Good Old Boat

Inspiring hands-on sailors

Issue 154: January/February 2024

GoodOldBoat.com

$10.00 US $10.00 CAN

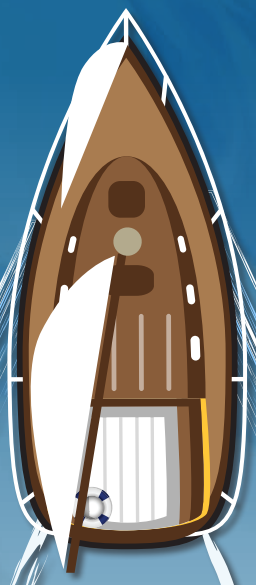
02

0 62825 97035 7

HM MAINE

HAMILTON MARINE

THE BOATERSTORE™



800-639-2715
hamiltonmarine.com

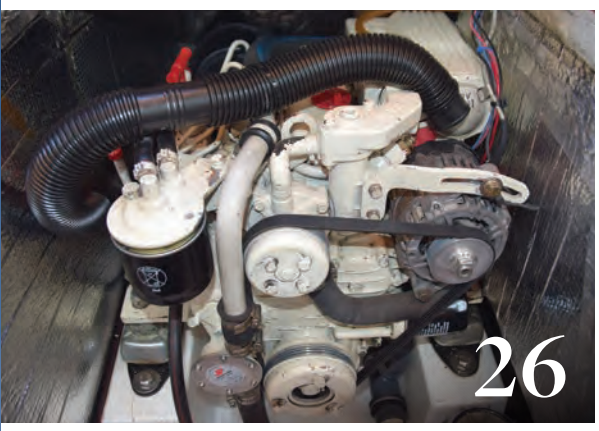
Happy New Year!

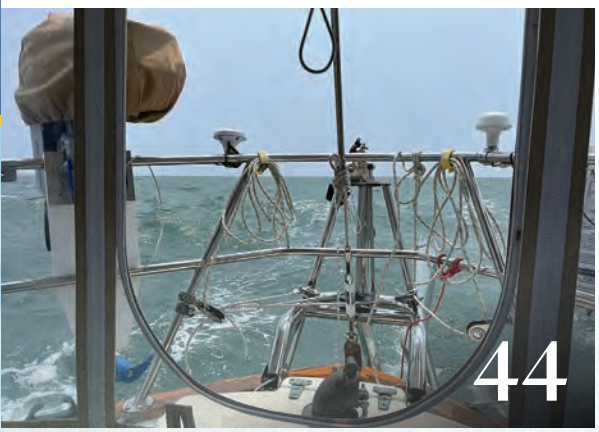
2024

PREPARE YOUR BOAT IN THE NEW YEAR WITH A SPLASH!

Visit us in-store or online today and see why Hamilton Marine is the go-to destination for all your marine supply needs in 2024!

KITTERY • PORTLAND • ROCKLAND • SEARSPORT • SW HARBOR • JONESPORT





Good Old Boat

Issue 154: January/February 2024

FEATURES

DEPARTMENTS

ON THE COVER

With a blanket of snow on deck and the fireplace crackling down below, the 1977 Downeast 38, *Shambhala*, sits peacefully at Granville Island Marina in the heart of Vancouver, British Columbia on a cold winter's evening. Owners John Kelsey and his partner, Meesh, tackled a big restoration to bring the boat back to life. Now, John says, "She is more than we could have dreamed of and has been perfect for our coastal sailing adventures."

GOOD OLD BOAT

CEO / CFO / PUBLISHER
Karla Sandness

EDITOR
Andy Cross
andy@goodoldboat.com

SENIOR EDITOR
Deborah Bach

BOAT REVIEW EDITOR
Dan Spurr

TECHNICAL EDITORS
Drew Frye | Rob Mazza

ELECTRONICS EDITOR
David Lynn

COPY EDITOR
Marcia Landskroener

CREATIVE DIRECTOR
Scott Racette

ILLUSTRATORS
Tom Payne | Fritz Seegers

CONTRIBUTING EDITORS
Cliff Moore | Fiona McGlynn | Ed Zacko
Bert Vermeer | Allen Penticoff

ADVERTISING SALES
Behan Gifford
advertising@goodoldboat.com

DIRECTOR OF CIRCULATION & BOAT CLASSIFIEDS
Brenda Ellingsen
brenda@goodoldboat.com | 701-840-6137

FOUNDERS
Karen Larson and **Jerry Powlas**

---

154 – VOLUME 27 NUMBER 1
GOOD OLD BOAT (ISSN 1099-6354; USPS 019327)

PUBLISHED BIMONTHLY BY
Good Old Boat, Inc.

BUSINESS OFFICE:
1300 Evergreen Dr. N.W. | Jamestown, ND 58401-2204
701-952-9433 | karla@goodoldboat.com

GoodOldBoat.com
SUBSCRIPTION RATES (1, 2, 3 YEARS):
US and Canada – $48/$90/$126 US
Overseas – $66/$126/$180 US

DIGITAL-ONLY SUBSCRIPTION RATES
US, Canada, and Overseas – $29.95/$54.95/$79.95 US

Periodicals postage paid at Jamestown, ND 58401 and at additional mailing offices.

POSTMASTER, SEND ADDRESS CHANGES TO:

Good Old Boat
1300 Evergreen Dr. N.W.
Jamestown, ND 58401-2204

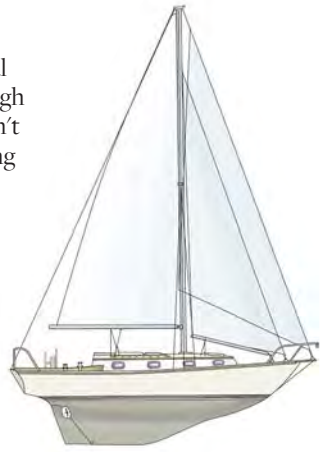
The sailing magazine for the rest of us.

Contributing Boats

A few boats behind the stories in this issue.

Brigadoon, 1983 Cape Dory 30

"The name *Brigadoon* references a musical about a magical Scottish village that appears once every 100 years. Although I'm not a fan of musicals and didn't choose the name, I can't quite bring myself to change it. Every time I consider doing so, I chuckle to myself that it will probably take 100 years to fix everything and I decided to keep the name."

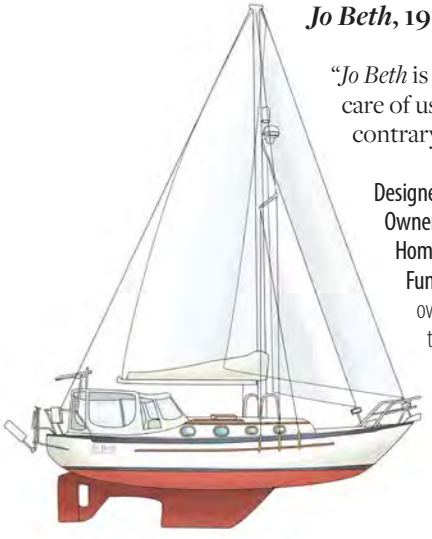


ILLUSTRATIONS BY FRITZ SEEGERS

Designer: Carl Alberg
Owners: Neil Sand and Emma Morgan
Home Port: Mandeville, Louisiana
Fun Fact: Almost all of the hardware aboard *Brigadoon* is original marine bronze manufactured by Spartan Spar — Cape Dory Yachts' own spinoff hardware company. They are still in business today and produce nearly every piece of bronze found on classic Cape Dory sailboats.

Termite Trouble on page 21.

Jo Beth, 1984 Pacific Seacraft Crealock 34



"*Jo Beth* is our literal dream boat. She takes great care of us, despite our occasional efforts to the contrary."

Designer: William "Gentleman Bill" Crealock
Owners: Bill and Lisa Ballard
Home Port: Savannah, Georgia
Fun Fact: *Jo Beth* is hull #16; we bought her from the original owners through the original selling dealer, who happened to be the very first dealer for Pacific Seacraft. We've owned her for 20 years, and have lived aboard full time for eight of those years.

Overboard! on page 44.

Pelican, 1985 Pearson 303

"I began sailing a Sunfish at about 9 years old, then a 17-foot O'Day, a Jeanneau Tonic 23, a Catalina 25, a Tartan 27, and now the Pearson 303 at age 62. *Pelican* is not particularly fast, but she's comfortable and capable. For us, she is new enough to be spacious and old enough to be very solid — just a good old boat."

Designer: Bill Shaw
Owners: Steve and Sue Bufe
Home Port: Middle River, Maryland
Fun Fact: *Pelican* has an encapsulated keel, skeg-hung rudder, and keel-stepped mast — all features I admire in a sailboat.

Suck It Up on page 42.

View from Here

BY DEBORAH BACH

At this time of year, when the Pacific Northwest is mired in its monthslong stretch of gloomy weather and darkness, I'm typically drinking vats of strong coffee, thinking about a winter getaway somewhere sunny, and invariably, daydreaming about the great cruising we did the previous summer.

Every summer's cruising is memorable in some way. The summer before last, we circumnavigated Vancouver Island and experienced its wild, remote west coast. A few years earlier, we cruised to Southeast Alaska and saw a calving glacier up close. Last summer, we decided to be less ambitious and more relaxed, to stick closer to home, to revisit familiar places and see a few new ones. The result was a cruise I'll be thinking about for years to come.

In keeping with tradition, we started the trip in Port Townsend, an absurdly charming Victoria seaport with a thriving maritime culture that we can never seem to get enough of, then crossed the nearby Strait of Juan de Fuca and headed north to the San Juan Islands. We had no plans for the Fourth of July, so we decided to meet up with friends who were taking their boat to Roche Harbor, a historic resort and marina on the northwest end of San Juan Island. My cousin also showed up with his family on their catamaran and we all dinghied ashore for a festive day of July 4th activities — a marching band, the very popular log-rolling contest (which, I discovered, my cousin had won several years in a row), a stop at the pub — and later, an impressive fireworks display. It was by far the most fun Fourth of July I've experienced since moving from Canada to the U.S. more than 20 years ago.

We spent the next couple of weeks hopscotching through the San Juan Islands and their Canadian neighbors, the Gulf Islands, stopping at a few places we'd never been and revisiting some old favorites. On B.C.'s tiny Russell Island, we walked to the small house built in the early 1900s where Maria Mahoi, an Indigenous and Hawaiian woman, homesteaded with her husband and their children. Hawaiians began settling in the Gulf Islands in the mid-1800s, and signs of that history — including 17 orchards throughout the Gulf Islands where visitors are permitted to pick fruit and nuts — can still be seen today.

We next anchored in Montague Harbour off Galiano Island, on the west side of the Strait of Georgia. We'd seen little of Galiano on previous visits — at 17 miles long, with many twisty, hilly roads, the island isn't very walkable. But this time, we rented scooters at a small building just up from the dinghy dock. After touring the island and stopping by its farmers market, we hiked up Mount Galiano, enjoying panoramic views from the top of the Southern Gulf Islands, the San Juan Islands, and the Olympic Mountains in the distance.

Our main goal for the five-week cruise was to finally get to Princess Louisa Inlet, a fabled fjord on B.C.'s Sunshine Coast with cascading waterfalls, vertical granite cliffs, and towering forested mountains. The inlet was every bit as spectacular as we'd anticipated, and the trip there offered some wonderfully unexpected surprises, including a stop at Backeddy Resort & Marina, in the small village of Egmont.

We'd gone there mostly to get fuel, do laundry, and break up the trip to Princess Louisa, but discovered, to our delight, a charmingly rustic marina that felt like a throwback, with a friendly staff and a pub with tasty food and a deck offering magnificent views of the water and surrounding mountains. From the marina, it was about an hour's walk to Skookumchuck Narrows, a natural wonder where billions of gallons of water rush through a narrow strait twice daily at speeds of more than 16 knots.

There were other new experiences on that trip — more great hikes, a couple of terrific anchorages, stunningly good wood-fired pizza from a food truck — and we returned home with memories that will sustain us until next summer's cruising season starts.

Our summer 2023 cruise reaffirmed the joy of revisiting favorite destinations and reminded us that even in the places we think we know, there is always, always something new and wondrous to discover.

Wheel Covers, Rainbows & Nonsuch Love

Mail Buoy

It's not the most beautiful buoy in the world, but it's the story I like.

Red #8 (pictured below) sits in Little Bay de Noc in upper Lake Michigan, near the town of Escanaba where we sail our 27-foot Columbia 8.3. The buoy marks the east side of the shipping channel coming into port, which is frequented by American Queen Voyages ships and coal or limestone bulk carriers as well as United States Coast Guard (U.S.C.G.) vessels. There is also a small shipyard here. Up until a few years ago, Escanaba was a port for loading taconite iron ore pellets.

But my favorite part lies deeper. The #8 buoy marks the edge of a steep dropoff that culminates at a depth of 100 to 120 feet, marking an old glacial river channel now covered by the waters of Lake Michigan. On either side of the old river channel lie very old "beaches," now found at a depth of 35 feet. When ice was melting in what is now Lake Superior, the meltwater outlet (today's Sault Ste. Marie) was

At left and below, **Gary Williamson shows off his steering wheel dress-up.**

blocked by ice. The river found an outlet south through the Au Train/Whitefish Channel around 7,000 years ago. Fascinating stuff.

Like most of the buoys these days, the brass bells have either been stolen or removed by the U.S.C.G. ATN folks. Farther out in Lake Michigan, the next buoy (#6) still has a bell. For what it's worth. Thanks.

—**Gregg Bruff**
Escanaba, Michigan

Steering Wheel Dress-up

I just finished reading the article "Dress Up the Steering Wheel" in the October 2023 issue of *The Dogwatch* and thought I would send you a couple of photos of my steering wheel that I dressed up a couple of years ago using paracord. I had previously covered it with white cord as I found that in the middle of the summer, in the hot sun, it got too hot to hold onto. But the white cord had gotten discolored and was wearing, so I thought I would make it a little more colorful. I found a paracord with a color and pattern I liked and started to re-cover it. I got a little carried away at some point; I found some paracord with reflective properties and did the spokes in it. In addition to putting a Turk's head at the top center location, I also did Turk's heads at the 15° to port and starboard helm locations with appropriate colors.

—**Gary Williamson**
Brighton, Ontario

Nonsuch Love

I received the anxiously awaited latest issue of *Good Old Boat*. As always, it never disappoints. The article on the Com-Pac Sun Cat was especially interesting. I always wanted a cat boat, but last year opted to buy a 1987 Nonsuch 30 along with my cousin, Chris Allen. These are very easy to sail, great boats that few know about. As a 68-year-old almost senior citizen, I find the wishbone boom and sail cradle especially convenient. Everything is controlled from the cockpit, so I can sail with a cocktail in hand or a full crew. Its wide beam allows for sleeping four easily, and six in a pinch. It's also got a nice galley, head, and shower. Mine needs a little work before bluewater sailing, but that's the plan. A good day is when another issue of *Good Old Boat* arrives. Thanks for a wonderful magazine.

—**George Allen**
Tall Timbers, Maryland

continued on page 55

Beneteau First 375

A fast and comfortable racer-cruiser that has stood the test of time

BY BERT VERMEER

While on vacation in Mexico, Debbie Bulk dreamed of a better way to see local village life away from the regular tourist destinations. On an idyllic evening stroll near a marina, she and her husband, Hans, caught the reflection of boats on the still water. The idea of vacationing aboard a sailboat began to ferment.

Upon their return to the family greenhouse business near Victoria, British Columbia, Debbie and Hans signed up for midwinter sailing lessons. The search for a sailboat was on, and a Beneteau First 32 opened a lifetime of adventures for the family. The couple gained sailing experience in the Canadian Gulf Islands, north to Desolation Sound, and south to the San Juan Islands in Washington. But with four growing children, the First 32 was getting a little cramped. Liking what they had in the First, they found a 7-year-old Beneteau First 375 in San Francisco, had it trucked north, and named it *Shadow Rose*.

After racing and cruising in their home waters, the couple cruised south to Baja Mexico for 18 months, making their long-ago dream a reality. As the years went by, they made the jump to the "dark side" by buying a trawler and selling the Beneteau in the fall of 2022 to a friend, Jamie Naismith.

Beneteau First 375

LOA	37'1"
LWL	33'2"
Beam	12'4"
Draft	6'6"
Displacement	15,432 lbs
Ballast	5,291 lbs
Sail Area	648 sq ft
SA/Displ.	16.8
Ballast/Displ.	34.3
Displ./LWL	189
Comfort Ratio	24.5
Capsize screening formula	1.98

Design

The Beneteau family has been building boats since the 1800s, initially specializing in sail-driven commercial fishing boats designed in-house by family. By the 1950s, small diesel- and gasoline-powered boats were of more interest to fishermen, so Beneteau changed direction and began development of small recreational sailboats, produced in a new material called fiberglass.

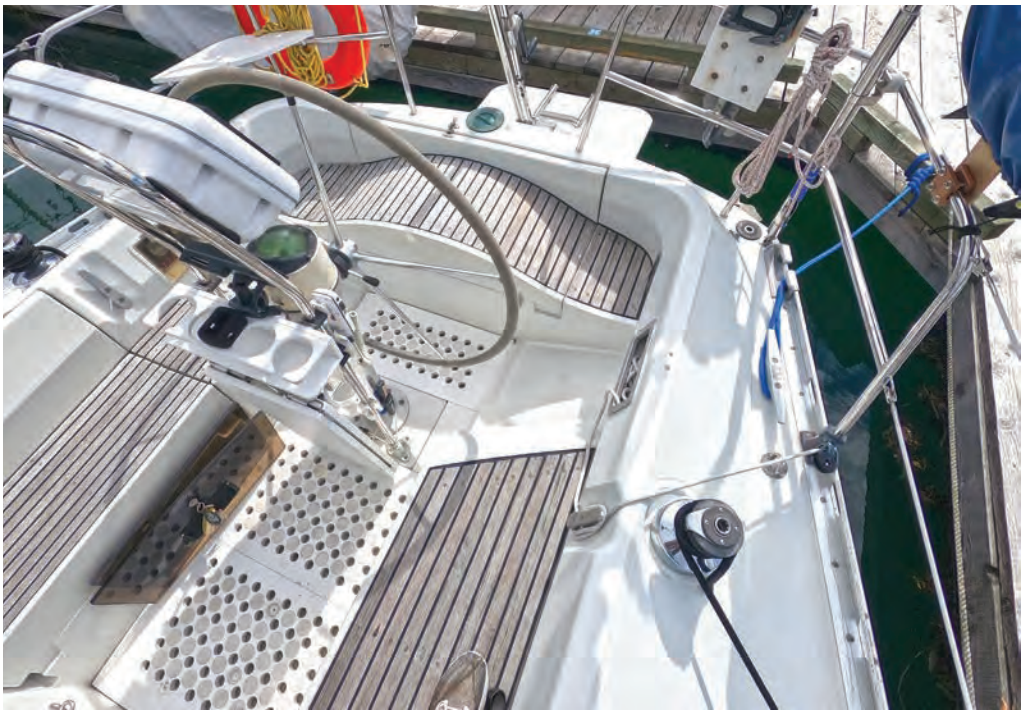
At left, **all lines, including the controls for the solid vang and baby stay, are led aft to the cockpit. The baby stay, adjustable from the cockpit, prevents mast pumping in heavy seas.**

Next page, top left, **Hans and Debbie invested in their sail inventory, which improves performance and makes the boat look sharp, with well-trimmed, tight sails.**

Top right, **the double-spreader rig has single uppers and lowers, as well as intermediate shrouds.**

Bottom, ***Shadow Rose* looks shipshape and ready for another run to Mexico, with the bimini and dodger providing environmental protection. Note the hoist for raising and lowering the outboard motor.**


SIDNEY
BC



All instruments, and engine and autopilot controls, are easily reached by the helmsperson. The T-shaped seating has a raised helm seat across the lazarette lid, but it is not raised enough to be able to see forward over the coach roof. The best sailing seats are atop the wide coamings.

In the late 1970s, Beneteau's First line of yachts was developed and the company brought in naval architect Jean Berret, a member of the design team for *Phoenix*, a successful One Ton racer in the Admiral's Cup regattas of the mid-1980s. Expanding on that design with a cruising interior, Berret introduced the First 375 in 1985. The slippery IOR-influenced hull form was popular with cruising and racing skippers, selling nearly 300 units in a four-year production run. Two interiors were offered. *Shadow Rose's* has its galley and salon table to port, a generous double aft cabin, and a voluminous cockpit locker to starboard. The alternate layout has the galley and salon table to starboard, with a single berth aft cabin and a double berth in another aft cabin to starboard. This layout eliminates the cockpit locker but provides three separate cabins. In both options, the head is aft, opposite the galley.

Construction

The hull is handlaid solid fiberglass and polyester resin with reinforcements in the high-stress areas. I suspect that these hulls were fabricated just before the Beneteau factory introduced vacuum bagging as a production process to better consolidate the laminate and reduce excess resin.

Two keel options were offered, *Shadow Rose's* 6-foot 5-inch deep fin, and a shallow draft option at 5 feet 6 inches. The keel bolts are accessible in the bilge. *Shadow Rose* had her excess bottom paint stripped a few years ago, which uncovered only a few minor blisters.

Four substantial hollow fiberglass ribs run athwartships under the teak-and-holly cabin sole, and the sole panels are removable for access to the hull. Two solid longitudinal stringers outboard of the settees run the length of the main cabin and form anchor points for the stainless steel chainplates. With the keel-stepped mast set well aft of the forward bulkhead, the stays are

The conventional salon accommodation plan has facing settees, table, teak-and-holly sole, and an L-shaped galley.

Looking aft from the main bulkhead, the door to the aft cabin is on the port side and the head to starboard.

connected to the chainplates with stainless steel rods visible in the salon. Inspection of the chainplates is through cutouts in the cabinetry.

The deck is balsa-cored, with solid fiberglass where the deck hardware is fastened. Backing plates are stainless steel and in most cases accessible. The hull-to-deck joint is an inward-turned flange with the deck set onto a bonding compound and fastened through the aluminum toerail every 4 inches. Hans reports no leaks in this structure over the years, despite some rough offshore sailing.

The forward bulkhead separates the V-berth from the main cabin and is glassed to the hull and deck. Under the forward cabin sole is a fiberglass pan, usable as a sort of shallow storage bin. A 10-inch circular cutout in the subfloor appears to be factory cut, allowing access to the hull for instrument transducers forward of the keel.

Moving aft, there is a partial bulkhead that encompasses the aft head, companionway, and access to the aft cabin. Under the T in the cockpit there is an additional full-width bulkhead separating the cockpit locker from the lazarette at the stern. The engine compartment is separated from both lockers with plywood, keeping storage items away from the engine.

The lazarette has a box-shaped fiberglass structure that holds the rudder post and steering gear — the typical chain and cable-and-quadrant setup. All of these structures appear to be somewhat overbuilt for the size of the First 375. A small blackwater holding tank is located inside the locker as well, but is too small to be useful for any kind of cruising. Replacement with a larger tank mounted in the roomy cockpit locker is the logical solution.

