision of our little yacht comes to me, her sail breasting taut as she falls off the wind and carves a course toward the open water. I inhale the scent of brine and wrack and rose, then tear my eyes away and take the path through the dune after my wife.  $\Delta$ 

Craig Moodie lives with his wife, Ellen, in Massachusetts. His work includes A Sailor's Valentine and Other Stories and, under the name John Macfarlane, the middle-grade novel Stormstruck!, a Kirkus Best Book.

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