Deck and Rigging

The standard double-spreader, keel-stepped mast rises 49 feet above the deck. A slightly shorter rig (47 feet 6 inches) was matched with the shallow-draft model. The upper and lower stays terminate at the same deck plates set well inboard. Depending on the year of manufacture, a stainless steel double-roller platform was also installed. A vertical windlass was added during the cruise to Mexico, mounted just forward of a deep anchor locker that provides plenty of room for chain and rode.

Halyards and control lines exit the mast to turning blocks at deck level, then out to organizers and back to line stoppers with self-tailing winches at the trailing edge of the coach roof.

Genoa sheet tracks are set proud on the deck next to the cabin trunk, extending from the chainplates back to the cockpit. A turning block mounted well aft provides a proper sheet angle to the primary self-tailing winches. The slotted toerail is available for spinnaker blocks, with dedicated self-tailing winches mounted aft on the cockpit coaming.

The boat is rigged with double lifelines and nicely tapered stanchions set in cast aluminum bases against the toerail. The bases have been

The chart table has limited space for electronics, but most are located at the helm, where they are much handier.

known to fail and should be monitored for cracks.

A clear Lexan companionway slide, along with three large deck hatches, allow plenty of light and ventilation into the cabin.

Aside from the cockpit seats, the only teak on the Beneteau First 375's deck is the cabin top handrails. On *Shadow Rose*, these have been replaced with stainless steel tubes flattened into an oval and mounted on the molded-in bases — stronger than the factory teak handrails and without the maintenance.

The cockpit is small compared with modern designs of the same length. With the tapered stern, the available space narrows near the pedestal and wheel. This works well for bracing feet against the opposite seat, but unfortunately, the vertical coamings have a two-angle shape. Lacking in height, they fail to provide enough back support to be comfortable.

The cockpit sole is curved up toward the gunwale at the T, allowing excellent footing for the helm position on the leeward side when heeling. From a personal viewpoint, these curved soles invite twisted ankles until one is familiar with the curve. I much prefer a flat surface, particularly when motoring or stationary.

The 36-inch wheel is readily accessible from the windward or leeward side without having to stretch too far. But it is constantly in the

Access to the engine compartment is excellent, with removable companionway stairs and an opening cabinet in the aft cabin.

way when at anchor or the dock. Hans fabricated a fitting that enables the wheel to be removed and stowed out of the way when not in use.

The cockpit seats are covered with teak and "tar" strips glued to recesses in the fiberglass lids. Time and exposure to sun have caused the black bedding compound to deteriorate, separating from between the teak strips. It's an ongoing maintenance issue.

Sails

Recent purchases include a new fully battened main with lazy jacks and 130% genoa. A 90% jib is also available but seldom used in this light-air coastal environment. For sailing through a British Columbia summer, the genoa is quite adequate. An asymmetrical spinnaker flown off the new extendable pole at the bow enhances off-wind performance.

Accommodations

Climbing over the cockpit bridge into the cabin is like a flashback in time. There is warm teak cabinetry throughout the interior. The U-shaped galley is to port, with a substantial island and countertop on the centerline. Storage above the stove and in the surrounding cabinetry is exceptional, and there is additional storage in an exposed shelf against the hull and a hanging locker. An opening port in the galley provides ventilation. As in many boats of this era, the cabin liners had failed over the years, with the vinyl separating from the open-cell foam glued to the hull and overhead. Aboard *Shadow Rose*, the liners have been replaced with vinyl and closed-cell foam panels screwed into place, maintaining the original appearance. There is another opening port from the aft cabin into the cockpit.

To starboard of the companionway is the head/shower compartment. A small vanity with a sink and shower wand make this a perfectly serviceable head. Two opening ports provide light and ventilation.

Forward of the head is the dedicated nav station with seat and chart table. There is storage under the seat, in the chart table, and in cubbies.

The main cabin has a U-shaped settee to port, with a large table attached to the mast. A drop leaf services the settee on the starboard side. This arrangement could easily seat six in comfort. Both settees could be considered full-length berths. There is open storage above and behind both settees. A pair of 35-gallon water tanks resides under each, which substantially reduces storage capacity under the settees.

Although *Shadow Rose*'s ultimate destination was the hot sunshine of Mexican waters, sailing in the Pacific Northwest required some sort

Like many other boats with narrow ends, the V-berth is wide at the head and narrow at the foot. With the failure of the vinyl liner on both the hull and overhead surfaces, oak and ash slats were installed over closed-cell foam.

The toilet has exposed plumbing with ready access to through-hull ball valves.

of cabin heating, so a Dickinson Newport 1200 propane bulkhead-mounted cabin heater was installed.

Mechanical

Standard propulsion for *Shadow Rose* was a 2002 Volvo Penta 28-hp diesel with fixed propeller. To reduce drag under sail, a three-blade Kiwiprop composite feathering prop was installed, an economical alternative to expensive bronze feathering-and-folding props. Hans says the Kiwiprop has stood the test of time and sea miles, performing as advertised. The Volvo was still going strong when Hans and Debbie decided to replace it with a Beta 30.

The three-way hot water tank is located in the roomy cockpit locker. The single starting battery and three group 31 AGM house batteries are under the aft cabin mattress. The refrigeration unit is located in a locker behind the port settee.

For the Mexico cruise, a Raymarine wheel autopilot was installed. Although pushing the 18,000-pound limit for the autopilot, it performed as expected, with hand steering required in stormy conditions. Since then, a Raymarine below-decks autopilot has been installed and has worked flawlessly.

Underway

Pulling away from the dock at idle, the Beta diesel was a distant murmur in the well-insulated engine compartment. With a deep fin keel and large spade rudder, *Shadow Rose* behaves as expected in close quarters, infinitely maneuverable with only a hint of prop walk. Powering up to 2,800 rpm delivered 6 to 6.5 knots, with plenty of rpm in reserve to attain the 7.7-knot hull speed. Adding a secondary "muffler," such as a Centek water separator, would reduce the exhaust noise considerably without increasing back pressure.

Although not a modern lightweight flier with a large flat run to the wide stern to enhance off-wind performance, the Beneteau First 375 heels slightly and settles into a groove to sail effortlessly to windward. Perched on the wide sidedeck with the large wheel readily at hand, watching the genoa telltales, the helmsperson has a fabulous view forward. Sitting on the leeward side is a bit more challenging. The canted sidedeck makes sitting upright difficult. Using the stern pulpit as a backrest is the solution. Although not likely to surf down waves off the wind, the First 375 performs admirably.

I was pleasantly surprised at *Shadow Rose's* acceleration and speed going to windward. Reaching and running were a challenge in the light breeze, but she continued steadily through powerboat wakes without slowing. The helm was light and sensitive to the touch.

For comparative speed, the PHRF number for the Beneteau 375 is about 111 seconds per mile in most fleets around the country, while two other designs of similar age, the J/37 and Tartan 37-2, rate around 72 and 144, respectively.

Conclusion

I consider the Beneteau First 375 a near-perfect coastal cruiser for inland waters, with proven offshore capabilities. The ability to go to windward or run with the wind is of paramount importance in most coastal areas, where prevailing winds follow the coastline. A boat either sails well in these conditions or motors extensively. The Beneteau First 375 succeeds in the sailing part of that equation.

From an interior layout that is pleasing to the eye and roomy enough for four (but perfect for two), to the wide sidedecks and low coach roof that provide for safe and easy access to the deck, the Beneteau First 375 is a classic good old boat that seems to have slipped by unnoticed.

A number of 375s are currently listed for sale online, with most asking in the $50,000 range.

Bert Vermeer and his wife, Carey, live in a sailor's paradise. They have been sailing the coast of British Columbia for more than 40 years. Natasha, *an Islander Bahama 30, is their fourth boat (following a Balboa 20, an O'Day 25, and another Islander Bahama 30). Bert tends to rebuild his boats from the keel up. Now, as a retired police officer, he also maintains and repairs boats for several nonresident owners.*

Owner Comments

The 375 was derived from a racing design. As such, she has a powerful rig with relatively small primary winches (as standard). Cruising with a 130 high-cut roller-furling genoa, she is fully powered up to windward in about 12 knots true. For cruising as a couple, we have to reef fairly early. With that said, she is fast, well balanced, and very comfortable. My best this year was a full 15 to 20 minutes of windward sailing without touching the helm.

The main traveler is now forward of the companionway. This increases the force needed to fully trim the main. It needs to be winched, but the cockpit and bridge deck are much more usable without the traveler in the cockpit.

The best feature is the joy of sailing her. The worst feature is the sloped cockpit coamings that when racing, are not very comfortable for sitting on when the boat is not heeled.

I haven't had any issues with build quality; that's an accolade for a 38-year-old boat. I have had to rebed the hatch lenses (who hasn't!). Use Dow 795 Silicone Building Sealant for best results.

I have owned many racing and cruising sailboats. The 375 is my favorite all-rounder.

—**Jamie Naismith**, Sidney, British Columbia

A Fair Lead

Taking inspiration to create a more functional and gooseneck-friendly vang/preventer

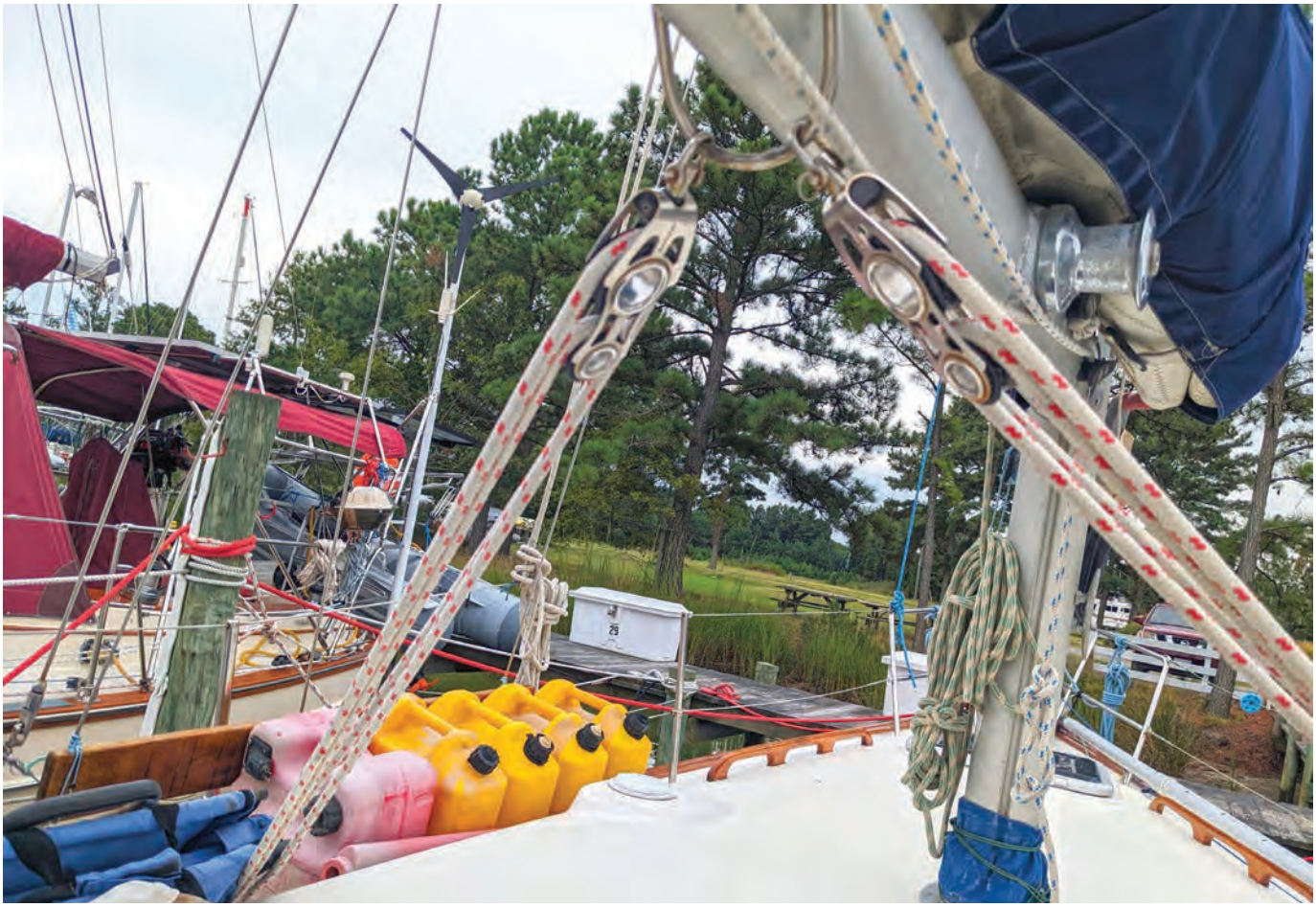
BY ASHLEY GREMEL

I started sailing as an adult and honed my skills racing on San Francisco Bay aboard other people's boats. On my first day on the water, I managed the traveler for a fun day on my now-husband's Ericson 34, *Dreamcatcher*. I loved learning when to release one side and haul in the other, all while new friends managed other parts of the line handling during a tack. I was hooked and joined other race crews so I could get out multiple times per week.

After a few seasons on the rail, I earned a spot trimming spinnaker and jib. In sail trim, there is an easeful intensity and specificity that I haven't found present in other hobbies. I enjoy sewing and knitting and being outside, so tuning fabric to the wind was pretty heavenly.

When my husband, Scott, and I purchased our Pearson 365 sloop, *Azimuth,* it had just about everything we had been looking for in a liveaboard cruiser — stout design and construction, modest sailplan,

On *Azimuth*, note the red and white line that leads from the cockpit combings, along the bulwarks, to a set of block and tackles, and up to the boom.



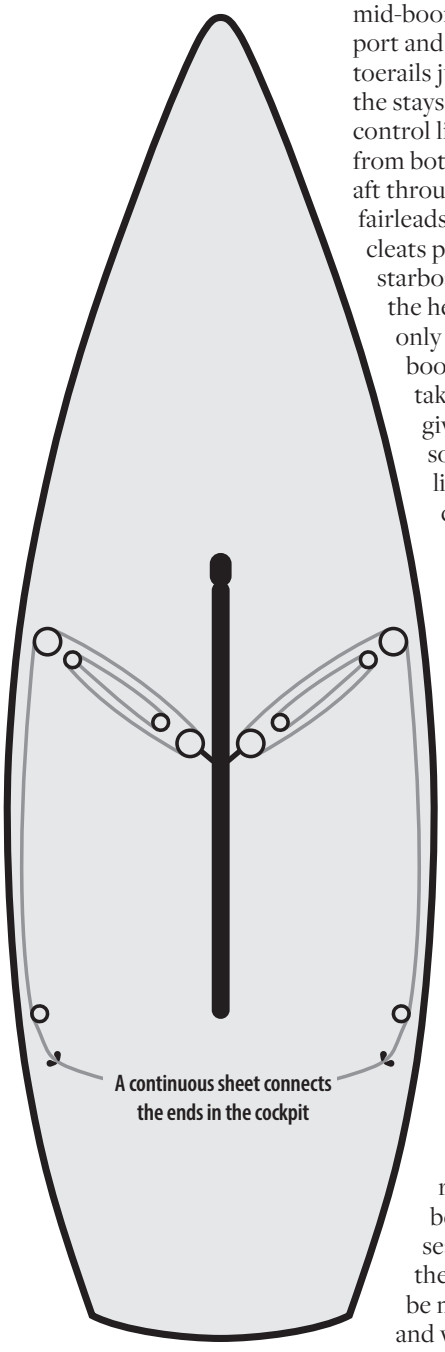
Each block and tackle connects via a boom bale through-bolted to the boom.

large cockpit, standing shower, and a U-shaped galley. The one catch I recall was that the only deck-mounted control for the mainsail was the mainsheet. We could adjust the sail a little bit more with the outhaul and halyard tension, but that was it.

In 2018, we began planning a trip down to Monterey with Scott's father and sister aboard *Azimuth*. We had sailed out the Golden Gate Bridge many times, but never for this many miles nor while hosting guests. We combed the boat for ways to be more prepared for the journey and in doing so found a crack developing in the gooseneck. Our initial idea was to bring it to a rigging shop and ask about getting it welded. On a sunny day in September, we drove up to KKMI boatyard and explained our quest. The man working at the shop that day explained that he could certainly weld the gooseneck to reinforce it, but also added that we should consider the cause behind this symptom. Without additional controls on the mainsail, our boom tended to twist when going downwind and the gooseneck took most of the pressure. We filed this information away for another day and continued prepping for our short cruise.

A few years later, we had set our sights on sailing from

California to the Chesapeake Bay via the Panama Canal. It was time to find a solution to the twist in the main, as well as rig a preventer to avoid accidental jibes. Scott recalled an old issue of *Good Old Boat* in which Jerry Powlas described a combination vang/preventer on his and Karen's C&C 30, *Mystic*.



Here's Jerry's description of the system:

"Vang/preventer? We knew of no existing term for this rigging, and we had to call it something. On *Mystic*, the vang/preventer is a pair of 4:1 tackles leading from mid-boom to the port and starboard toerails just abaft the stays. A single control line runs from both tackles aft through fairleads and cam cleats port and starboard of the helm. Because there is only a single line, as the boom swings off, line taken by one tackle is given up by the other, so very little excess line clutters the cockpit. A flick of the wrist controls the boom.

On *Mystic*, the vang/preventer is actually a better vang, a better preventer, and a better traveler than anything else we could have devised. *Mystic* had a traveler when we bought her, but it was a simple affair with no control lines. The idea was to lift the detent pin and move the car stop to the new location. The traveler was about 2 feet long and resided on a beam between the cockpit seats just in front of the wheel. It could not be moved under load and was only useful when beating. It was too short to help on a reach."

With Jerry's plan in mind, we sourced two 4:1 block and tackles from Garhauer, a boom bail from Defender, and enough line to run the system in a continuous loop. We then positioned it aft enough to provide proper leverage, but not so far as to hit the center hatch. The ends of the line were tied onto the block and tackle, and the slack lay in the cockpit. We added cam cleats to the cockpit combings and everything could be managed without going forward, often without even getting up from our seat. Other sailors often asked about this system and we inspired at least one crew to install something similar on their vessel.

A cam cleat facilitates easy sheeting, allowing one person to tighten or loosen each side.

But how did it hold up?

We used this vang/preventer system for over 9,000 miles in the course of two years. The only maintenance required was soaking the lines in laundry detergent to soften them after our boat sat docked for a season while the trade winds blew offshore in Cartagena, Colombia, in 2022. The gooseneck had no further problems now that the main remained flatter downwind and I'm sure this system avoided a few accidental jibes on the long, rolly passages downwind on the Pacific coastline of Mexico and Central America. These lines did provide another obstacle to cross when we moved forward, requiring us to reclip the double-ended tethers onto the jackline, but overall we felt this tradeoff to be worth it in avoiding a preventer that needed to be connected near the bow.

Ashley Gremel is a writer, maker, and problem solver. She recently completed a voyage from San Francisco to the Chesapeake Bay with her husband, Scott Racette, and their salty cat, Cypress. The trio is settling down in Richmond, Virginia, and dreaming of the next cruise. Ashley writes weekly at cloudsformoverland.substack.com.

Heating *Honcho*

Installing a cabin heater for cool cruising adventures in a warm boat

BY JOHN LANGFORD

Honcho, our 1998 Beneteau 36s7, needed cabin heat. Even though we had given up cruising in the coldest months of the Pacific Northwest winter, we still wanted a warmer boat for those cool early mornings and evenings on damp summer days, and for shorter getaways in the spring and fall.

A popular option for boats of this size is a diesel furnace with forced air or hydronic outlets serving two or three cabins. They are easy to use, warm a space quickly with dry heat, and can run 24 hours a day if necessary. But with the exception of cheap knockoffs, they are expensive and can be complicated to install. They also use a lot of battery power and take up locker space for ducting or hydronic fan units. And in my experience, they can be noisy and fussy, requiring costly expert help and proprietary tools to deal with reluctant starts, unexplained shutdowns, and faulty safety sensors. They also suffer if not used for long periods of time.

The only other safe option is an externally vented freestanding or bulkhead fireplace using solid fuel, diesel, or propane. *Honcho* doesn't have the room for a freestanding heater, but it does have one unused bulkhead dividing the salon from the forward V-berth cabin that seemed suitable for such a fireplace. But before proceeding, I needed to answer some important questions.

First, would a bulkhead fireplace provide enough heat? We have excellent bedding and like sleeping in a cool space, so our primary interest is being able to raise the temperature in the main cabin and the head from, for example, 50 F (10 C) to 65 F (18 C) in the mornings and evenings. We close the forward and aft cabin doors but leave the head door open when the heater is on. On *Honcho*, this gives us approximately 1,050 cubic feet to warm up. The standard Btu calculation formula to create and sustain a desired temperature suggests we need a heater that produces around 2,500 Btus. Given the inadequate insulation on the average sailboat — especially underfoot — and the desire to heat up the area quickly, we would want a heater that produces at least 4,000 Btus. The full range of solid fuel, diesel, and propane bulkhead heaters I

The new propane fireplace connected to the chimney and secured to the bulkhead.

At left, **the flue cap and base attached to *Honcho's* cabin top.**

Below, **the fuse block holder and power switch on the back of the fireplace bulkhead.**

considered claimed to produce that and more.

Thus, our second question: Which heater to choose? In my case, it was easy to rule out a solid fuel fireplace. Some years ago I had a rather negative experience on an old wooden boat with an ancient Lunenburg Foundry wood stove. While there are now more efficient and attractive units available and the crackle of a visible wood or briquette fire is appealing, there are serious drawbacks to a solid fuel heater on a small boat. First, you need a long stack to ensure that the heater draws effectively. If the bulkhead space you want to use is not close to the cabin sole, you might be faced with accommodating a chimney and flue cap as much as 2 to 3 feet above the deck. Most of this length must be removed and temporarily capped while sailing.

Second, you must anticipate dealing with soot on the deck, and possibly the canvas, if the burn is inefficient. Damper adjustments can be critical to ensure a clean and efficient burn. Third, there is the challenge of finding, cutting (in the case of wood), and storing appropriate-sized solid fuel. Finally, on *Honcho*, the anxiety of removing ash from a firebox 6 inches above a white leatherette settee cushion sealed the deal. So, no solid fuel heater.

Bulkhead or freestanding diesel heaters have been quite popular over the years, but they present their own challenges. If your boat is diesel powered, you would anticipate pumping fuel from your main fuel tank. If that is not practical, or if you prefer to use cleaner burning and less smelly kerosene, you will need to install and regularly fill a day tank inside or outside the cabin, preferably above the heater to allow for a gravity feed. Like solid fuel heaters, diesel heaters require long chimneys. They can also be tricky and smelly to start, sometimes requiring an accelerant such as denatured alcohol to get the diesel burning. The firepot itself requires occasional cleaning, which is a messy business. Finally, diesel heaters don't like excessive heeling when running underway and can blow out or smoke in strong wind.

A final point applies to both solid fuel and diesel heaters. They both draw air from the interior and therefore require a nearby external vent or open hatch, allowing a constant supply of fresh, and unfortunately cold, air into the cabin.

Taking all of the above into consideration, we opted for propane as our bulkhead heater fuel on *Honcho*. It is clean and easy to light, but requires careful installation and a reliable supply of fuel. Propane is familiar to most boaters. I had a successful experience with a propane bulkhead heater on one earlier boat and already have a propane cooking stove and a dedicated propane tank locker on *Honcho*. I chose the Dickinson Newport P12000 fireplace, which provides up to

5,500 Btus and features a ceramic glass viewing window, a downward-facing internal fan to distribute heat, good wind tolerance, and a manageable length, double-walled chimney pipe that simultaneously expels exhaust and pulls fresh air into the sealed furnace. The heater comes with the chimney and flue cap. The only accessory we added was a stainless steel guard for the flue cap designed to both shed jib sheets during tacks and further reduce wind impact on the fireplace. The former function is essential; the latter can be helpful in gusty conditions.

But before ordering any bulkhead fireplace, there are questions to address. First, will your bulkhead location work? To answer this question, we had to consider both the space itself and our capacity to deliver fuel and electrical power to the unit.

The space issue can be tricky. The potential locations on many boats will be on a bulkhead at the forward end of a settee. The Dickinson fireplace is roughly 16 inches high, 10 inches wide, and 8 inches deep. Our settee is almost 7 feet long, so the depth is not an issue. If your settee is shorter, stealing 8 inches from the length might interfere with its use as a bunk or even a seat. The unit also requires that the chimney be at least 20 inches long, and there must be at least a 6-inch space below the bottom of the fireplace. On *Honcho*, with 47 inches between the settee and the ceiling liner, we could accommodate these requirements, but a smaller boat might not. In some cases, it might pay to mock up the heater in cardboard and tape it to the bulkhead to be sure it won't get in the way of any normal activity in the cabin.

T-fitting below the solenoid and two propane lines exiting the compartment via vapor-tight fittings.

The author built a platform to hold a spare 5-pound propane tank in a dry bag.

You also have to be confident that you can safely cut a 3-inch hole through the cabin liner and deck to run the chimney out to the external flue cap. Ideally, you want the flue cap to be located directly above the heater. Some heaters may allow for a chimney offset of up to 45 degrees. But a flue cap sticking out of the cabin side looks terrible, increases the risk of rain or spray intrusion, and might constitute a hazard on a side deck. Be sure there are no wire runs between the liner and the deck where you intend to cut, and nothing on deck to impede the placement of the flue cap. I once heard a sad tale of an inflatable being stored upside down on the foredeck above a flue cap. You can imagine what happened on one cool evening that followed.

The next task is confirming that you can deliver fuel to the fireplace. Before ordering the fireplace and propane hose, I ran a messenger line along the only possible route to establish the exact hose length required to reach from inside the stern propane locker to the fireplace and determine the spots that would require widening to allow passage of a hose with a ⅞-inch-wide flare fitting. Make sure you measure generously when estimating the length of hose required. You can have hoses custom-made to the length you require, but if you are even a couple of inches short, you have to buy a new hose.

The next step is to establish access to 12-volt power for the internal fireplace fan, a propane sensor/alarm installed close

At left, ***Honcho's*** **dual compartment propane locker.**

Below, **the author added a protective hat for the flue cap and base for when the heater is not in use.**

to the sole of the boat below the fireplace, and a second fan designed to enhance the circulation of heat from the fireplace and the chimney around the cabin. The total load would be less than 1 amp, easily available on my boat at the back of the bulkhead from the interior cabin lighting circuit.

Having satisfied myself that the project would work, I purchased the fireplace, sheet/wind guard, and propane hose. But despite careful planning, the installation was not without its challenges.

Securing the fireplace to the bulkhead could not be accomplished without first fitting the flue cap. If you have a flat cabin top, this is easy. In my case, however, this could not be accomplished without constructing an 8-inch diameter base for the cap and sheet guard, flat on top and aligned on the bottom to the very steep, complex curve of the deck where the chimney pipe emerges.

Except for the sharp curve of the deck and liner, there were no impediments to my cutting the hole for the chimney directly above the fireplace using a 3-inch hole saw from both directions.

Along the way, I had been building what was intended to be a prototype of the base using laminated pine pieces. I used a band saw to create the 8-inch outside diameter width and the rough shape of the interface with the curved deck. A lot of grinding and sanding was required to fit the base tightly to the deck. I then cut a 3-inch hole through the middle of the pine base with a drill press and hole saw (be sure to drill a guide hole all the way through first) and positioned it on the deck over the hole in the deck. It fit so well that I gave up on the plan to create a second version in teak and instead, soaked the pine construct with several coats of epoxy and high-gloss marine enamel. I then attached it firmly to the deck with 3M Marine Adhesive Sealant 4000. As they say, "Perfect is the enemy of good."

After screwing the flue cap to the base, I was able to fit the chimney through the deck and the pine base and into the cap from inside the cabin. When I induced a very slight S curve, the 28-inch chimney section provided with the fireplace was exactly the right length to locate the fireplace 6 inches above the settee cushion and at a safe distance from the passageway to the forward cabin. If the gods are not smiling as kindly on you, it is possible, with care, to cut the double-walled chimney to length. Alternatively, smaller sections are available from Dickinson if the provided chimney is too short. It's best to locate the fireplace as low as possible while maintaining the 6-inch distance from any object directly below it.

When attaching the fireplace to the bulkhead, be careful that it is exactly vertical. If your boat has a chronic heel to port or starboard, you may be disappointed with the results if you use a level to establish your vertical line.

Creating the propane hose route was a bit of a challenge. On *Honcho,* no PVC tubes or significant open channels from the stern area were available for something as intrusive as a propane hose flare fitting. I was able to get the hose from the propane locker to the forward end of the aft cabin without too much difficulty. From that point, the passage beyond a hanging locker, storage compartments over the stove, the refrigerator, and the forward cabin bulkhead was won inch by inch using a flexible shaft bit holder to drill or widen holes, and files to create smooth edges. The hose needs to encounter smooth surfaces, with grommets or chafe protection at the bulkheads, and be securely supported along its whole length. Fortunately, in the open sections of the hose run on *Honcho*, the ceiling liner has an upturn at the hull-to-deck intersection that the hose can be tucked into. Remember to plug the ends of the hose flare fittings before working with them to ensure nothing gets into the hose that could later block the flow of propane.

To make the electrical connections tidy, I ran all the wiring to a small blade fuse block holder via a power switch on the back of the fireplace bulkhead. The fireplace wiring runs behind the liner and under the settee base, and only the short

***Honcho's* new fireplace in action — toasty feet on a cool evening.**

run to the fan is visible in the main cabin. The most difficult part of the wiring was getting power down near the main cabin sole for the MTI Industries propane gas sensor and alarm.

Why did I install a second fan? When I added the Dickinson propane bulkhead fireplace to an earlier boat, I noticed that while the double-walled chimney construction keeps the upper end of the pipe cool enough to touch, there is still a lot of useful heat in the section of the pipe directly above the fireplace itself. So I added a 2-speed Caframo Ultimate fan directed downward across the hottest part of the chimney pipe. It is quiet and is a useful complement to the fireplace's internal fan in moving heat around the cabin and down toward the cabin sole.

I then connected the new propane line to the tank in the stern locker. The locker is divided into two compartments, with the regulator, pressure gauge, and solenoid in one and the 10-pound aluminum tank in the other. Both compartments are drained overboard above the waterline from the base. The challenge for some boaters will be to find room in the locker for the appropriate T-fitting required to add the new fireplace line. Make sure to use the correct yellow Teflon tape to secure NPT-threaded connections and install a vapor-tight fitting where the new propane line exits the locker.

Sometimes wrestling the altered system into place in the propane locker can loosen fittings that you thought were tight. So when you turn the rebuilt propane delivery system on for the first time, you must check the various connections in the locker for leaks using soapy water, leak detection fluid, or a portable gas detector. I tried an inexpensive portable gas detector (Yeezou Technology Y201) for the first time with this project and found it invaluable in identifying specific fittings that required further tightening. In addition, I used it to check that the thermocouple devices on the stove burners were blocking the flow of gas when the heater was in use and the stove was not.

I noted earlier that there was only room for one 10-pound tank in *Honcho's* propane locker. The Dickinson heater is easy on fuel, offering five and a half hours of operation per pound of fuel on low setting, which is where I usually end up after a short time at a higher setting to get heat circulating. But to ensure I was never surprised by an empty tank, I decided to carry an inexpensive, steel Flame King 5-pound tank, with the valve closed and plugged, in a dry bag mounted low on a stern rail. The mounting platform consists of a 9-inch diameter stainless steel dog bowl screwed to a 10-inch diameter piece of ½-inch StarBoard plastic board. I drilled drain holes in the base, then secured it with standard rail mounts to a short, 1-inch stainless steel horizontal rail section. I attached that to a vertical stern rail using a 90-degree hinged rail T-fitting. The bag is secured to the vertical rail with one or more bungee cords. Don't forget, when creating a mounting system for a spare tank, that this platform also has to fit and secure the larger empty tank should you need to change tanks while on a cruise. Even an apparently empty propane tank should not be stored anywhere under the deck.

The propane sensor/alarm is close to the cabin sole and out of harm's way.

I hope this account encourages you to consider installing a bulkhead fireplace if you like anchoring out but feel a little reluctant on cool days to stay up after the sun goes down or get out of your warm bunk on a chilly morning. With the click of a power switch and a butane fire starter, you can warm up the cabin and enjoy the pleasant glow of the blue and yellow flame flickering behind tempered glass in the sealed firebox.

John Langford and his spouse, Kate Seaborne, live in Victoria, British Columbia, and have been sailing boats among the many islands on both sides of the border in the Salish Sea and in Desolation Sound for over 40 years.

Termite Trouble

How to fend off or fix an onboard termite infestation

BY NEIL SAND

"Surely it can't be that bad," I mumbled to myself as I tapped the hollow-sounding plywood with a screwdriver. Seconds later, my screwdriver punched right through what had once been the galley countertop of my newly acquired Cape Dory 30, *Brigadoon*.

It was that bad. The plywood surrounding the freezer hold had the strength and consistency of damp cardboard, and it didn't stop there. Most of the woodwork that comprised the aft portion of the galley was the same — a spongy, hollow mess covered by a thin veneer that crumbled at the touch. The once-beautiful Cape Dory craftsmanship had been utterly destroyed by a silent killer — the Formosan termite.

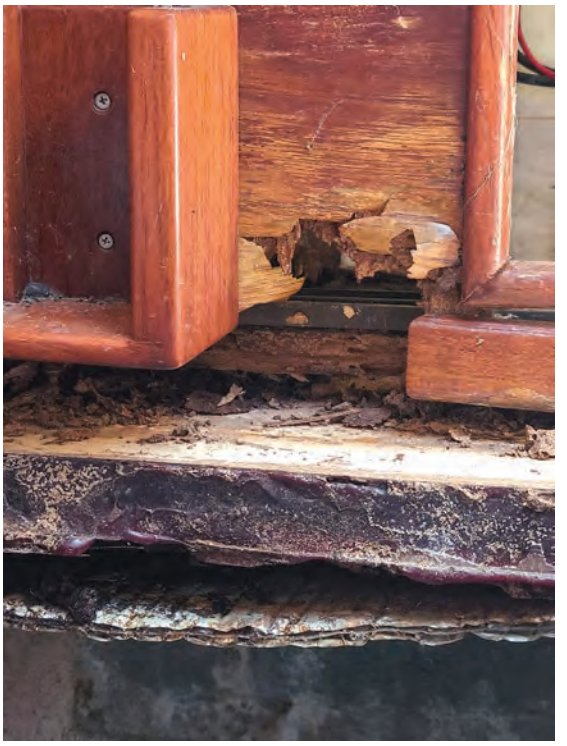
Formosan Termites

Formosan termites are a species of subterranean termite believed to have originated in China. They spread to Formosa (modern Taiwan) and Japan prior to 1600, and Hawaii by 1900. After World War II, they arrived in the United States in freight returning from the Pacific and quickly took hold in New Orleans. In the following decades, they spread throughout the Southeastern United States with tenacity and are now active in close to a dozen states, from Hawaii to Texas.

Formosan termites differ significantly from other termite species. They reproduce faster and are bolder foragers, resulting in colonies of millions of insects that spread with ease and rapidly consume any available wood. They reside in underground nests and avoid direct exposure, allowing them to take hold without being noticed. However, this does not limit their consumption to wood that is near or in contact with soil. Formosan termites are known to build foraging tunnels of "mud" (a mixture of chewed wood, soil, and waste) that extend upward from the soil to provide a sheltered path to untouched material. In this manner, a termite colony can access isolated regions of wood and spread throughout an entire structure with ease.

As part of their reproductive cycle, special winged Formosan termites called alates take flight and form swarms on late spring and early summer nights. These swarms can be extremely large and dense — a

The epicenter of *Brigadoon's* infestation was the freezer hold, which was dampened by a hatch leak overhead. Because Formosan termites avoid exposure, the damage extended far beyond what is visible here.



Left and far left, **a close-up view of the galley damage.**

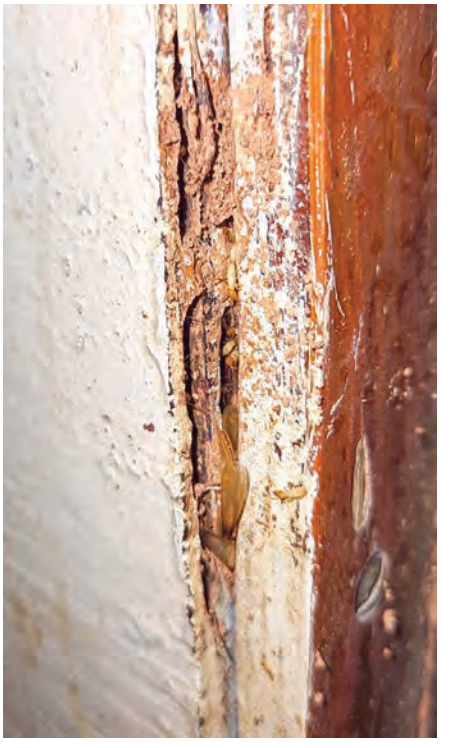
cloud of Formosan termites was once picked up by New Orleans area weather radar. After a brief swarming period, alates shed their wings and search for a mate. If one is located, a nest is established, eggs are laid, and a new colony begins. Because the termites are airborne during this time, they can easily travel over water and inevitably wind up aboard boats. Their ideal nesting location is damp, sheltered wood with easy access to water — sound familiar? Old boats are often one of the most attractive spots for these invaders to call home, and they can cause catastrophic damage in short order as they expand their colony.

In all fairness, I had been warned. *Brigadoon's* less-than-ideal condition was the only reason that I, a humble college student, could afford her in the first place. After her previous owner became unable to keep up with maintenance, she had been left untouched in the slip for several years. A minor leak in the companionway hatch had allowed the ingress of rainwater, which dripped down into the freezer hold and dampened the surrounding wood. This offered an ideal environment for termites, which moved in and began operating unchecked. The seller had notified me of these unwanted guests, but neither he nor I could see the full scope of the damage they had caused.

Until I began my restoration efforts in earnest, I was blissfully unaware of the destructive potential of Formosan termite infestations. These insects are a major pest responsible for billions of dollars in damage every year, and they pose a serious threat to any vessel within their range that has wood on board. Fortunately, they are not invincible. Boat owners can eradicate an ongoing infestation and prevent new ones from taking hold if they are armed with the right tools and knowledge.

The first step is knowing how to identify these pests. Formosan termites are small, white insects about the size of ants, but spotting them directly is a rare occurrence since they tend to avoid exposure. After swarming for a short time, airborne reproductive termites lose their wings and attempt to found a colony, so discarded wings inside your boat are often the earliest sign of their presence. If a colony is established, the next warning sign is frass, a waste product expelled by termites as they bore through wood. It resembles sawdust and can often be found near tunnel openings, but could be anywhere aboard.

Be sure to routinely search the dark, damp, and otherwise untouched corners of your boat when checking for signs of infestation. More advanced termite presence is indicated by mud tubes. These are pathways composed of frass and other waste and are similar in appearance to dirt. Formosan termites use these tubes to safely transit exposed regions when foraging. They often appear on vertical surfaces that receive a moderate amount of light and connect two unexposed regions. Spotting mud tubes on your boat is a serious warning that an established termite colony is thriving, expanding, and searching for more food — action should be taken immediately. It is also important to note that termites require a water source to thrive, so keeping the boat as dry as possible is an easy way to hinder potential infestations.



Plywood is a favorite food source aboard, especially if it's damp. Formosan termites will consume the interior of a plywood panel while leaving a paper-thin veneer on the outside, giving the wood a wavy appearance and hollow sound.

Identifying and eliminating a termite colony before it becomes established is by far the best way to ensure your boat's safety. Constant vigilance is key for southern boaters, especially during swarming season. Cruisers hailing from northern ports should consider whether they have spent significant time in a region affected by Formosan termites and conduct inspections accordingly.

> The plywood had the strength and consistency of damp cardboard.

Professional Fumigation

If your boat has been infested by termites, there are several paths forward. The first and most obvious option for many is to hire a pest control company to fog the boat with poison gas. Having a boat treated by a pest control company is one of the most effective methods for removing termites quickly. These companies have access to pesticidal fumigants that are unavailable to the general public and kill termites on contact. The boat is sealed off and flooded with gas for one to two days, during which it seeps into every crevice and tunnel to eradicate the colony. There is an important caveat, though — the gas leaves no residue and therefore does not prevent future infestations, so additional measures must be taken. This method of extermination is also typically costly, and pest control companies are often unwilling or unable to take on a boat.

Chemical Treatment

The expense, difficulty, and impermanence of fumigation treatments drive many boat owners to seek out DIY-friendly alternatives for termite eradication. Foremost among these are the chemicals fipronil and imidacloprid — two undetectable, slow-acting contact termiticides capable of eliminating an entire colony over a few months. These chemicals are the active ingredients in a variety of popular termiticide concentrate products including Termidor SC, Dominion 2L, and others. They are typically sold as concentrates that are diluted and sprayed onto areas where termites are active. Because the chemical residue left behind is undetectable by termites, they carry on their foraging activities and unknowingly pick up traces of the poison by contact or consumption of treated wood, then carry the chemical back to their nest and spread it amongst the colony.

By the time the delayed effects of the poison take hold and begin attacking the termites' nervous systems, the number of affected individuals has increased exponentially and the colony is eliminated within 90 days. These treatments are rated to last from seven to 10 years in unexposed locations, meaning that future colonies will meet a similar end should they come in contact with the toxic residue. The overall result is a highly effective termite extermination treatment that is easy to apply, inexpensive, and provides long-term protection.

Another popular chemical treatment is disodium octaborate, a borate salt that is the active ingredient in brands such as Bora-Care and Tim-bor. Borate salts are usually diluted with water and applied to unfinished wood, where the treatment soaks into the grain and prevents the breakdown of cellulose. As a result, the treated wood cannot be digested by termites or other wood-consuming organisms (including the fungus responsible for decay). However, this method kills termites by ingestion only — they must consume treated wood to be affected, and the chemicals are not transmitted throughout the colony as with fipronil or imidacloprid. Hence, borate products are best used as a protective measure against future infestations or the spread of current ones.

As always, it's important to consider the safety of yourself and the environment when using poisons. While there is no direct evidence of fipronil causing cancer in humans, it is classified by the EPA as a Group C carcinogen (possible human carcinogen). Despite being relatively benign to mammals, fipronil is extremely toxic to aquatic life and other non-harmful insects such as bees. Similarly, imidacloprid is classified as an EPA Group E (unlikely) carcinogen but is very toxic to bees, aquatic life, and

Formosan termite wings are light and papery, and are typically shed near entry points like hatches and windows.

Numerous colonies often swarm on the same night, resulting in an airborne flood of termites.

some birds. Always exercise due caution when using these termiticides and never dump excess overboard. Consult pesticide labels for safety and disposal information specific to the product.

Overall, borates are much less toxic than other termiticides and will rapidly decompose into relatively harmless boron in nature. Disodium octaborate has not been marked as a carcinogen but is classified as a reproductive hazard in the European Union, so exercise due caution. While relatively safe for humans and other mammals, it is mildly toxic to some fish and aquatic invertebrates and should not be allowed to run off into waterways. As with any other chemical, read the safety label and adhere to usage instructions.

Thermal Treatment

While chemical treatments are the most common method for termite removal, there are options for those seeking to avoid pesticides. The simplest non-chemical alternative is a radical temperature change. Formosan termites cannot tolerate extended periods of cold weather, which is why their distribution within the U.S. does not extend north of 35N. Research on termite cold tolerance shows that their eggs cannot hatch below 68 F, while the insects themselves will become immobilized and die at temperatures below 40 F. Overwintering in a frigid harbor is a good way to wipe out a colony with little effort. Though simple, this approach requires a captain and vessel ready to cruise north for an extended period and is not suited to less mobile boaters or project boats that cannot relocate.

For boat owners in hotter climates, extreme heat holds potential. Studies on the heat tolerance of Formosan termites indicate that there are two methods for heat treatment: brief exposure to very high temperatures, or prolonged exposure to moderately high temperatures. Temperatures of 122 F or higher are almost immediately lethal to termites, while temperatures around 110 F can kill the insects within five to seven days. While it may seem easy to build up this kind of heat inside the boat on a summer day, these temperatures must reach the termite nest to be effective. Hence, higher temperatures and longer exposure times are necessary to ensure that the heat soaks into the infested wood and reaches the majority of the termites.

Given that, boat owners have two heat treatment options: reach a peak temperature of around 130 F or higher for 30 to 60 minutes, or maintain a constant temperature of at least 115 F for about seven days. In both cases, a haulout would be necessary to prevent heat loss to the surrounding water. Finally, extreme heat and exposed heating elements could present a fire hazard, in addition to possibly damaging interior finishes and plastic components, so careful consideration, preparation, and monitoring is a must.

Tropical Hardwoods and Marine Plywood

If your boat has suffered from even a minor termite invasion, you'll likely be replacing some woodwork. Using termite-resistant wood for new construction is a great foundation for infestation prevention, and can serve as a final line of defense if all else fails. Despite their voracious appetites, Formosan termites do demonstrate an inclination towards some wood species and an aversion to others. To better understand this behavior,

These tubes are used as highways for the transportation of workers and food across exposed areas.

Formosan termites can build dense, intricate nests even in narrow or confined spaces.

the U.S. Department of Agriculture conducted a study aimed at identifying Formosan termites' feeding preferences among 24 different species of wood. The study found that the most preferred woods by a hefty margin were yellow birch, red gum, Parana pine, sugar maple, and pecan, while only moderate preference was shown for white and red oak, balsa, Alaskan yellow cedar, bald cypress, and ash. The least preferred woods included Indian, Honduran, and Bolivian rosewood, Honduran mahogany, Spanish cedar, eastern and western red cedar, Alaskan yellow cedar, and sinker cypress.

Although not included in the 24 wood species studied by the USDA, the teak that adorns so many good old boats is also known for deterring termites. In a different study, teak blocks were placed in direct contact with active Formosan termite colonies in the wild and left for six weeks under ideal feeding conditions. The results showed no consumption of the teak, indicating that the termites preferred other food sources and will likely avoid the teak on a boat in favor of other woods. Nonetheless, teak is generally considered to be only moderately resistant to termite attack, so it's not safe to assume it will go untouched in an infestation.

But what about plywood? After all, it's one of the most common materials aboard and probably the main food source available to termites. While it's safe to say that lower grades of untreated plywood are easy targets, it is tempting to believe that marine plywood is immune. However, neither okoume nor meranti, the woods commonly used in most marine plywood, are considered termite-resistant. One look at the remnants of *Brigadoon's* countertops convinced me that whatever plywood the builders at Cape Dory used was certainly edible by termites. Unless treated with a termiticide by the mill, any plywood being used in construction should be protected to ensure it does not become a target.

Using wood that is repellent or even toxic to termites is an excellent strategy but probably shouldn't be the only line of defense. The best treatment for lumber and plywood alike is a borate-based termiticide applied after all cuts are made but before any other finishing. These products dry clear, are relatively nontoxic, and offer lifetime protection of unexposed wood.

With all of these treatment options under consideration, I began to develop a strategy for my own infestation aboard *Brigadoon*. Although Formosan termites are common in the New Orleans area, I struggled to find a professional extermination service that would take on a boat. The costs were far beyond my budget and I was discouraged by the fact that this method did not grant any lasting protection. Average daytime highs of 92 F in the summer led me to consider thermal treatment, but I ultimately decided against it. I wasn't prepared to take full advantage of the required haulout and was concerned about damaging the unaffected interior regions with excessive heat.

I eventually settled on fipronil-based Termidor — an affordable solution with lasting protection that became the backbone of *Brigadoon*'s termite treatment. Once the areas with active termites were located, it was a simple matter of mixing and spraying the pesticide into nearby tunnels and the surrounding wood. Termidor concentrate was mixed with tap water at a 0.125% concentration in a common hand-pump sprayer per the manufacturer's instructions. By pressurizing the sprayer and pressing the nozzle right up to tunnel entrances, the termiticide can be injected into the tunnel network. Fipronil works by direct contact and consumption, so applying it to areas with confirmed active termites accelerated distribution to the colony. For good measure, I also applied a liberal dose to untouched areas of the boat as a safeguard against spreading or future infestations.

Much to my satisfaction, I saw no more termites or evidence of their activity within a few months. I had finally managed to halt the invasion aboard *Brigadoon*, but the damage was permanent. Nothing short of total removal and replacement could bring back the galley. Now, with the project in the rebuild phase, the focus has shifted to termite prevention. I am using termite-resistant bald cypress for non-cosmetic framing and supports, and teak for cosmetic and exterior components. All plywood and lumber, regardless of grade or species, is treated with Bora-Care at a 1-1 water/chemical ratio (the strongest recommended concentration) after cutting and sanding. When swarming season approaches, I am applying a fresh layer of Termidor mixed at 0.09% concentration to hatches and potential entry points. Finally, I am conducting frequent checks for signs of new activity, especially when swarming occurs.

Formosan termites are a devastating pest that wreak havoc upon old boats, but they don't have to be a death sentence. As with any other maintenance issue aboard, avoiding disaster is simply a matter of combining knowledge and diligence.

Neil Sand dove into the world of sailing as a graduate student and quickly developed a passion for sailboats. He enjoys applying his mechanical engineering education to the restoration and repair of old boats. He is currently restoring and sailing his Cape Dory 30, Brigadoon*, on Lake Pontchartrain.*

Air Supply

Finding a sensible solution to an alternator's persistent overheating problem

BY BERT VERMEER

Over the years, and with two different small diesels working in the tight quarters of the engine compartment of our 1978 Islander Bahama 30, we have consistently suffered from overheated alternator syndrome. Simply put, not enough airflow over the alternator necessitated ongoing repairs to this vital engine component.

After a few lazy days at anchor, we would start motoring out of the harbor to raise sails or head to our next destination if there was no wind, or simply to charge up the batteries, and the 30-amp generic alternator on the old Volvo MD7A would soon stink up the engine compartment (and main cabin) with a hot metal odor. It was a simple system with no gauges, and one of which I had somewhat limited knowledge. I had the alternator rebuilt every spring as a preventive measure, and the technicians commented on persistent "overheating" damage.

When we put in a new Beta 20 engine, with the optional 70-amp alternator, I installed a Balmar Max Charge MC-614 external smart regulator. Designed to monitor and control battery charging, the Balmar unit includes temperature sensors for the alternator and the battery bank. The 614 is preprogrammed to throttle back alternator amperage when the alternator frame reaches 212 degrees Fahrenheit (100 C). This, I learned from the local technician, is the recommended maximum temperature to keep the alternator in good health, which was helpful to know.

During the first summer with the new engine, I noticed the regulator showing the alternator reaching 212 degrees quite quickly when there was a high demand for amperage from the low batteries. This was typical after a few days at anchor. The regulator would cut back output and the temperature would stabilize, just as it was programmed to do. But as a result, it would take far too long to charge up the batteries. There had to be a way of keeping the alternator cool while keeping the amps coming.

As on many older boats, the Islander's engine compartment is under the cockpit sole, with access behind the companionway stairs and some side panels. When I installed the Beta, I fully refurbished the compartment to try to contain engine noise as much as possible. This included 1-inch-thick sound-dampening panels glued and taped onto all applicable surfaces, as airtight as practical. The compartment had a blower to extract dangerous fumes and an equal size air intake, both connected to vents on the stern. Both openings into the engine compartment were low at the aft end. Turning on the blower moved a large amount of air at the rear of the engine compartment, but air movement at the front was negligible.

As on many sailboats, the Islander Bahama 30's engine is housed under the companionway steps.

The alternator on the Beta is high on the front of the diesel, as far from the cool air intakes of the compartment as it could be. Through experimentation, I learned to take the top step of the companionway stairs off to open airflow through the compartment. This dramatically lowered the indicated alternator temperature, and full charging would resume. That confirmed that the hot air at the front of the compartment was not

Opening the top of the companionway helps keep the alternator cool, but is a poor solution.

circulating. But removing the step defeated the purpose of all that soundproofing, and it was also a bit hazardous when entering or exiting the cabin. There had to be an alternative that would increase airflow around the alternator without compromising the integrity of the compartment.

Then I watched a YouTube video in which a mechanic mentioned the vast volume of air consumed by a running diesel. A lightbulb flashed on! Could the air intake of my Beta be used to circulate cooler air from the rear of the compartment forward to the alternator?

With that in mind, I used some inexpensive bilge hose of the same diameter as the air filter intake to build a snorkel from the air filter to just above the alternator. The volume of air being sucked into that hose was obvious. The overheated air from the top forward end of the engine compartment near the alternator was now being evacuated by the running engine. The cooler outside air entered through the rear vent, then flowed under the engine and past the alternator before being sucked into the snorkel. Under heavy demand, temperatures now reached 140 to 180 degrees on the alternator frame, but did not exceed the 212-degree threshold programmed into the regulator. Maximum alternator output continued for the programmed time without overheating damage.

From my experience with high-performance cars, for which cold intake air is sought for increased horsepower, introducing hot air into an engine intake was against all my instincts. But a typical sailboat diesel, even running at 80% of rated capacity, is well below its highest output. And I'm not trying to get every available bit of horsepower out of a sailboat engine anyway.

With a summer cruise now under the keel, this solution has proven that the alternator temperature issue has been resolved. Although this practical solution may not fit all applications, if space is tight and airflow is an issue, it may be worth considering on your own boat.

See Bert's bio on page 12.

Creating a snorkel of inexpensive bilge hose attached to the air filter intake keeps the alternator cool while putting amps into the batteries.

Winds of Change

Lessons learned from a second cruising sailboat

BY MARK BARRETT

The year was 1998. My divorce was final, and I had given away my first cruising sailboat, a 1972 Hughes 25, because the decks were so saturated nobody would pay me anything for it (see *Good Old Boat* September/October 2023). I figured it was as good a time as any to try living aboard a sailboat, something I had fantasized about since owning the Hughes.

I started looking around for a vessel that had a roomy interior but was still small enough for me to handle by myself. It couldn't be too expensive, either, because I wasn't exactly rolling in dough at that time. As luck would have it, I saw a classified ad in the back pages of a boating magazine for a cruiser that fit the bill. It was a 1977 Morgan Out Island 30, and the asking price of $12,500 fit my budget.

The boat was being stored in a boatyard in Branford, Connecticut, where my friend Danny was living. I called and asked him to go over and have a look at her for me. A few days later, Danny called me back to say, "Well, the boat looks to be in fairly decent condition. But I don't know, Mark, she's, uh, kind of homely. And that hull shape! She has the hydrodynamics of a cork!"

I drove down to Branford from Cape Cod to have a look for myself. With the boat's flush deck, high freeboard, and a long, full keel that drew only 3 feet 4 inches, I could see what Danny was talking about; she was obviously not designed for sailing performance. However, beauty is in the eye of the beholder, and I actually liked the way she looked. Her recessed running lights and the black rubrail wrapped around the bow gave her a cute, smiling face, like a friendly, docile sea mammal.

ILLUSTRATIONS BY TOM PAYNE

The interior was as roomy as you could find on any 30-footer, with ample headroom throughout, a large V-berth, a separate enclosed head, and plenty of storage space. I could easily imagine myself living aboard this boat. A thorough inspection revealed that she was solidly built — and much to my delight, there was no moisture in the decks!

The Morgan had been owned since it was new by a now-elderly man of Scottish descent named Richard, who was no longer physically able to sail her. Her name was *Menwinnion*, which he claimed meant something along the lines of "many winds" in an ancient Scottish dialect. I offered him $10,500 for the boat and we settled right in the middle at $11,500. He promised to commission her and have her launched and waiting in a slip in the marina for me to pick up in a couple weeks.

It was in that slip that *Menwinnion* taught me her very first lesson. I was loading provisions on board and familiarizing myself with the boat in preparation for moving her from Branford to Red Brook Harbor on Cape Cod, where I had a mooring. There was a toggle switch next to the engine panel in the cockpit with no label on it.

"I wonder what this is," I said, and I flipped it on, or off, I wasn't sure which.

Nothing happened. "Hmmm," I said.

I left the switch in that position and went down below to stow stuff away, while Danny, who was making the trip with me, remained in the cockpit. A few minutes later I heard him yell.

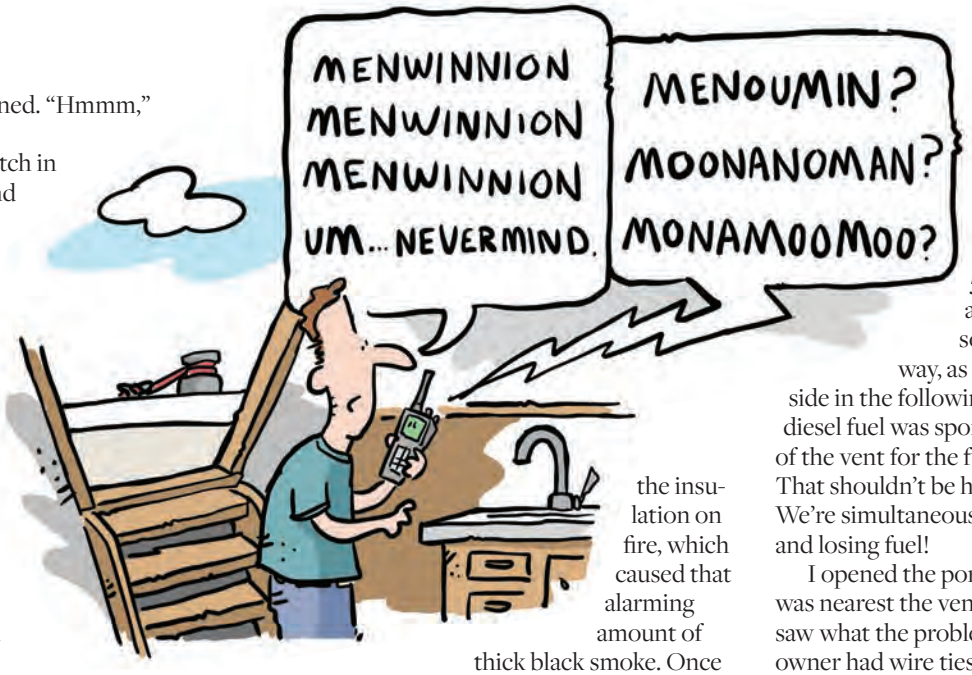
"Hey! Something's on fire up here!"

I poked my head out of the companionway like a frightened rabbit and saw that Danny had the hatch open to the starboard cockpit locker and black smoke — a lot of smoke — was billowing out. This was scary for a couple of reasons, one being that I had only been on board my new boat for about 15 minutes and it was already on fire, and the second was that we were in a slip with beautiful and much more expensive yachts than *Menwinnion* close by on either side. I'd heard about fires in marinas where one boat after the other catches on fire until the whole place goes up in a giant conflagration.

"Holy crap!" I yelled.

Danny and I both had the same thought. He unplugged the shorepower cord while I dove down below and turned off the battery switch. The smoke decreased and finally stopped. It turned out that the toggle switch was for an in-line bilge blower whose electric motor was corroded and seized up. When power was put to it, the fan couldn't turn, so the wires heated up and caught the insulation on fire, which caused that alarming amount of thick black smoke. Once we cut the power to it, it stopped burning.

The damage was minimal, but I still learned something: Don't turn switches on and leave them on if you don't know what they are for. And make sure all switches are labeled.



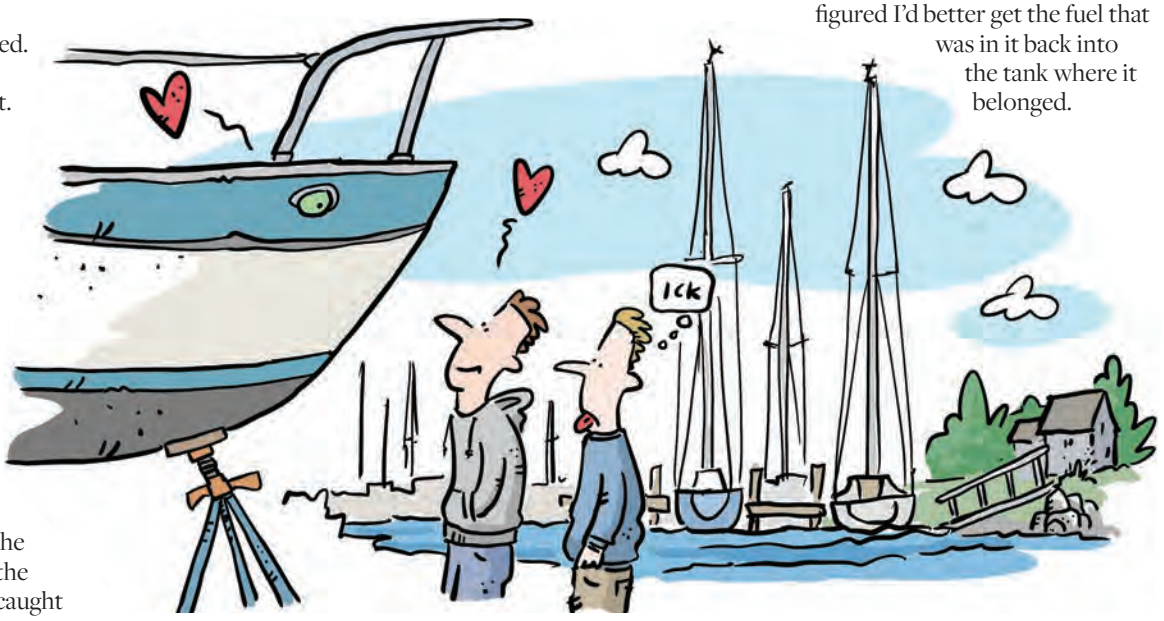
"Something's on fire up here!"

The next lesson *Menwinnion* taught me occurred on the delivery from Branford to Cape Cod. There was no wind on the day we left, so we motored all the way from Branford to the halfway point of Block Island, a distance of about 57 miles, which took around 11 hours. At some point along the way, as we rolled gently side to side in the following swells, I noticed that diesel fuel was sporadically spurting out of the vent for the fuel tank on the stern. That shouldn't be happening, I thought. We're simultaneously polluting the ocean and losing fuel!

I opened the port lazarette, which was nearest the vent, and immediately saw what the problem was. The previous owner had wire ties holding up the vent line for the fuel tank and they had broken, probably due to age; the hose was drooping way down and must have had fuel in it. That would explain why we had such a hard time fueling up before we left and had to trickle the fuel into the tank. The fuel kept rising up in the fill hose because the vent was blocked.

"Hey, we have some wire ties with us," I said. "I'll fix that right now!"

While we were underway, rolling gently as we motored east in Rhode Island Sound, I wedged myself down into the lazarette, which was a very tight space. Before I reattached the vent hose back up at the correct level with new wire ties, I figured I'd better get the fuel that was in it back into the tank where it belonged.



I disconnected the vent hose from the fitting on the stern, which was easy to do because it was held on the barb by just one small hose clamp.

Next, I took a really, really deep breath, placed my lips on the end of the hose (I know, I know) and blew as hard and long as I could. Luckily, I took the hose out of my mouth right after that. There was a one- or two-second pause, and then about a pint of diesel fuel shot back out of the hose and hit me right in the chest.

This was an easy lesson to learn: Never, under any circumstances, put your lips on or blow into any hose attached to a diesel fuel tank.

When I got the boat back to Cape Cod, I decided to have it hauled out for a few days so I could do some work on her, including replacing a couple of frozen seacocks and buffing and waxing the topsides. A friend of mine named Peter Pepi, known to everybody as just Pepi, stopped by to see my new vessel.

"You know what you should do?" Pepi said, which is how he always started his advice-giving sessions. "You should strip the bottom and put on a barrier coat."

He was right. The bottom had about 20 years' worth of bottom paint on it and looked like the surface of the moon.

"You know what you should do? Get a hook scraper and get all that loose stuff off first."

So that's what I did. After work each day, and on the weekends, I went to the boat, donned my Tyvek suit, put on my mask and goggles, kneeled down in the dirt (*Menwinnion* sat very low because she only drew 3 feet 4 inches), and started scraping. Aside from the horrible screeching noise the scraping made — think fingernails on a blackboard times 10 — it was extremely tiring and hard on my arms and shoulders. There was *a lot* of bottom paint on there! I could only scrape in five-minute intervals and considered it a good session if I got most of the paint off a 2-foot-square section on the bottom, which now seemed as big as the bottom of a battleship.

"You know what you should do?" Pepi said, when I was complaining about it one evening at the bar. "You should get this special paper they make that you stick on there, and you let it sit for a while and then you just peel it off and all the paint comes with it."

Well, that stuff was expensive and barely worked at all, and the chemical paint remover I tried after that was extremely toxic, made an incredible gooey mess, and did take off some paint, but nowhere near all of it, either.

"You know what you should do?" Pepi said. "You should rent one of those big grinders and put some 80-grit sandpaper on it and that will take it off like nothing."

That process required running a series of extension cords about a quarter-mile to the boat, suiting up again like I was going to the moon, and then squatting down or sitting in awkward positions and pressing that heavy machine up over my head against the hull for short intervals until I was soaked in sweat and my arms turned to rubber. My goggles fogged up in minutes and I couldn't see what I was doing. No matter how well I tried to protect myself, I ended up with black bottom paint dust in my eyes, ears, and mouth.

After the grinder, it was an orbital sander with higher grit until I finally got the entire bottom down to bare gelcoat. Applying the two-part barrier coat and a couple of coats of bottom paint after that was relatively easy, and sort of enjoyable, because at least there was a smooth, good-looking final product to admire.

But I had learned another very important lesson about boats: Never, ever, strip the bottom of your own boat. Pay somebody else to do it — it's worth every single cent.

Menwinnion wasn't done teaching me yet, and this time it had to do with her name. I hadn't changed the name because somebody, probably Pepi, told me it was bad luck to do that unless I went through an elaborate renaming ceremony in which you remove all signs of the old name and then pay homage to King Neptune and so forth. I was too lazy to do that, so I left the name on the boat the way it was — in simple block letters. Every time I had to say the name at a marina office or over the VHF radio, for instance, I always had to repeat it several times and spell it out. "What's that mean, anyway?" almost everybody who heard or saw the name would ask.

"It means 'many winds' in an ancient Scottish dialect," I would say, although I was never able to verify if that was true or not. Finally, I peeled off the lettering and replaced it with *Many Winds*, hoping that was a loophole in the bad luck superstition, since it was the English translation — supposedly, anyway. Nobody asked me to repeat the name over the VHF after that, or to spell it, or what it meant.

This lesson was simple: Resist the urge to name your boat something weird that's hard to spell or pronounce, and is something that nobody knows the meaning of. You'll get tired of spelling it out and explaining what it means over and over.

As soon as I started sailing and cruising on *Many Winds*, she taught me another lesson, and it was the most important lesson of all. I mentioned earlier that she had a long, full keel with a shallow draft and "the hydrodynamics of a cork," according to my engineer friend Danny. The first time I sailed her, I turned the wheel hard over to tack, and a strange thing happened. She turned up into the wind, the sails luffed, and she stayed right there for a few seconds, like a shy dog peeking around a corner. Then slowly, she fell back off, the sails filled, and she sailed away again — but on the same tack we were on before!

"What the hell!" I said. I thought something was wrong with the steering. Maybe a cable had fallen off of the steering quadrant.

I built up momentum again, yelled, "Ready about!" even though I was alone on the boat, and turned the wheel over hard.

Same thing.

She came up into the wind and stopped right there, sails flapping listlessly, unable to get her bow through the eye of the wind. Nothing was wrong with the steering, *Many Winds* just couldn't tack!

After a while, I learned that the only way to get her onto the other tack was to backwind the jib and let that push the bow over, then don't release the windward sheet until *Many Winds* was well through the eye of the wind. Even that was a ponderous process that happened in slow motion, no matter what the wind conditions. The only other alternative was to start the motor, power through the tack, and then shut it off.

Overall, *Many Winds* did not like to sail upwind. With her high freeboard and long, shallow draft keel, she went sideways as fast as she went forward. On a good day, maybe she could point at 60 degrees to the wind … maybe? The only way to make any real progress to windward was to turn on the engine. Fortunately, she did have a reliable 2-cylinder Yanmar diesel, so that was a plus, and she motored just fine. But I bought a sailboat because I wanted to sail, not listen to that loud diesel all the time.

This leads me to the most important lesson taught to me by *Many Winds*. It's a rule that I have followed scrupulously ever since: Never, ever, own a sailboat that can't sail upwind.

Mark Barrett sails his current and seventh sailboat, a 1988 Freedom 30 named Scout, *out of Red Brook Harbor on Buzzards Bay. He and his first mate, Diana Donahue, spend as much time as possible each summer cruising along the New England coast in search of adventure, or at least the next waterfront eating and drinking establishment.*

Storm Force Keys

Nasty weather provides a curtain call for a memorable cruise.

BY ROBERT VAN PUTTEN

I knew the last storm was coming. I'd been checking the forecast daily on my C. Crane pocket weather radio. My wife, Heidi, and I were in Card Sound in the Florida Keys on our 1978 San Juan 21, *Intrepid*, and I was looking north toward Biscayne Bay. All that open water was really intimidating, and we knew high winds were on the way. Deciding to hightail it back to Blackwater Sound and find cover there seemed like the right move.

The sail down was fun. It began under near-drifting conditions, and we were the only boat sailing. All the other sailboats were motoring along, never leaving the Intracoastal Waterway (ICW), probably on autopilot. Aboard *Intrepid*, we chased the puffs and rippled water down to Little Card Sound and sailed upwind under the bridge into Barnes Sound, out of the ICW channel.

The channel under the bridge is too narrow for tacking and tends to have motorboats blasting through. I took a chance tacking in the shallow water outside the

Previous page, **the distinctive streaks of a building force 7 wind are visible on the water.**

Below right, **Robert gets the inexpensive, seldom used outboard fired up to move anchorages.**

channel — an advantage to having a small boat — and had the boat hook handy to sound with and fend off the concrete bridge pillars if necessary. We made it through with just about four feet from one of the pillars, in light winds. Fine bit of sailing, that.

Barnes Sound had plenty of wind, as it always does. Halfway down the sound, we doused the jib and made much better time under mainsail alone, falling off the wind a bit and making a good 5 knots instead of pinching through the gusts with the jib up. The SJ 21 is a handy little hooker and sails well on all points under mainsail alone. The wind was building as the day progressed and was now blowing about 20 knots. We were taking a little spray over the bow — grand sailing!

We made Thursday Cove and anchored for a late lunch and to await the tide through Jewfish Creek. I thought about staying there, but it's completely open to the north, so I started our rusty $200 Chinese outboard to cruise the mile-long mangrove channel into Blackwater. The motor ran perfectly, and for once we didn't have a 2-knot current against us. This was our best run through any of the ICW channels we'd been in. I kept trying to sail these passages and had never succeeded.

Entering Blackwater, we had a strong headwind from the west and I anticipated it would veer to the north as the front came south. There was too much wind for the full mainsail now, and we needed to either anchor or put in a reef. Since the motor was running so well, I decided to keep motoring and round Snake Point into Saxton Cove. This was our 46th day cruising the Keys (see "Cruising Small and Simple" in the September/October 2023 issue of *Good Old Boat*), and Saxon was one of our most-used anchorages when going ashore for supplies because our car was parked nearby.

By then the wind was a high force 6 with a long fetch, with waves to match and big motorboat wakes from the ICW that didn't help at all. At times we were standing still with the motor wide open, spray flying over the bow, trying to make the point. Foolish of me — I should have sailed! I'd be cutting the chop at an angle as we tacked upwind under complete control, with all the power from the wind that I'd ever need.

See how motors make us terrible sailors?

We finally made it around the point and anchored, but Saxton Cove was full of chop. We were worried about dragging and were off a lee shore. But why hadn't the wind shifted north yet? When it did, we could tie off right to the mangroves — a favorite tactic of mine. But conditions didn't improve, and we were running out of daylight. It was too late to make for Little Blackwater, a favorite bad weather hideout. Heidi suggested Lake Surprise. Of course! We've never spent the night there because of traffic noise from the bridge, but it's a small, sheltered body of water. I refilled the outboard, which had cooled off, and we motored into the lake, which wasn't far. The motor was getting a real workout. In 46 days, we'd burned only 2 gallons of gas, and now we were well into our third.

Once in Lake Surprise, we set two anchors, a 13-pound Delta and a 10-pound Danforth. We keep the anchors on roller platforms at the bow, each with some chain and 100 feet of ½-inch line stored in pouches lashed to the bow rail. Eventually the wind did swing north, and I had to untangle the anchor lines late in the night. At least there were no mosquitoes.

The next day, the National Oceanic and Atmospheric Administration had predicted the winds would blow 30-plus knots. They were, and they had shifted to the east. Worse, the wind was violently shifting. We were bouncing pretty good in a surprising chop for such a small basin. The wind was force 7, and it was interesting to see the characteristic streaks on the water. A fierce squall blew through, hammering *Intrepid* with heavy rain that at least flattened some of the chop.

When the worst of the rain had passed, I saw we were drifting toward the mangroves. The squall had pulled the anchors loose, and we scrambled into our rain suits and out

Intrepid's bucket was full of rainwater after a night of storms and would soon be lost overboard.

on deck. Heidi went forward to haul the anchors while I started the motor. With the fore hatch closed, she kneeled on the tiny tip of the foredeck and leaned over to handle the anchors, with no mechanical advantage. She couldn't do this six weeks ago and now she could. She'd become an excellent deckhand.

We were just 4 feet from the tangled mass of mangroves, keel stuck in the mud and bouncing up and down in the chop. Every bounce drove us farther in. Any second, the rudder would hit bottom and be knocked off its pintles. The motor started and Heidi, still hauling in the anchors, must have helped pull us off because we were able to claw free.

Heidi scrambled aft over the cabin top to pull in the canoe we tow and tried to keep it from swamping as I angled the boat for the passage out into Saxon Cove. The boat was broadside to wind and waves, and was heeled over a good 25 degrees by wind pressure on the bare mast and Heidi's weight on the lee rail, where she struggled to keep the already half-full canoe afloat.

I found myself wondering if we could be knocked down under a bare mast.

I had to turn dead downwind to go through the mangrove channel and out of the lake. With the outboard idling, I let the wind push us along, but naturally, the canoe immediately swamped and tried to roll. Heidi hauled the bow of the canoe up, and as I goosed the throttle for more speed, dumped some water out.

We made Saxon Cove, dropped anchor, and set the second anchor from the canoe. In strong winds, I do this by sitting forward of center so the bow rides low and the stern up, where it catches the wind and keeps the canoe dead into the wind. It helps that I have decades of canoeing under my belt. Heidi passed me the anchor from the bow roller, fed the rode out, and guided me to where it needed to be set.

After lowering the anchor (it never sets right if I throw it), I held onto the rode and let it slide through my hand as the canoe glided downwind back to the boat. Then Heidi hauled tight on the rode to set the anchor. Simple. Try to fight these high winds in a canoe and you'll be swimming in a second. You have to trick them into working for you. I'm not sure I could have set that second anchor in a rowboat; I certainly couldn't in an inflatable boat.

We collected our wits for a few moments, but before long saw that we were dragging into a line of lobster buoys and shallow water. The holding ground there just isn't very good, and I couldn't tie off to the mangroves due to the violent wind shifts.

At that point, there was nothing left to do but to start the motor yet again and go back around Snake Point. The wind was mostly easterly and there would be some cover on the other side. Despite the higher winds, it was much easier rounding the point this time because we were off a weather shore. We anchored on the other side near a row of permanently moored boats that I liked to call "Margaritaville."

As we came in, a big sailboat motored down the ICW from Barnes Sound, eventually rounded upwind across the channel from us, and dropped anchor. All of this was done from inside a tightly zipped-up cockpit — the captain of that boat didn't get hit by a single drop of rain! Press a button and the anchor drops, reverse the diesel, back down, and set it. Then he went below into a cabin with full standing headroom and probably drank beer and watched TV. That's cruising for many people, but somehow it seems wrong to me. Maybe I'm just jealous because I could never afford it.

The author takes a nap during the storm, before the boat's V-berth was soaked with encroaching rainwater.

Our anchors held wonderfully, despite fierce wind shifts that yanked the boat side to side all day and all night long. The rain hammered down in the worst deluge I've ever seen. The forward starboard port leaked behind the insulation and cedar lining of the cabin wall. We didn't notice it until the V-berth mattress was soaked and water spilled onto the cabin floor.

The hatches and deck fittings forward of the mast held because I'd reset or replaced them all before the trip, but everything aft dripped water. It hardly mattered anymore. We spread our rain suits out on the soggy mattress, put a blanket over them, and slept.

I was shaken awake at first light by the boat hammering up and down, as in the wake from a large motorboat. No worries; back to sleep. Only the hammering didn't stop. Huh? Wakes don't last that long. I groggily wiped condensation from a window and peered out in the dim light. The wind seemed to have shifted dead north and the stern was not far from a lee shore! I scrambled for my rain suit; I had to get out, haul the anchors, and start the motor. Then thunder boomed. I realized a violent thunderstorm, the first we'd been hit with, was passing over us. The winds and boat were swinging all the way around the compass. The waters of the sound were a mass of chop, seemingly tossing in all directions at once. There was nothing for it but to hold on until it passed.

The rain and chop soon lessened and I went out into the cockpit. The canoe was barely afloat behind us, almost completely full of water with maybe four inches of freeboard left. Why hadn't it rolled? I wondered if the weight of the flooded canoe on its painter behind us had helped hold us up into the wind. In the cockpit was our bucket, and it was brim full and overflowing with fresh rainwater. It had been empty when we went to bed. It couldn't possibly have rained 12 inches that night, could it?

I needed to bail that canoe immediately and grabbed the bucket to dump it. Unfortunately, its unexpected weight caused it to slip from my hands, and it disappeared into the murky chop of the sound. I stared dumbfounded as our bucket, which we used for so many things, sank into oblivion. After a few moments, I shook myself, dug the bailing scoop out of the lazarette, hauled the canoe alongside, and bailed it out. This got easier as the chop subsided.

By that time, we'd gradually swung around and the bow was facing the shore again. The anchor lines, which must certainly have tangled as we swung right around the compass, had somehow sorted themselves out. They still held. The wind dropped to almost nothing. The rain stopped completely and the sun came out. Dolphins splashed happily nearby, gobbling up fish still dazed by the storm. The morning sun flashed from their fins and bodies as they jumped.

We stood on the cabin top and stared, numb.

That was the day we put *Intrepid* back on her trailer and headed home to Washington. We'd had enough, and the cabin was soaked. We threw the V-berth mattress away; it was badly mildewed anyway. Besides, we'd lost our bucket, and it was time to go.

Robert Van Putten grew up on Long Island Sound, where he and a buddy sailed a Super Snark to destruction. Eventually he moved to the Pacific Northwest, where he canoed happily for decades. One day on Ross Lake in Washington state, he and his wife were hammering the water as if killing snakes, trying to round a point in a canoe in high wind and waves, when it occurred to him that it might be nice to once again have a boat that could harness the wind.

Hurrying to avoid the dark clouds just beyond Jewfish Creek Bridge.

Browbeaten

Rebedding a cabin top eyebrow to solve a pesky leak

BY ANN HOFFNER

Winter covers come off boats late up here in Maine, leaving a short, often cold window to get ready for launch. Last year, before embarking on the usual list of spring chores for *Ora Kali*, we needed to rebed her starboard eyebrow. After two seasons of sailing, we finally tracked down a pesky cabin leak to this narrow strip of teak along the side of the coach roof. Over our Sabre 30's 40 years of life, it had loosened and lost all of the bedding compound under the wood and in the screw holes.

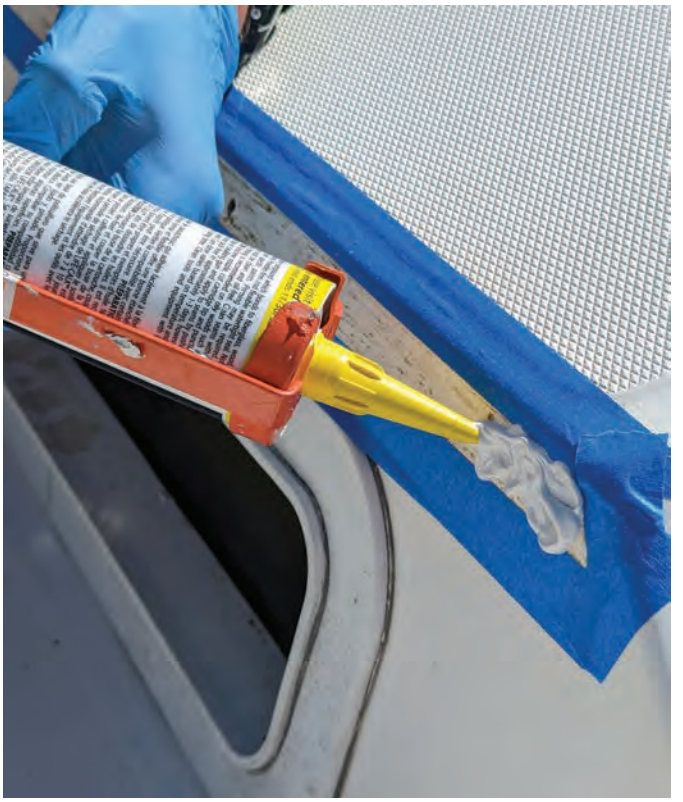
When we bought *Ora Kali* in New Jersey, the owner implied she had leaks, but there were no obvious signs for the first half of our trip delivering her up the coast to Maine. We were distracted by the fact that soot spilled out of *Ora Kali's* engine anytime we ran it at high revs. With the insides of lockers getting black, and me obsessed with cleaning off soot from various surfaces in the galley, an occasional leak would have seemed like peanuts.

It wasn't until a month into the trip, with the engine finally awaiting repair in Rhode Island amid days of rain, that the leaks took center stage. *Ora Kali* has a fiberglass headliner in the cabin that comes down the sides of the coach roof and extends out under the side decks, ending in a molded chase to run wires fore and aft. A row of holes cut in the liner provides access to nuts on the bolts that hold inner genoa tracks to the side-decks. After rain, the water would leak — sometimes pour — out of a couple of holes, sometimes out of the wire chasing, sometimes over the galley, often in a side locker or over a settee cushion.

But the presence of the liner made tracking down the leak's source difficult. I tried covering various points where the rain might be making its way in. I reset chainplate covers. I resealed around the portlights on that side; it made no difference. Finally, in Maine, we pulled up and discarded the inner genoa tracks. Nothing worked entirely.

Then in the fall, after the boat had been hauled out, I happened to wiggle the starboard eyebrow piece and noticed it was a bit loose on the coach roof, and I could widen the gap by pulling on it. I got

***Ora Kali* in her winter quarters, showing the eyebrow on her coach roof.**



Top left, **old plugs in the eyebrow are drilled out to access screws.**

Above, **after taping around the outline of the old eyebrow, Tom applies Life-Calk.**

a hose, strategically poured water along the eyebrow, and was able to recreate the leak.

Sabre owners have a lively online presence, and while waiting for spring, we found information there from others who went through the rebedding process. One of the first things mentioned was the difficulty of removing the eyebrow without breaking it, as the thin strip of teak is very difficult to replace. We chose a week with a dry weather forecast, untied and removed *Ora Kali's* big tarp, and got to work, prepared to treat the eyebrow gingerly. But *Ora Kali's* wood is in remarkable shape, and with nothing left of the original sealant, once the plugs were drilled out and the screws removed, it fell away easily, and we carried it over to our basement rather than let it lay out to get stepped on.

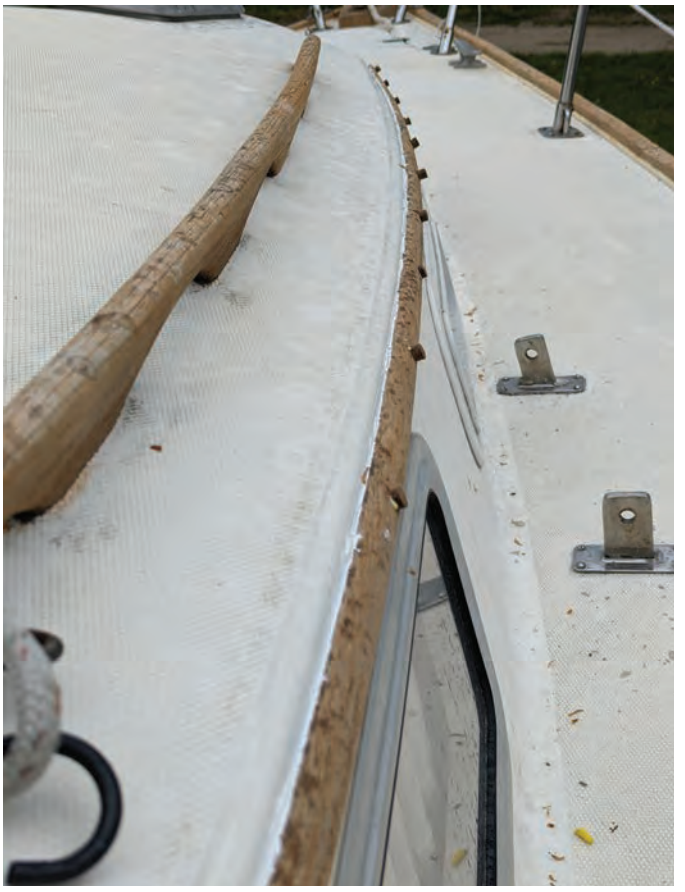
From there, it was a process of cleaning the fiberglass where layers of grime and varnish had seeped under the wood and been caked on. I was able to remove most of it with a wet terry cloth rag, but getting a good surface for the sealant to adhere to meant gentle scraping with a wood scraper.

Other than a couple of spots where someone had tried to inject silicone into a hole without removing the wood, all trace of the original sealant was gone.

Sabre employed butyl tape to seal deck fittings, and I had followed this tradition when rebedding chainplate covers, but butyl wouldn't do for wood. When restoring our Peterson 44, *Oddly Enough*, Tom and I got to like Life-Calk. This is a polysulfide product, so it doesn't hold up in sunlight, but otherwise it stays flexible, doesn't deform, and is easier to remove than products made with marine silicone.

After carefully taping the fiberglass around the space where the eyebrow sits, Tom applied the Life-Calk with a caulking gun. We had saved the screws and started them in their holes in the wood to help reset the awkwardly long piece of teak, managing to do this without smearing the sealant and with a minimum of fussing at each other.

Once it had cured but was still soft, a day or two later, we removed the tape and I cut away the excess sealant. This is a vulnerable joint because the eyebrow is meant to divert water draining off the coach roof away from the ports



underneath, which means it needs to provide a watertight channel. To make sure it was secure, Tom retaped and applied a thin bead to the upper seam, then smoothed it before removing the tape.

Tom used a plug cutter to make new plugs, and glued them in with indoor/outdoor wood glue. With the eyebrow rebedded, my final task was to brush on the season's coat of Semco Teak Sealer when I resealed the rest of the wood.

Ann Hoffner has been a sailor since she was 9 years old. For the last 20 years, she's written about her adventures for a variety of sailing magazines. Along with her husband, Tom Bailey, a photographer, she downsized from their offshore passagemaking P-44, Oddly Enough, *to* Ora Kali, *a nimble, shoal-draft Sabre 30 that is teaching them the joys of Maine coastal cruising.*

Top left, **Tom and Ann saved the old screws, but it was a fussy, two-person job to get them lined up with the holes in the fiberglass without smearing sealant all over.**

Top right, **the new plugs are ready to be cut down and sanded.**

At right, **tidying up the sealant in the final joint before sealing the wood with Semco Teak Sealer.**

Nurdle's New Stern Tube

A satisfying solution to a difficult problem

BY JOHN CHURCHILL

Haulouts are always a somewhat anxious time. Sailors develop a plan and a list of tasks we want to accomplish to maintain or improve our boats, but there is always a bit of worry that some unknown problem might become apparent once the vessel is out of the water.

I had one of those "Oh boy!" moments recently when *Nurdle*, my 1979 Bristol 35.5 centerboarder, was put on the hard. I had replaced the cutlass bearing some years ago, and at the last haulout, it seemed fine. I noticed a tiny bit of play, but it snugged up when the setscrews were tightened. When diving to clean the propeller, I hadn't noticed anything wrong with the cutlass bearing, although I hadn't paid it any specific attention — after all, nothing was amiss the last time I checked.

Imagine my surprise at haulout when I saw that the cutlass bearing was now stuck to the shaft and turning freely in the stern tube. Worse yet, the tube had been worn away and there was almost an ⅛-inch of play around the bearing.

Nurdle has a common and simple arrangement. The stern tube is the housing for the propeller shaft to pass through the hull. The tube is made of fiberglass and is manufactured separately from the hull, allowing precise control of both the inner and outer dimensions. The tube is then incorporated into the hull during construction. The prop shaft is supported at the inner end by the engine coupling and passes through a waterproof shaft seal. The shaft is supported at the outer end of the tube by the cutlass bearing (also known as a cutless bearing, a genericized brand name), a ribbed rubber bushing held in a metal or polymer sleeve. The groove and rib arrangement allows water entry for lubrication and cooling. The bearing has a snug fit within the tube and is secured with small setscrews.

The cutlass bearing is seized to the prop shaft. The setscrews have cut the bearing shell, forming a separate ring.

Breaking down the issue into individual problems, I had a bearing stuck to the shaft and a worn stern tube that no longer properly fit the bearing. Pulling the prop and shaft and then removing the old bearing from it was straightforward. I am fortunate that Ted Hood and Bristol Yachts built the boat to allow shaft removal with the rudder in place. I removed the dripless shaft seal bellows as well. My first thought was to just epoxy a new bearing in place. That would be a quick and easy fix, but what about when the time comes to replace it? And how would I be sure it was properly aligned?

Surprisingly for a do-it-yourself boatyard, a van showed up from Norm's Propeller Removal service that advertised specialty work on props, shafts, and bearings, so I solicited some expert advice.

Norm suggested getting a custom-made bearing and gave me the name of a shop in Michigan that fabricated them. I had some concerns about that idea, since it seemed like it would be difficult to accurately measure the diameter of the worn tube, especially at the deepest part. Besides the anticipated high cost of a custom solution, the issue of future bearing replacement remained.

I called the Michigan shop and the owner suggested I speak to his father, the founder of the company. He suggested sleeving the stern tube as an effective solution, and we discussed how that

The damaged stern tube, after the author sanded the surrounding area and picked away the old filler. Prior setscrew holes are visible and the stern tube seems to be worn somewhat eccentrically, based on the remaining tube thickness.

The new sleeve is installed over the shaft, with the cutlass bearing in place. The wet epoxy squeezed out, and the author was careful not to get it on the bearing.

might be done. This approach seemed to resolve my concerns about future replacement with a standard bearing. The upper end could be centered by drilling, and using the shaft through the new cutlass mounted in the tube would permit accurate alignment of the sleeve in the worn portion of the stern tube.

I then discovered San Diego-based Rock West Composites, which carries a wide variety of tubes in fiberglass, Kevlar, and carbon fiber in an enormous range of sizes. The company sells direct to consumers, with no minimum order, and its prices are listed. I found a tube with a 1.375-inch inner diameter, the same inner diameter as the original, and an outer diameter of 1.481 inches, at $37 for a 12-inch long section. The very slightly undersized outer diameter would allow me to drill out the existing tube with a standard 1 ½-inch bit and leave a little room for it to slide in.

Drilling out the stern tube was easier than I imagined. I had envisioned using a hole saw but could not find a long extension that would work. Instead, I located a 1 ½-inch spade bit that mounted on a matched shaft extension. Drilling went smoothly. I lined up the drill by using a reference point on the rudder for the centerline of the tube and stopped frequently to cool the drill bit in a pail of water. I drilled a little past the 12-inch mark. I also sanded the entire area outside the stern tube, removing bottom paint and a bit of gelcoat, and picked away decaying bits of ancient filler and cracked fiberglass. I vacuumed all the dust out of the tube, then swabbed the bore with an alcohol-soaked rag on a stick to remove any dust and contaminants.

I dry-fitted the tube and it slid in fairly easily, with the last 2 inches sticking out. I didn't force it as I had no easy way of extracting it, but it went in easily enough that I was confident it would slide the rest of the way. The tube was rigid and looked well centered in the stern tube opening. I then pulled the tube back out and installed the shaft into the engine coupling while temporarily supporting the outboard end with some rags in the tube entrance. The bearing was a snug fit in the new sleeve.

I sanded the exterior of the bearing down very slightly and popped it in the freezer to shrink with the cold. I was able to press it into the sleeve without difficulty and left the bearing about 1/16-inch proud at the end. I set the sleeve and bearing assembly in the sun to warm up and dry any condensation. Then I made a wood block with a 1-inch hole for the shaft and a 1 3/8-inch recess for the bearing so I could tap directly on the sleeve itself.

Before I glued the sleeve in place, I thought through each step of the process several times, knowing I would only get one chance. Once I felt completely prepared, I mixed some epoxy. I had marked the outer portion of the tube where there was some play, and on the deepest section beyond this, I applied unthickened epoxy to the sleeve. I had thought of trying to put epoxy on the inner surface of the stern tube, but having the shaft in the way made that idea impractical.

For the remaining portion of the sleeve, I thickened the epoxy with wood flour and colloidal silica. I slid the tube in gradually, ensuring an adequate amount of epoxy was applied. The prop shaft worked great to keep it centered in the stern tube bore. I tapped the tube in the last couple of inches, which was a snug

The epoxy is smoothed out and hardened, with the shaft removed.

fit, taking great care to keep the epoxy off the cutlass bearing. I used the thickened epoxy to build up and fair out the damaged area around the opening.

After letting the epoxy set overnight, I removed the shaft and filed and sanded the surrounding area smooth. After giving it a week to fully harden, I drilled and tapped new holes for the ¼-inch-20 setscrews. I drilled a small pilot hole first, then overdrilled that with a 3/16-inch bit down into the brass bearing shell to create a small dimple for the setscrew. I had made sure the bearing went in with a pair of horizontal recesses so any breakthrough would be in the grooves rather than the ribs, where the shaft rides.

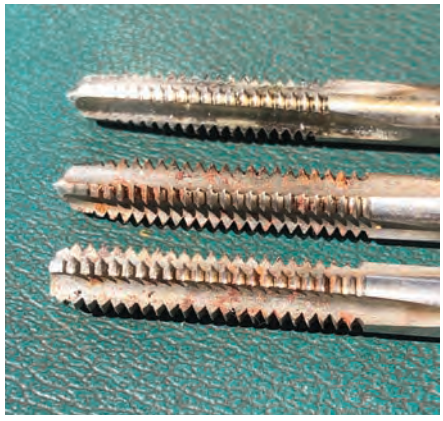
Finally, I overdrilled with a 13/64-inch bit for the ¼-inch-20 tap. Tapping the hole was a little tricky, since it is a blind hole and needed to be threaded to the very bottom. There are three main types of taps; the common standard, or plug tap, cuts the threads gradually over the first several turns. There is also a taper tap that cuts the threads more gradually and is typically used on very hard metals. I used the third type, a bottoming tap that cuts threads nearly to the bottom. This allows the setscrew to go all the way down into the blind hole and engage the bearing. After installing the setscrews, I was ready to put the shaft back in and install the prop.

The big question: Why did this happen in the first place? As with most problems on aging boats, I suspect a number of factors. When I got *Nurdle* a dozen years ago, her prop shaft was slightly bent and she was fitted with a Luke feathering prop that was quite worn and loose, which created vibration. I replaced both. I suspect that the bad prop and bent shaft might have started the wear of the stern tube, which I had not recognized as significant when I replaced the bearing previously.

Additionally, at one point, I had accidentally wrapped an abandoned ski towrope around the prop and think that might have caused some damage. Upon removing the bottom paint from around the opening, I discovered a number of previously filled old setscrew holes that suggested prior problems. One of the holes I had been using was in an area of filler that may not have been ideal. I am hopeful that the newly sleeved stern tube will alleviate problems in this area for the foreseeable future.

Below, **the new setscrew hole is drilled and tapped.**

Bottom right, **the taps used for the taper, plug, and bottoming tap.**



John Churchill grew up a boat-crazy kid in Indiana. He built a raft at age 6, sailed Snipes as a teenager, and worked his way toward saltwater and bigger boats. He has sailed a Cape Dory 26 singlehanded to Bermuda and back, and a Bristol Channel Cutter transatlantic with his father. Now in Florida, John sails Nurdle, *a Bristol 35.5 (and former repo) that he's rehabbing for extended post-retirement cruising.*

Suck It Up

A simple DIY pump system can keep your bilge dry.

BY STEVE BUFE

"Ask me about my E.L.D.," my friend says.

What, you are probably wondering, is an E.L.D.? Admittedly, it's just an acronym I came up with to extoll the performance of my additional bilge pump. While Every Last Drop might be a stretch, it is, in practice, pretty close to the truth.

At issue is my long-standing desire, like most boat owners, to have a dry bilge. Bilge pumps do a great job of pumping water from the inside of the boat to the outside, where it belongs. However, even the best bilge pumps don't quite get it all. In the boats I've owned, there are almost always several inches or so of water left that the bilge pump can't access due to its design. That's where the E.L.D. comes in.

Ideally, the system should be self-priming, able to run dry for extended periods of time, be completely automatic, have minimal battery draw, and be flexible enough to cope with differing amounts of water. Luckily, my E.L.D. does all these things quite well.

The benefits are more than just the peace of mind in knowing that you don't have water in your boat. The E.L.D. also means less humidity, fewer odors generated by stagnant bilge water, and an improved ability to discover any potential leaks.

The E.L.D. is made up of three main components — the pump itself, the timer, and the pickup sponge, of which the latter is arguably the most critical to proper function. Additionally, you need some length of the proper diameter hose to connect the pickup sponge to the pump and the pump to overboard connections. Beyond that, you only need some fairly common wiring to connect the timer to the pump and the 12-volt battery source.

The operation is quite straightforward. The sponge is designed to attract and suck up every last drop of liquid from the bilge. The pump, which can run dry if no water is present, pumps the water from the sponge overboard. The timer controls when and for how long the pump runs. Simple.

You can program the pump to run for a minute once a week, every day all day, or anything in between. I have mine set to run three times daily — one minute each at 7 a.m., 1 p.m., and 7 p.m. There are three modes on the timer: on, auto, and off. It is easy to

Below left, **the E.L.D. pump and timer are mounted to a piece of StarBoard.**

Below, **the sponge pickup is the heart of the system.**

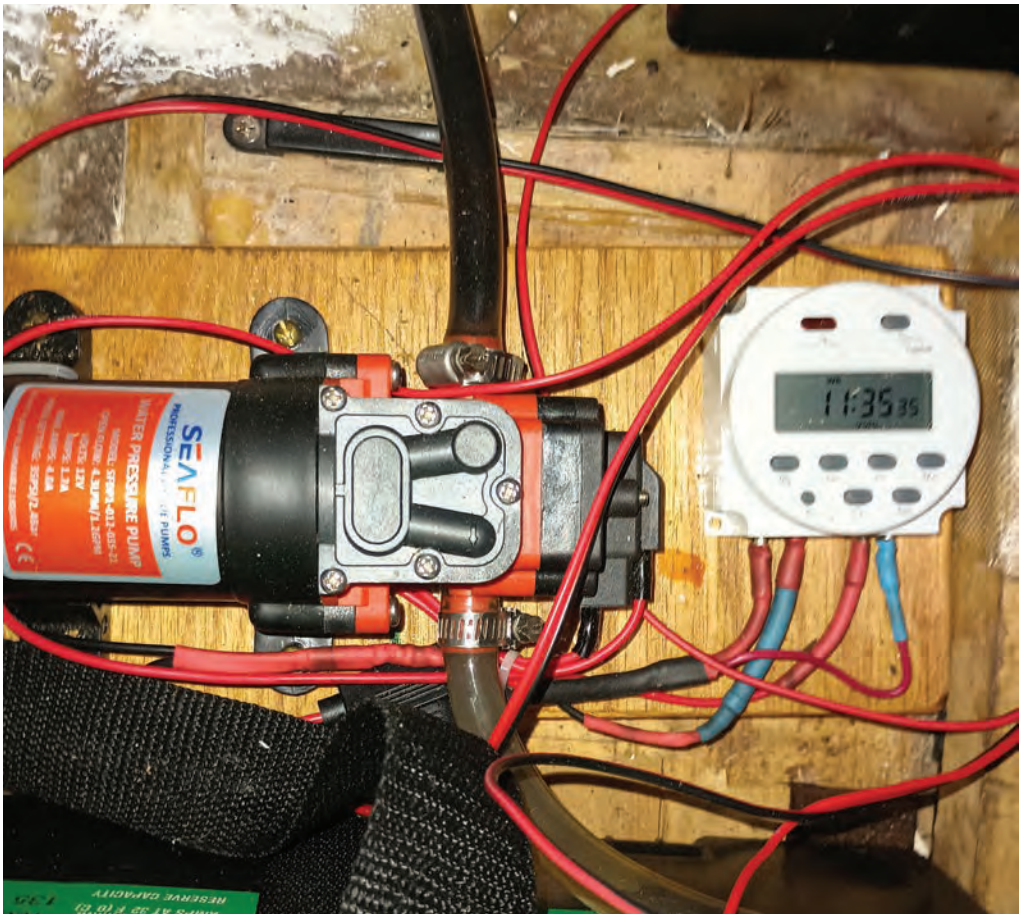
Right, **the system's components are inexpensive and readily available.**

Below, **the E.L.D. pump and timer are located near the boat's battery.**

modify the times and duration for when the pump will run, depending on circumstances.

You could be out cruising and running an onboard air-conditioning system that drains water from the evaporator directly into the bilge. Or perhaps your boat has a built-in cooler that drains as the ice melts. Either way, it's simple to adjust the duration from one minute three times daily to three minutes three times per day, for example, to let the pump have enough time to pump out the excess water.

The pump and timer I used are both inexpensive and readily available. The heart of the system, the sponge pickup, can be assembled with just a few parts: a "scrubby" rectangular sponge, a blank switch cover plate, an appropriately sized pickup connector, and some screws to attach the sponge to the plate. Some other considerations are the size of the hose and some added weights to keep the sponge in place. A smaller-diameter hose will have better suction, so I reduced the tube size with connectors from the pump to the sponge. Weights can be added to the top of the sponge on the plate to help it stay put and provide better suction.



While the pump and timer can be mounted anywhere (in close proximity), I have mounted them on a small board for the sake of convenience. Wiring from the battery to the timer and pump is pretty straightforward.

Overall, I'm very happy with my E.L.D. My bilge is always dry and sometimes even dusty. The E.L.D. has been installed on several of my fellow captains' sailboats, and by all accounts they are pleased. At the last time of purchase, the total cost for materials was about $100.

Steve Bufe, the great-grandson of a local lighthouse keeper, learned to sail on the southern shore of Lake Superior in Michigan's Upper Peninsula. He currently sails his 1985 Pearson 303 from the Middle River on the Chesapeake Bay.

Overboard!

A series of bad decisions leads to a potentially fatal situation.

BY BILL BALLARD

Squalls were building rapidly as *Jo Beth* rumbled along under engine power, some 10 miles southeast of the entrance channel at Cape May Harbor on New Jersey's southern coast. Winds blew from the south-southwest at 25 to 28 knots, with a few lulls around 22 knots. The waves were short and choppy, around 3 feet, with an occasional 5-footer slamming our hull. *Jo Beth*, our 1984 Pacific Seacraft Crealock 34, rolled and yawed a bit, but we were doing fine, warm and reasonably comfortable in the cockpit enclosure.

The forecast was pretty much as stated; the only thing off was the timing of the squalls and thunderstorms. They were not predicted to be in our area until much later in the day, around 5 or 6 p.m., but they were on us now, at noon. The forecast had also warned that some of the thunderstorms could produce winds of 50, 60, or even 70 knots — close to hurricane force — and it was this piece of information that concerned us the most.

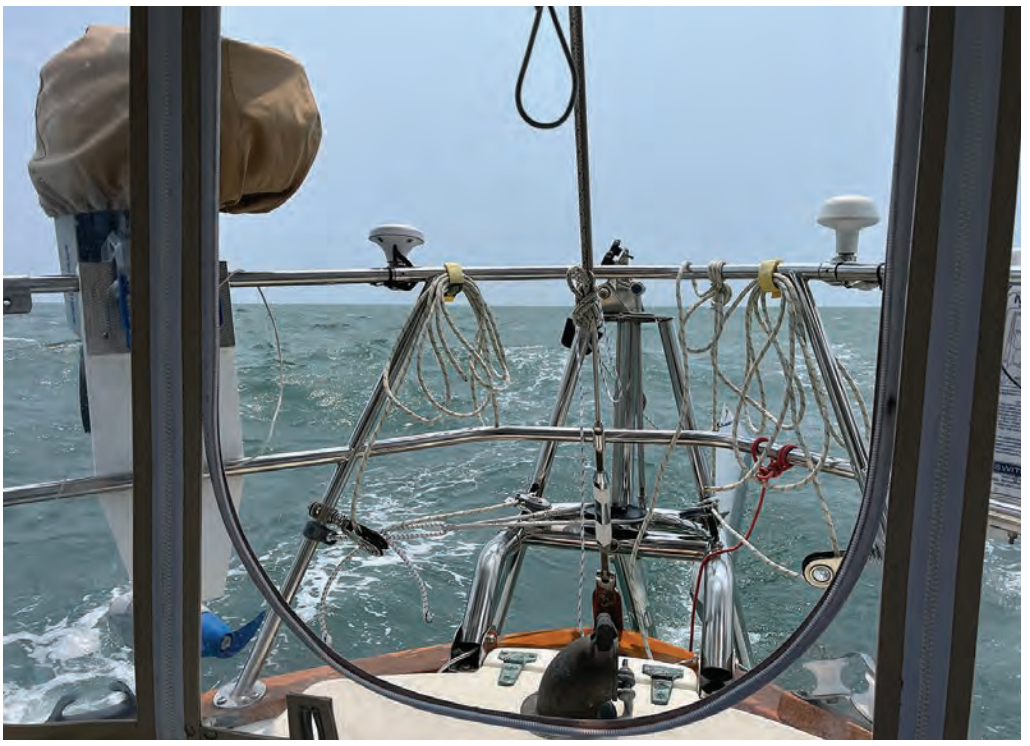
The squalls would be upon us before we could reach the harbor. Winds in squalls can change direction rapidly, and we didn't want to have any sail out in those conditions. Lisa and I had dropped sails and secured *Jo Beth* as best we could, ready for the inevitable hit that was coming. But I was not happy with the way the mainsail had flaked when it dropped into the stackpack, and that the mainsail cover was not closed and secured. I was worried a strong gust could catch the sail and pull it out of the cover, potentially damaging the sail or rigging.

The solution was simple: retrieve my safety harness from the cabin and clip onto the jackline. Then I would stand on the cockpit coaming, and while holding on with one hand, reach and grab the sail cover zipper pull with the other and zip the cover closed. It's something I'd done many times with the boat underway, at anchor, and secured to a dock. It seemed like no big deal.

Lisa disagreed. She felt the sail was secured well enough, and if the wind did catch it, we'd deal with it accordingly. I argued that an ounce of prevention was always better than a pound of cure. After putting on my PFD and clipping my harness onto the jackline, I went onto the starboard side deck and stepped onto the coaming.

The boom was sheeted in tight but still swung from side to side with the motion of the boat. I had a solid handhold on the grabrail on the side of the dodger and leaned over the frame of the cockpit enclosure, reaching for the zipper pull with my left hand. The zipper pulled easily, and I realized its ends had separated.

I only need a second, I thought. I let go of the handhold and leaned farther over the enclosure, my upper chest resting on the boom, and reached for the cover, grabbing both sides and pulling them together.



The winds and seas built steadily through the morning off the Maryland coast as the couple sailed north toward Cape May, New Jersey.

These large cockpit pad-eyes allow the tether to move with the user.

Then, in a split second, I was weightless, holding nothing.

At the very moment I let go of the handrail, one of those 5-foot waves pushed under the boat. *Jo Beth* rolled to port, and then snapped back to starboard. The swing of the boom came back into my upper chest and flung me backward into the air. I was unaware of what happened until I was fully submerged in the Atlantic Ocean. I didn't even have time to blink; I stared into a green-blue mix of bubbles and water. There was no panic. If anything, there was disbelief, which was quickly cleared away.

Our harnesses have a double tether system; one is a no-stretch tether that measures a little more than 3 feet, and the other is a stretchy tether that is around 6 and a half feet when fully stretched. When I clipped my harness to the jackline on the deck, I used the stretchy tether. *Jo Beth* was still moving through the water under motor power at 5.5 or 6 knots. The tether pulled taut with a jerk, yanking me forward and slamming me chest first into the bottom of the boat. The pressure of *Jo Beth's* bow wave pinned me against the hull while pushing me toward the surface. The wind was coming over the port side and the boat was heeling to starboard, placing the caprail a bit lower than if she were floating fully upright.

Still facing forward, I was able to reach up and grab the caprail, pulling my head from the water, then was promptly hit in the face by two waves, swallowing mouthfuls of ocean. I spun myself around so my back was to the bow and looked up into Lisa's stone-faced expression, her eyes wide with shock.

I realized then that my automatic-inflating PFD had not deployed. I had been in the water for perhaps 30 seconds.

The PFD should have inflated within 10 seconds, 15 at most. The vest has a manual inflation activation system as a backup, but I didn't think of that at the time. My entire focus, and Lisa's, was getting me back onto the boat.

Lisa had moved to the cockpit and put the motor into neutral. Almost immediately, the incredible pressure of the bow wave eased, but *Jo Beth* didn't come to a stop. The strong winds and waves still pushed her along at a knot or two. Lisa slacked and lowered the starboard jib sheet into the water so it formed a dip for me to use as a step to get my chest and shoulders above water.

When my feet were on the sheet, she winched it in as much as she could. I asked her to grab my harness and pull me up so I could get a better hold on the rails by wrapping my arms fully around them. I had tried pulling myself up and swinging my legs to the rails, but couldn't do it. I'm too short, and the water dragging against my legs and torso eliminated that as a recovery option. Once I had a secure hold with my arms and was standing on the jib sheet, I began to relax a little. Then I realized Lisa was on deck without her vest.

"Get your vest on and clip in," I told her.

"No," she answered, "We don't have time. I've got to get the ladder moved to this side."

Jo Beth's boarding ladder was fitted on the port side of

The vest the author was wearing when he went overboard shows the inflator mechanism armed and ready, post submersion.

the boat, but it can be easily moved to either side.

"Get your harness on," I said more urgently, adding, "If you go in, this is over for both of us."

She quickly slipped into her vest and clipped on. My grip on the rails was weakening.

"Hurry!" I yelled.

She returned with the ladder, and once it was set and lowered, I found it incredibly difficult to release my grip on the rails. This was partially out of a fear of letting go, but due more to the fact my arms and hands were cramping intensely. Lisa grabbed my harness as I reached for the ladder with my right hand. Together, we pulled me over, and after finding the lower rung with my right foot, I swung the rest of the way and was fully on the ladder. We hadn't deployed the ladder legs, which would have stood the ladder off from the hull, as I was afraid I couldn't maintain my hold long enough. The ladder rungs were flat against the hull, which meant only my toes were on them. I found the next rung, and the next, and was then able to reach a handrail of the deckhouse and pull myself back on deck. I was safe.

My mouth, sinuses, and eyes stung with sea water, and my arms and hands were shaking from adrenaline and the exertion of holding onto the boat. Lisa helped me back into the cockpit and zipped the enclosure closed.

"My vest didn't deploy," I stammered.

Not a minute later, the full force of the squall hit, with a peak wind of 52 knots — that's just under 60 miles per hour, comparable to a strong tropical storm. The rain pounded down hard and visibility dropped to mere feet. The waves built into a steep 6-foot chop and were more like moving walls of water than ocean waves. Blinding streaks of lightning flashed and thunder boomed.

Lisa steered us on a course to the east, putting the wind and waves on our stern quarter, and ran off. After about 45 minutes, the rain had abated and winds were down to 10 knots. A heavy, black cloud hung over us, and the horizon to the east was an ugly green-gray, like a bad bruise on the sky. The skies to the west, however, were bright and clearing. As *Jo Beth* heaved in the swell, the seas settled back to the 3- to 5-foot range and we resumed our course for Cape May Harbor.

"I'm sorry," I said, after things were calmer.

"Me too," Lisa said, worry still etched on her face.

"Thank you for getting me back on board," I told her.

"You got yourself back aboard," she said.

"We did it together," I emphasized.

A moment passed and the skies brightened a bit more. The motor purred, an unseen current giving us a boost toward the coast. We opened some of the enclosure panels for fresh air.

"Did I look scared?" I asked Lisa.

"No," she answered. "You looked pissed off and determined." I think she sugarcoated her answer.

After we anchored in Cape May Harbor, I phoned the company that has serviced and maintained all of the lifesaving and firefighting equipment we carry aboard *Jo Beth*. They had just serviced our vests three months earlier, and the concern in the owner's voice was evident as I described what had happened. He asked that we ship the vest back to him for an inspection and testing to figure out what had gone wrong. In the meantime, he arranged for a new vest and harness system to be shipped to me. The company tested my vest; a visual inspection revealed no problems, and it deployed in their water test

***Jo Beth* rests at anchor off of Bold Island in Maine's Penobscot Bay, with her swim ladder deployed correctly.**

tank within seven seconds of immersion. Why the vest failed when I was in the ocean remains undetermined.

I'm OK. Lisa's OK. We're through this, and for the most part, none the worse for wear. We're back to our normal routine — boat chores, laundry, cleaning, provisioning, and monitoring weather forecasts, though with a revised outlook on safety protocols. Ocean cruising is often said to be hours of boredom punctuated by moments of terror. We couldn't agree more.

Bill Ballard and his wife, Lisa, are currently cruising the U.S. East Coast full time aboard their 1984 Pacific Seacraft Crealock 34, Jo Beth. *Bill is a retired marine surveyor and shares his knowledge and their sailing experiences on their website and blog at www.svjobeth.com.*

The Takeaway—BB

I spent most of my professional life as a marine surveyor investigating marine insurance claims and quickly learned that accidents are rarely the result of a single event. Almost always, a series of small, seemingly insignificant oversights and mistakes lead to an accident. What happened to me was the culmination of multiple poor decisions on my part. It was not the fault of the weather, or *Jo Beth*, or the ocean. I made an impulsive decision based on inadequate data, and as Lisa readily points out, I ignored her input on the situation. Plus, I violated the age-old sailor's rule of, "one hand for the ship, one hand for yourself." It almost cost me my life.

Even in calm conditions, going overboard at sea can be a death sentence, even if the crew sees you, even in clear weather. If you're singlehanding, even if a PFD/harness and tether is used, it likely becomes a body recovery system. A person in the water, being dragged by a boat, can drown in seconds. Going overboard at night, or without being tethered or your crew knowing you're gone, is most certainly the end. These are facts we sailors accept as part of the risk versus reward equation; this is cruising.

This seems obvious, but it has to be said: The most important lesson learned is, stay aboard the boat. Had our mainsail come unfurled in the squall, we could have dealt with it later. My decision to try to prevent what was an unlikely scenario brought about an infinitely worse set of circumstances. Had I hit my head, broken a bone, dislocated a joint, or become entangled under the boat, the outcome would have been much worse.

In our post-analysis of the event, I determined that had I been clipped with the short tether, or clipped onto one of the two pad-eyes fitted in the cockpit, I might not have gone in the water, at least not fully. It also occurred to me that if the vest inflated during our recovery process, the force of the inflation may have caused me to lose my grip on the rails. On the other hand, the inflated vest would provide substantial buoyancy, possibly making it easier to get back aboard; it also would have increased the drag I was already battling.

Lisa didn't radio the Coast Guard or make a Mayday call on the VHF; there simply wasn't time. I was attached to the boat and conscious, so the utmost priority was getting me back aboard. Had I become separated from the boat, a Mayday call would have been made. Our vests do have ACR ResQLink+ 406 Personal Locator Beacons and Ocean Signal rescueME MOB1 devices with AIS attached, along with knives, whistles, and water-activated lights. But because my vest didn't inflate, the beacons never activated. They can be activated manually.

At the root of this situation is a lesson as to how complacency had crept into our shipboard routines. In 2022, we added a full cockpit enclosure to *Jo Beth*. We stayed warm and dry in foggy conditions and rain. We were sheltered from chilly winds and spray. We felt safe and secure, and without much thought, we stopped wearing our harnesses and tethers when offshore. Early on, they were in the cockpit with us, but after a few uneventful passages, they stayed in the cabin. Friends told us of a time when they were motoring under nearly flat calm conditions at night, somewhere off the east coast of Florida. Out of the darkness came two unusually large and breaking waves, destroying their cockpit enclosure. Our cockpit enclosure has been a wonderful thing, but it has fostered a false sense of safety.

Another lesson learned is that neither Lisa nor I is capable of getting ourselves back aboard without the assistance of the other. Lisa struggled to help me while I was in the water, and that was with me doing everything I could to assist. Had I been unable to help myself, things would have gone very differently. To this end, we're considering adding a second boarding ladder and keeping the running backstays, each with a six-to-one purchase, deployed to utilize in any recovery process. In this instance, Lisa should have clipped the running back onto my harness in case I lost my grip on the stanchion.

We will always deploy the legs on the boarding ladder so that it will stand off from the hull. And we are planning to upgrade my vest to one with a built-in spray hood for face protection. We're also looking for ways to secure a jackline along the centerline of the cabin trunk, as most of our on-deck work involves being at the mast.

As unlikely as it seems, there are good things to come from this. Lisa and I know we are more capable than we thought to handle an emergency at sea, at least one of this nature. We're reinforcing existing rules: We don't leave the cockpit when offshore, regardless of conditions, without our vests and our tethers clipped and locked, and without the other person in the cockpit. We'll discuss the pros and cons, and agree on the necessity of performing any task on deck. In the cockpit, we'll always wear our vests and be clipped in, as we did before adding the enclosure.

And before future servicing of our vests, we'll remove the beacons and do a live test by jumping into the water while wearing them — with the ladder down and others around to assist if needed.

The Engine Whisperer

Solving the mystery of a cantankerous old Atomic 4

BY D. B. DAVIES

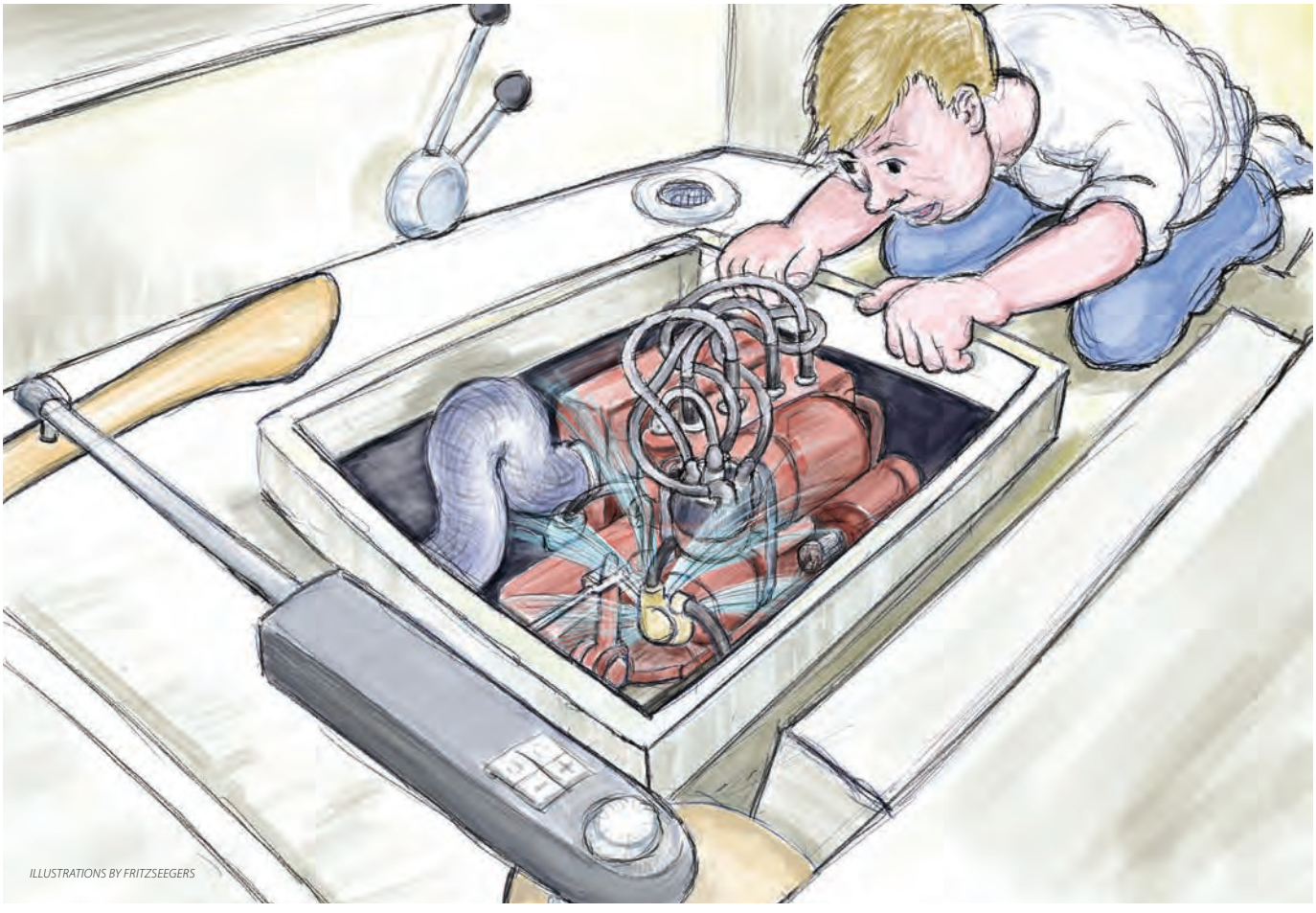
Let me say up front that I have nothing but praise for these venerable old Atomic 4 engines that were put into so many good old boats back in the day. Mine was installed in my Grampian 30, *Affinity*, in 1974 in Oakville, Ontario. When I bought it in 1998, the owner who'd sailed the boat the previous 14 seasons assured me that he'd never had a speck of trouble with it.

"Just change the oil, brighten the plugs, check the water pump impeller, and start her up. She jumps to life every spring," he said with confidence.

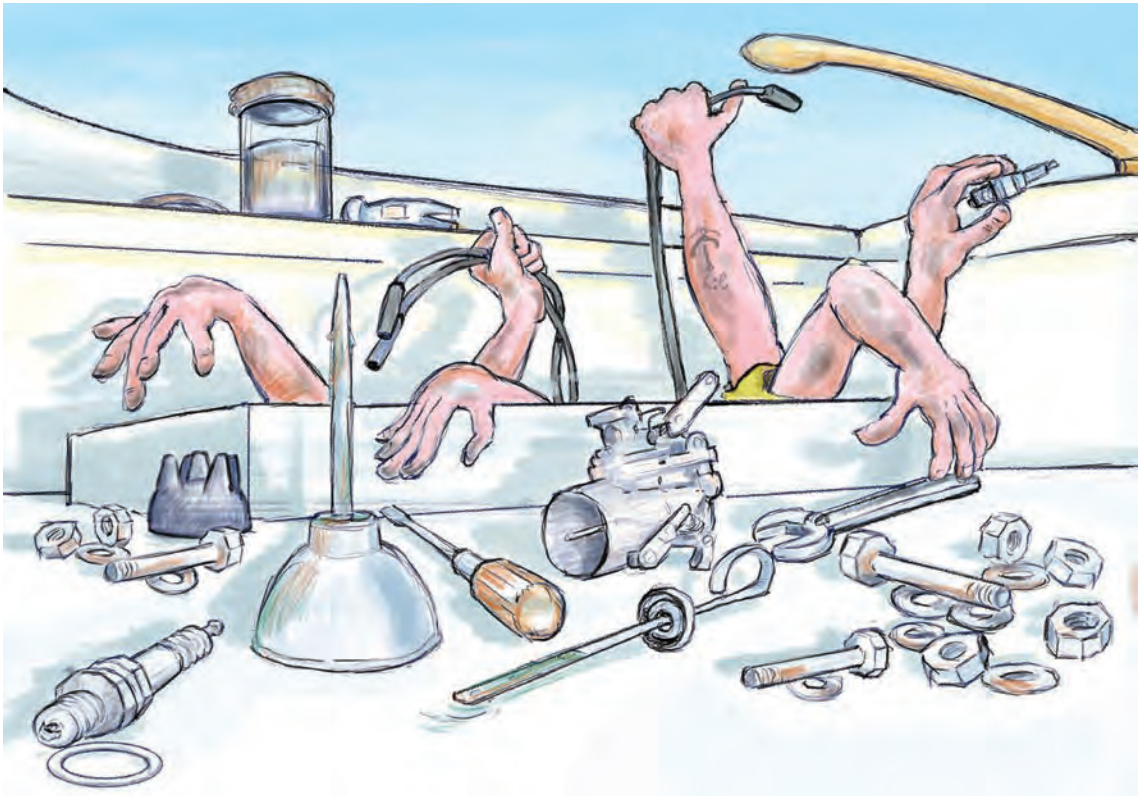
And that's pretty much the way it was for the next 20 years — until two years ago, when events seemed to collide to make a perfect storm. The first thing I noticed didn't seem to have anything to do with the engine. It was my electronic bilge pump kicking on more frequently than it had in the past. The engine continued to take me out of the harbor and back at a reasonable speed. Then, either under sail or back at the dock with the engine shut off, I'd go below and check the bilge to find more water than usual. I checked all the through-hulls and nothing was leaking.

But as the weeks went by, the situation got worse, and finally, one day as I was chugging out of the harbor, I decided to put the autohelm on and check the engine compartment. Water was spewing out all over the place from the water pump housing while the engine was running. The water pump gasket had blown.

Now, I don't know about other Atomic 4s, but mine has a peculiar peccadillo.



ILLUSTRATIONS BY FRITZSEEGERS



There is a plate at the back of the engine covering the engine/transmission coupling. It is very close to the tube that holds the dipstick to check the engine oil. Checking the oil is always a chore because of this awkward location; often, the collar on the dipstick catches on the plate and it doesn't go down far enough to cover the top of the tube leading to the crankcase.

Once I fixed the water pump gasket, the engine continued to run, but it seemed to be struggling a bit and didn't have the power it once did. It was nothing too serious, but when I changed the oil at the end of the season, it was gray and milky. My heart sank. Water in the oil could only mean one thing: a cracked block. I was looking at replacing the engine.

With a queasy feeling in my gut, I changed the oil four times. After the last one, the oil in the crankcase was clear. No sign of water. I started the engine and let it idle for half an hour, then checked the oil again. It was clear. Hope sprang to my heart. Next, I took a compression test and the reading for each cylinder was almost as high as when it came out of the factory. There was no crack in the block!

That's when I figured out what had happened. The water got into the crankcase when the water pump gasket failed. The dipstick had hung up on the metal plate and hadn't covered the opening to the tube, so the water spewing from the compromised gasket had gone down the dipstick tube into the engine oil. The engine had been running on watery oil for the last month of the season. With cautious optimism, I started the engine and motored to the dock to have the boat hauled out for the season. But after 20 years, I knew that engine, and something still didn't feel right. That nagging doubt dogged me all winter.

In the spring, with some trepidation, I opened the engine compartment and began my launch preparation ritual: Pull the plugs, brighten them up with a few swipes of emery paper, squirt a few drops of oil into each cylinder, and put the plugs back in. That first spring when I bought the boat, I looked into the engine compartment and saw the plug wires coming from the distributor cap to each cylinder. I could see that it would be easy to put them back in the wrong order, so I wrapped a piece of duct tape around each plug wire and put its number on it. Now 20 years on, the numbers had faded and the tape was brittle. I vowed to renew the tape sometime in the future.

For now, I just wanted to hear the engine start. I immersed the water intake tube into a bucket of water, double-checked everything, and gave it a try. After a few moans and groans, the engine started and I caught the antifreeze coming out of the exhaust in a bucket. This was a good sign. When the boat splashed into the water, I gave it full choke, and after a few cranks the engine started and I gratefully motored slowly to my slip. The sailing season had begun and it looked like I'd escaped a major engine disaster.

However, as the season wore on into summer, I could feel a hesitancy in the engine. I only use it to go out of the harbor and come back in, no more than 15 minutes each way, but it increasingly seemed to be laboring. Finally, one day after clearing the harbor, I decided to give the engine a good run and hopefully clear out whatever was ailing it. But I discovered that once the accelerator lever had passed the halfway mark, the engine had no power. It started and idled fine, but under a severe load, it wouldn't rev higher and there was no power to the stroke. The more I pushed it, the less power it had. At that point I knew I had a problem but had no clue what it might be.

Though there was no sign of water in the oil and the compression readings remained high, the engine seemed to lose more power with each trip out on the lake, until finally, in the last week of the season, it wouldn't start at all. I called in reinforcements. My good friend Jeff suspected timing issues; we checked the timing and it seemed OK. There was spark to every cylinder and fuel was getting through, but it just wouldn't fire. As *Affinity* and I were humbly towed to the haulout dock, I planned my next move. I suspected a fuel supply issue, even though the plugs were wet. Over the winter, I thought, I'd remove the carburetor and fuel pump and rekit both. Hopefully that would be the solution.

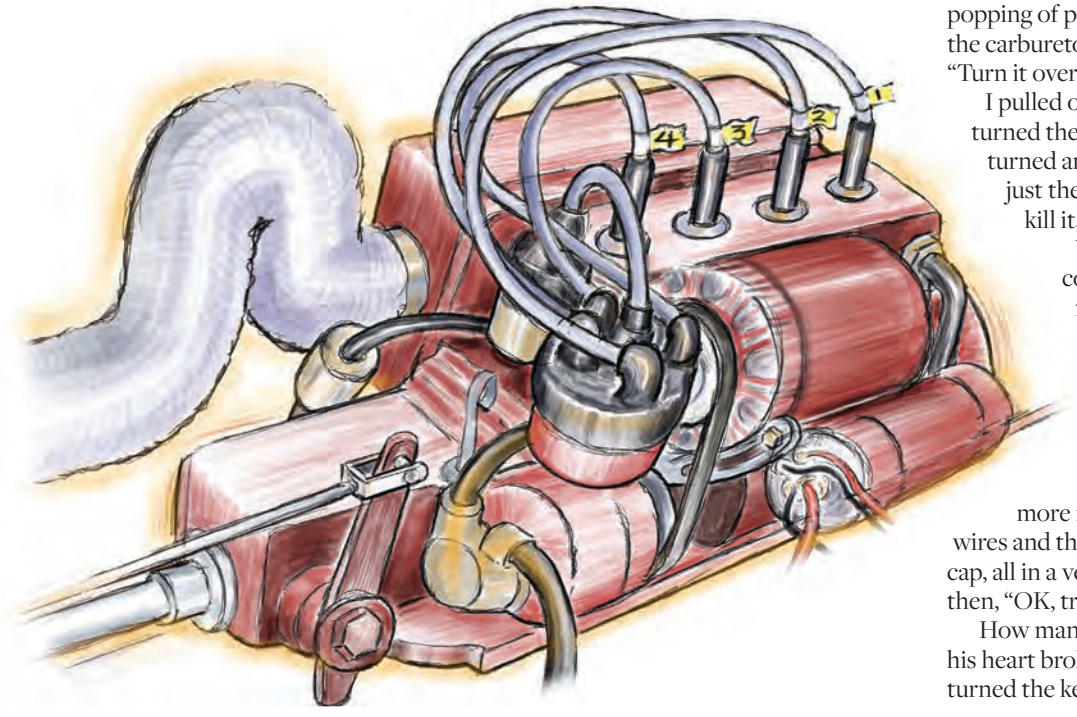
The next spring, I went down early to install the shiny refurbished carb and fuel pump. Jeff was still thinking the problem was timing, and he wanted to check the

distributor cap, points, and condenser. I decided to check the plug wires for continuity. As I did so, I discarded the old taped numbers from each wire but didn't bother to make new ones for them. I had the original manual for the engine with a diagram of the wiring system. What could go wrong? With the water intake tube in the bucket, we turned the engine over and she started reluctantly. Antifreeze out and water in — maybe we had it solved. After the boat was splashed, I started her up and cruised around the harbor at low speed until the engine warmed up. Then I pushed the throttle forward, and my heart sank. It felt exactly the same as it had in the fall. There was no power beyond halfway on the throttle, and worse, the engine was starting to sputter at lower speeds.

As I approached the dock, the engine conked out completely, and I was grateful for the several hands that caught us and kept us from smashing through the dock. It was obviously time for more reinforcements, as this was getting beyond my basic diagnostic knowledge of air, spark, fuel, and engine issues. The reinforcements, more friends from the club, went through all the procedures I'd already tried. Was the timing set properly? Were the spark plugs good? Was the fuel tank vented? Was the water separator canister tight? Was the carburetor adjustment correct? Each time they asked me to try the engine, it was harder to start, until finally, it wouldn't start at all.

I was confined to the dock and miserable. My friends and I were at a loss. Then I read on Moyer Marine's website that the loss of power can sometimes be caused by a restricted exhaust system. That must be it! After all, the engine was 40 years old.

Carbon must have built up in the exhaust manifold and pipe, I reasoned, and that's what was causing the problem. I spent three agonizing days twisted and aching and sore in the bowels of my boat, removing the exhaust system secured by unyielding 40-year-old, rusted-in bolts — only to find everything clear, with almost no carbon buildup at all. In utter despair, I spent another three tortuous days putting the exhaust system back together. I was as exhausted as my exhaust system, and still the engine wouldn't start. After cranking it, we found that there was fuel on the plugs. Sometimes it would start, but it sounded like it wasn't firing on all cylinders. To check, we pulled plug wires one at a time, and sure enough, pulling the plug wire on cylinder four made no difference. Pulling the plug wire on cylinder one and leaving cylinder four connected also made no difference in the way it ran. Then it just wouldn't run at all. The season was slipping away, and I'd tried everything I could think of, to no avail. I had to admit defeat.



At that point, someone in the club mentioned that we had a new member who taught marine mechanics classes. Why not ask him to take a look? His name was Robert Coates, co-owner of ATS Training and Consulting in Newmarket, Ontario. He was out of town on a business trip, but I was assured he'd call me as soon as he got back. I had the feeling it was a sort of, "Don't call us, we'll call you" conversation. I was wrong. The next week he called and said he'd be down at the club the next day and would be pleased to look the engine over. I went down to the boat early, just to review everything. I took each plug out of each cylinder, ground it to the block, and turned the key. Each plug gave a healthy spark. I put the plugs back in, cranked the engine some more, and could smell the gas. When I pulled the plugs, they were wet. None of it made sense.

Then I heard a voice. "How's it going?"

I stuck my head out of the companionway and said, "It's not."

Robert introduced himself and I invited him aboard. We talked about the weather, then I went into my woeful story. He didn't say much of anything, but after I'd finished, he smiled. "Why don't I take a look?"

With that, Robert disappeared through the companionway and seemed to get lost in the engine compartment. I heard noises — the clinking of wrenches on bolts, the snap of the distributor cap springs, the popping of plug wires, the squeaking of the carburetor linkage. Finally, he said, "Turn it over."

I pulled out the choke hopefully and turned the key. The engine turned and turned and groaned and sputtered, just the same as it had before. "OK, kill it," Robert shouted up.

Well, I thought, now he'll come up and tell me he can't figure it out either. I was doomed to sit at the dock all season and be towed to the haulout dock once again. But instead of Robert coming out of the cabin shaking his head, I heard more noises — the popping of plug wires and the snapping of the distributor cap, all in a very rapid succession, and then, "OK, try it now."

How many times must a man have his heart broken? I pulled the choke and turned the key, and the old Atomic 4

sprang to life. It was the most glorious sound of the season! It wasn't just running; it was humming strong and vibrant, just the way it always had.

"Give it some throttle," came the shout from below.

I pushed the accelerator lever forward and the rpms responded heartily. "Sounds great," I shouted above the roar.

"Put it in forward," came the reply. I pushed the transmission lever into forward gear. "Give it some revs," Robert said. I lifted the throttle lever a few inches and the boat surged forward, pulling at the docklines and straining the cleats until I backed off. I put it back in neutral and brought it down to a happy idle. As I sat gleefully smiling to the sound of a healthy engine, Robert emerged, wiping a bit of grease from his hands. "Sounds good to me," he said with a grin.

I shook my head. "What was it?"

"Plug wires on the wrong cylinders," he answered. "I moved them all forward one."

"Impossible," I said. "I followed the diagram in the manual when I put them on this spring."

"I'm sure you did," he agreed. "However, I have a feeling that sometime in the life of this engine, someone was moving the distributor while they were playing with the timing. When they did so, they lifted the distributor shaft and rotated the engine at the same time, so that when they put the shaft back down on the crank, it had moved it over a few notches. Rather than try and find the original spot on the crankshaft, they just moved the plug wires and that brought it back to the correct firing order and timing."

I was about to ask, "Then why did it run so well for 20 years?" when I remembered. Every year, I had put the plug wires back on the same cylinder as when I first got the boat because I'd numbered each plug wire. After refurbishing the carb and fuel pump, I had removed those old pieces of tape and replaced the plug wires according to the manual. So by putting the plug wires back to where they were supposed to be, I'd actually put them in the wrong firing order.

After explaining this to Robert, I asked how you can have spark and fuel and not have the engine run.

"You had spark and fuel, but you didn't have them at the right time," he explained. "For the engine to run correctly, you need the spark and fuel to fire when the cylinder is at the top of its travel. With the wiring the way it was, you'd get some fuel, but it would be on the piston head when it was at the bottom of the cylinder.

"The plug would fire, but not hot enough to ignite the fuel that was that far away," Robert said. "That's why it would sometimes cough and sputter, but never really catch and keep going. Sometimes the fuel would ignite, but most times it wouldn't. And even if it did ignite, the piston was at the bottom of the cylinder and couldn't go any lower, so there was no power to the stroke."

I shook my head. "How did you figure all this out so quickly?"

"After what you told me, you had eliminated just about every other possibility. So it made sense to move the plug wires to the next spark plug and give it a try. Sometimes you just need to get lucky. Seems to be working fine."

And so it did for the rest of the season, even when the gales of October called for a lot of power into a heavy chop to keep the boat head to wind to drop the sails. The final theory is this: The water in the oil was unfortunate and may have contributed to the engine running rough at first, but the four oil changes seemed to have fixed that problem. Running poorly after the oil changes could be attributed to the carburetor, the fuel pump, or several other causes that were fixed with the overhaul in the winter. The real problem was caused by removing the pieces of tape with the cylinder numbers on them and subsequently following the manual's diagram to put them back on.

It's an old engine. and who knows what will happen in the future, but I'm not all that worried anymore. After all, I now know Robert Coates — the Atomic 4 whisperer.

Don Davies is a writer with film scripts, stage plays, novels, articles, and grandchildren to his credit. He lives in Toronto with his wife, Jacqueline, and sails his good old Grampian 30, Affinity, *on Lake Ontario.*

Custom Cuts

How 3D printing can help create new or replacement parts aboard

BY GRAHAM COLLINS

As an engineer, I've been intently watching 3D printing technology develop over the last decade. At its inception, I viewed it as a toy, making trinkets and a few useful things, but I've changed my tune in the last few years as this technology has developed.

There are a couple of reasons for this change of heart, the big one being that the cost and quality of 3D printers have improved dramatically in the past few years, and 3D printers are now much more common and accessible. Also, the software needed for drawing the desired parts has improved, and free versions are available that will suffice for simple parts.

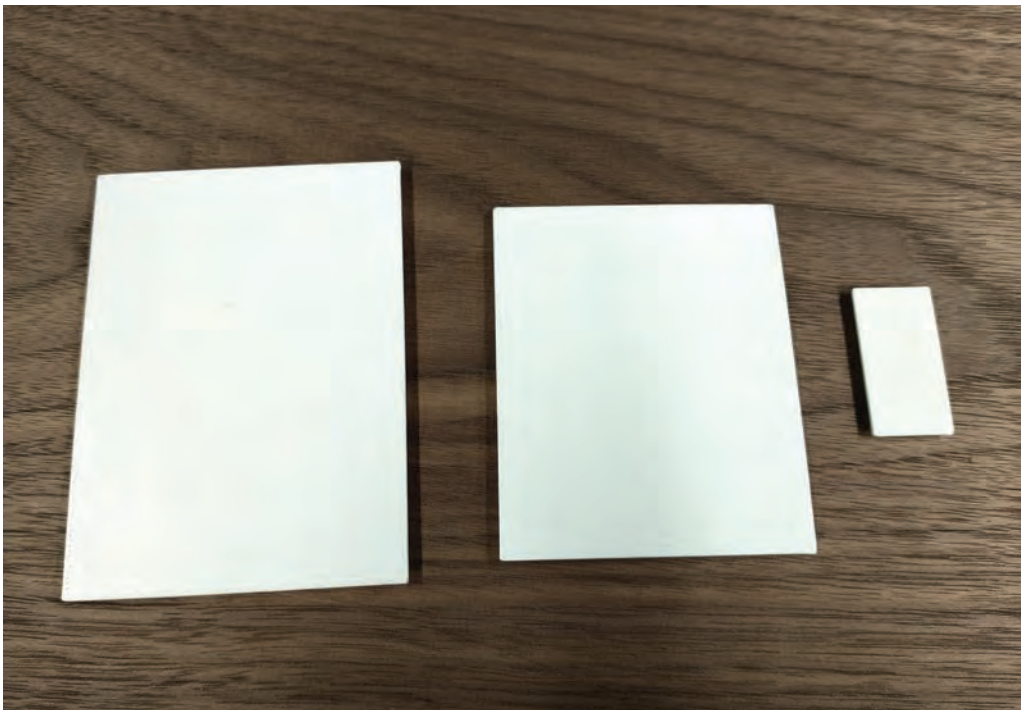
A 3D printed part is a component that is made in an additive manner — a basic 3D printer dispenses melted plastic, building up from a base plate to make whatever shape is programmed. It is essentially a layer cake of many layers. There are more complicated variations if complex shapes or higher strength are needed. There are high-tech 3D printers using carbon fiber-infused materials, and printers that print metal; these prints can be heated to fuse the metal together, creating parts that rival the strength of machined parts. High-tech printers are being used in Navy ships, allowing the Navy to print spare parts, thereby reducing the quantity of parts required onboard and downtime.

After printing a plastic pawl lockout for 3-speed Lewmar winches, the author had a stainless steel version made for longevity.

When a new propane alarm was fitted, a custom 3D printed mounting plate was the perfect solution.

Realistically, we aren't quite at that stage where many sailboat owners are going to have a 3D printer on their boats. I won't be printing a replacement part onboard anytime soon, but there are absolutely parts that can be printed for a good old boat.

The first step is to get or make a software file of what you want printed; that will typically be in STL format, as most 3D printing software



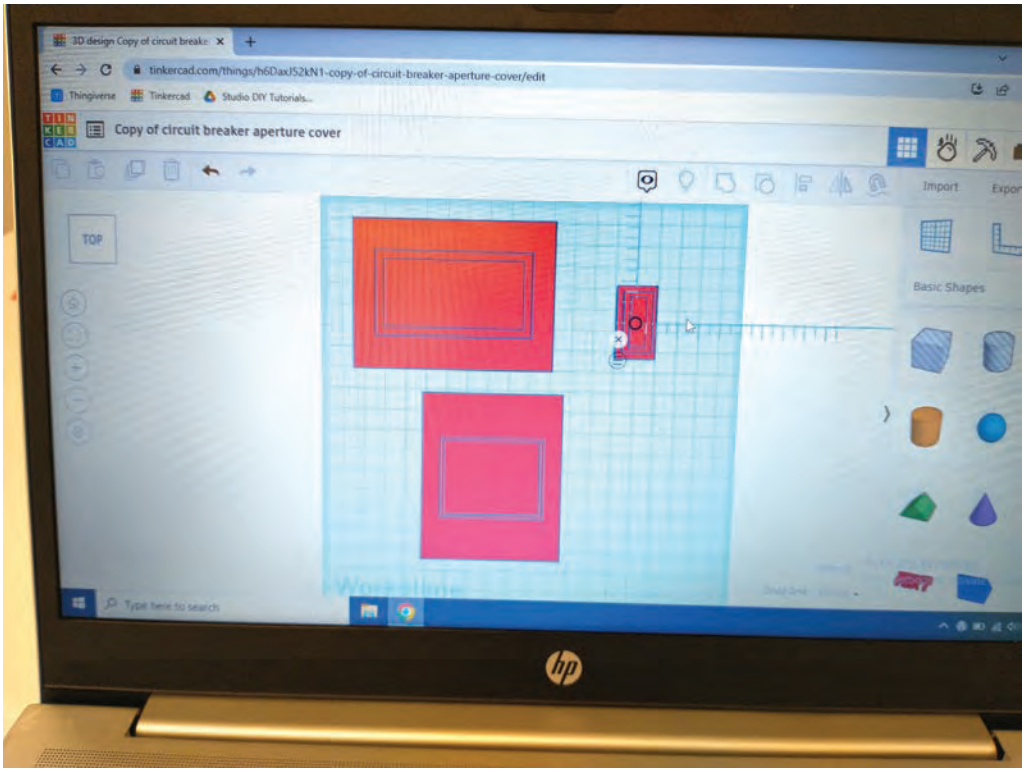
Cover plates are an easy thing to make on a 3D printer and look great when installed.

will use this type of file to generate the print path needed to print the part. To make the file, you will need to draw the part with computer-aided design (CAD) software. Alternatively, if it is a part that someone else might have needed, you can try searching the internet for a file. One of the larger online repositories of 3D part files is Thingiverse, where designs that other folks have created are available to download. Need a new sun cover for a Raymarine display? A spacer to put under a cam cleat? These are things for which others have already created digital design files.

Next, you will need to print the file. There are several options for this. Check your local area for a makerspace, a communal workshop where tools and equipment are typically available for use; in my hometown, the local library has a makerspace lab that has a couple of 3D printers. If that's not an option, ask around and see if you know anyone with a 3D printer. They are more common than you might think, and people who own them tend to be enthusiastic about them, so it may not be hard to convince them to print you some parts. If local options are not available or if you are looking for a higher-strength part, you can look at online printing services. These are services that print on demand, use high-end machines, and offer exotic materials.

Material selection is important. How strong does it need to be? How will it be loaded (compression or tension)? Will it be exposed to UV light? Can and will it be painted? These questions influence both the materials and how a part is designed. The printing orientation will influence strength in the same way as wood grain influences the strength of a piece of wood — in a 3D-printed part, the join between layers is the weak axis, similar to grain in wood.

My first example is a very practical application for a good old boat — cover plates. Most boats have had things installed that no longer work or have been replaced with something better, leaving a hole to be filled. On our CS-36, *Plan B*, there were a couple of these in the head; there was a holding tank treatment system that was long defunct, and for some odd reason, the breaker for the windlass was in the head. After removing the associated



Designing cover plates using Tinkercad.

Raymarine covers: The top one is the new 3D printed version. Photo credit JP Nurro.

wiring, I was left with three holes in the bulkhead. Pre-3D printer, I would likely have cut some aluminum plate and screwed it in place. But 3D printing is now another option.

I started by drawing up the cover plates, using the free online software Tinkercad with the cheerful assistance of Luke at the library. I drew thin plates with raised sections that would fit into the holes in the boat and keep things located well. Once these were drawn as STL format files, I then converted the files and printed them in our library makerspace. I gave the resulting pieces a light sanding, spray-painted them to match the color of the wall, and glued them into place. The repair looks great.

Shortly after I installed the cover plates, the propane sniffer on our boat stopped working. As with most electronic things, a new one is a different size — in this case, much smaller. I could have cut and painted an aluminum adapter plate, but instead, I drew an adapter plate and printed it. It's light, won't corrode, and inexpensive — all good characteristics for a boat!

A more advanced example is within a pair of Lewmar 3-speed winches on *Plan B*, one of which wasn't working properly. Upon disassembly, I discovered that a plastic piece that locks out the high-speed pawls so the lowest speed will engage in the winch had broken. I drew the piece up in higher-grade CAD software, as the geometry is much more complicated. I had the local library print the part, and I installed it; but while the fit was accurate, the part did not survive in use. So I went to the other extreme and had it 3D printed in stainless steel, laser-fused, by an online company.

Having the part printed was fairly easy; the challenge was creating the CAD file for an unusual shape. Drawing unusual parts with CAD may not be as accessible a skill for the average individual, but if you know a mechanical engineer, you may find that a six-pack of beer goes a long way toward getting parts copied.

For myself, 3D printing has become another tool in the toolbox. It has strengths and limitations — as do all the tools in my toolbox. It makes it possible to create things that would otherwise be very difficult or very costly, or are simply obsolete and unavailable. So I'm sure I will use this tool again.

What's next? I've got some halyard cleats to install. A friend has printed up some stanchion-mounted blocks for his furling lines that look interesting. And one of the jib tracks on *Plan B* has a cracked end piece. There's always something on a good old boat!

Graham Collins is a mechanical engineer who builds anti-submarine detection equipment by day, runs a craft distillery after hours, and finds time here and there to work on Plan B, *a CS-36T, and sail her in the waters of Nova Scotia.*

At right, **older boats often have many locations where new covers are needed.**

Continued from page 5

Rainbow Reward

After tying up my 1972 Cheoy Lee, *VERITAS*, following the last sail of the season, I turned around to check that everything was shipshape, and noticed the double rainbow that had formed since I had entered the harbor.

—Kevin Bennet
Lake City, Minnesota

Racer-Cruiser

I thought I'd share a photo of my 1981 Cape Dory 27, *Spirit*, racing on Lake Lanier, Georgia, in 15 to 20 knots of wind on an October weekend. We placed second in the fleet over two days and scored two firsts. Love *Good Old Boat*!

—Randy Cadenhead
Flowery Branch, Georgia

We Want to Hear from You

We love hearing from you, our readers! To be part of Mail Buoy, share your letters and images with **andy@goodoldboat.com**. Also, are you getting The Dogwatch in your email inbox? It's free and the content is original. If you're missing it, visit goodoldboat.com to sign up.

Boats for Sale

Tartan 27

1968. Hull #374. Great design. Loves a stiff breeze. Many upgrades: sails, roller furling, traveler, cushions, electronic ignition, electric fuel pump, exhaust manifold and starter, all since 2000. Late version Atomic 4. In water and ready to go sailing. Located in Metedeconk River, Brick, NJ. $5,000.

Robert A Riker
908-370-2019
briker1518@yahoo.com

Atkin Gaff Schooner 33

1957. Fully restored '12-18. Ready to cruise again to Maine. White oak sawn frames replaced and 3″ floor timbers all fastened with bronze bolts. Lower planks replaced w/Atlantic white cedar. Lead keel with bronze bolts. All planks refastened with silicon bronze screws. New cypress deck beams. New deck: two 1/2″ layers of mahogany marine plywood and epoxied fiberglass cloth. Mast steps reinforced w/3/8″ stainless plates. Diesel engine rebuilt in 2012. Survey from Gray and Gray yacht brokerage. Westerly, RI. Reduced $25,500.

Jim De Reynier
860-305-1582
Jimder40@Gmail.com

Montgomery 23

1984. Lyle Hess design. Seaworthy rare sloop, 3,600 lbs., LOA 23′, LWL 21′10″, beam 8′, draft 3′. Very good-sized/high cabin. Lapstrake hull, w/dual-axle trailer. 8-hp OB recently overhauled. Lots of canvas. Good headroom. Improved over the years. Excellent condition. Sleeps 4. Downsizing to smaller boat. Phoenix, AZ. $6,000.

Ayhan Akcar
602-938-0711
akcarayhan@gmail.com

Chinook 34

1967. Hull #17. Sloop, masthead rig, fiberglass hull. Steel rudder epoxy-coated. Yanmar diesel power, freshwater-cooled. New S.S. mixing elbow. Interior wiring upgrade. Dometic electric toilet, 23-gallon holding tank. H/C water. Monitor windvane. Stovetop and microwave for in-marina use. Interior restored from original. Diesel cabin heater w/dedicated custom tankage. Three anchors, CQR, Danforth and Claw. Full boat cover, two boom covers and two foredeck sail bags. #1-#4 headsails. Many spare parts, life jackets, etc., too many to list. Port Ludlow, WA. $15,000/OBO.

William Couch
360-621-6870
wcouch166@gmail.com

Catalina 30

1977. Outstanding Lake Superior sailboat. Includes wheel steering, radar, chart plotter, roller-furling genoa, nice mainsail, bimini, dodger, all halyards led aft to cockpit, 3GM diesel engine (overhauled 2019/very low hours). New larger prop matches larger engine, shore power, enclosed head w/shower, new bottom paint, 2 banks of dual group 27 batteries w/automatic charger. Beautiful shape w/above average care and ready to sail anywhere. Spacious salon/galley w/stovetop, sink, icebox/large countertop. Sleeps 7. No dingy/motor. Cornucopia, WI. $12,500.

Jerry Noland
507-391-3244
jerry@sailingsummersnow.us

C&C Landfall 35

1981. S/N 003. An ideal couple's cruiser. Single owner, professionally maintained. Always a freshwater boat. New main, asymmetric spinnaker, electric windlass, 500Ah house battery, 1kW inverter, Garmin GPSMAP and radar, autopilot, refrigerator-freezer. Signet instrumentation found nowhere else. Steel cradle, ShipShape custom cover, Avon dinghy, Honda 4-cycle outboard. Docked in northern Wisconsin. $40,000.

Dean Hedstrom
651-490-0109
dean@dkhedstrom.com

Tartan 27

1965. Built by Douglass & McCloud. Hull #113. Well maintained. Only two owners. V.G. battened main and large inventory foresails. Atomic 4 w/electronic ignition. U.S.C.G. fuel hoses. Two-micron Racor fuel filter/water separators. Newer alternator and rebuilt starter. PSS shaft seal. Six winches. Rigged for singlehanding. Rebedded and back-plated stanchions w/cleats in solid deck. Send postal address for extensive list, additional features. Lake Erie sloop. Cleveland, OH. $5,000.

David Bennhoff
440-333-5529
dbennhoff@gmail.com

Pacific Seacraft Dana 24 w/trailer

1987. *Tango* is a dream to sail. Well cared for, freshwater only. Overall 27' due to bowsprit. Hull soda-blasted to gelcoat, sealed, 2 coats of anti-fouling bottom paint applied '20. New head '22. New shower sump pump, tuned rigging, 2 new marine batteries, flushed/cleaned-out fuel tank, replaced fuel filter, adjusted shaft packing, diesel engine inspected/tuned, new carpet on trailer bunk pads. All electrical wiring checked/validated. Much more. On highway trailer to be transported anywhere. Green Bay, WI. $58,750.

Robert Puissant
920-205-7135
repuissant@aol.com

Boats for Sale

Pearson 26 Weekender

1976. Great daysailer, exc PHRF racer, heavy-duty gear, spinnaker-rigged. Lots of accessories. Incl LS outboard, car trailer, steel cradle. Plymouth, MN. Boat Free. Dinghy $250.

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

Victoria Frances 26

1982. Chuck Paine design, seldom seen on market. Lovingly maintained by owner for 36 years. 1982 1GM Yanmar with new cylinder head in 2022. Club-footed jib 80%, hank-on jib 120%almost brand new, never used by current owner! Interior varnished and spotless. Depth sounder. Bottom maintained every year by yard. Email for pictures and info. Located East Coast mid-Florida. $32,000.

Margaret Pesaturo
321-412-5943
thmargaret1@gmail.com

Products

Good Old Boat
Advertising Deadlines

ISSUE
March/April 2024
DUE ON: **January 2, 2024**

ISSUE
May/June 2024
DUE ON: **March 4, 2024**

ISSUE
July/August 2024
DUE ON: **May 6, 2024**

ISSUE
September/October 2024
DUE ON: **July 1, 2024**

ISSUE
November/December 2024
DUE ON: **September 2, 2024**

Déjà Vu

A serendipitous spotting of a family's first boat sparks a nostalgic mystery.

BY JOE CLOIDT

I'd like to think most people have experienced déjà vu, that odd feeling that you are reexperiencing a moment of time from your past. It could be triggered by a conversation, perhaps a chance encounter with a stranger you could swear you have met before. Sometimes it's a location that sparks it — you're somewhere new, but you're thinking, *I've been here before*.

What causes déjà vu? I'll leave that up to the French philosophers and scientists. Some think it's just odd memory snippets that randomly pop into your mind; others blame it on watching too much TV. I'll chalk it up to one of life's cool little mysteries, and real or not, I did have an actual déjà vu experience several years ago with my sailing partner, Nancy.

Nancy comes from a sailing family that got its feet wet learning to sail in New Jersey's Sandy Hook Bay on *Déjà Vu*, a Nicholson 32. In September 1974, her father, Richard, decided to move the year-old boat to the Chesapeake Bay for the winter sailing season. On the trip south, a navigational error during a nighttime squall off Island Beach State Park on the Jersey Shore caused the boat to get caught in the breakers and pushed onto the beach. Fortunately, Richard, his son James, and two sailing buddies made it safely ashore. The boat didn't suffer any structural damage, but the interior was ruined from seawater washing in through the open companionway. Nancy still has the clipping of a newspaper story with a photo showing *Déjà Vu* being lifted off the beach by a crane.

The boat was trucked to an Annapolis boatyard, where a prominent local befriended Richard and offered to supervise the repairs and help expedite the work to get the boat into Bristol condition and underway again. Once the boat was back in home waters, the family spent summer days sailing and exploring much of the Jersey Shore off the coast of Sandy Hook. *Déjà Vu* was eventually sold, and like many boats, became a distant memory and a story to be told around the fire with a glass of rum on a stormy night.

It wasn't a stormy night, more like a blustery day, that led Nancy and me to our déjà vu experience. I was on a two-month cruise from Florida to the Abaco region of the Bahamas in the spring of 2015, and Nancy joined me for a week of island adventure. Man-O-War Cay is a small island and one of my favorite places in the Abacos; it's quiet and laid-back, and when the wind was blowing hard, we would tie up to a snug mooring in Eastern Harbour, near the south end

Photos by Nancy Knobbs

of the island, till the wind backed down. Nancy and I were headed there from Green Turtle Cay to sit out an approaching weather front.

The wind was blowing hard when Nancy and I made our way into Eastern Harbour. The main pass into the harbor is a narrow, rock-lined cut that branches off to starboard for Eastern Harbour and to port for the island's main settlement. With blind corners and shoals on both sides, it's not the place you want to meet the water taxi on its way out. I focused on keeping us in the center of the channel as Nancy kept a watch for other boats. Once we made it into the harbor entrance, I relaxed my grip on the wheel but still had to contend with navigating the crowded mooring field.

Just as I spotted my usual mooring ball, Nancy turned to me and exclaimed, "Hey, there's my dad's old boat!" I throttled back, and sure enough, off to port, there was a Nicholson 32 named *Déjà Vu*! With a look of excitement in her eyes, Nancy said, "That's got to be his boat. It's too much of a coincidence. We need to check this out."

We headed for the mooring ball and quickly secured my Pearson 31, *Desire*, to it. Grabbing our exploring gear and camera, we jumped into the dinghy and made our way back through the anchorage, excited to solve the mystery on how *Déjà Vu* ended up here in this island paradise, a thousand miles from the Jersey Shore.

As we closed in on the boat, we laughed — was it fate, coincidence, or just plain chance that we would find *Déjà Vu* in this particular harbor? We circled around the sailboat several times, snapping pictures, Nancy searching her memory for details about the boat from decades ago. She was positive this was the boat her family had sailed out of Sandy Hook. We circled for a few more minutes, admiring the graceful lines and sheer of the Nicholson design. Although the boat was showing her years, someone was clearly still caring for her, and with sails still bent, she looked ready for an afternoon sail.

Setting off to do some detective work, we tied up to the public dock and looked for the nearest marina. We figured someone would know who the owner was or could point us in the right direction. Nancy explained our story to the woman behind the counter; she knew of the boat but thought the owner lived off island and probably had a local looking after it. Nancy left her boat card with the woman, who said she would see what she could find out.

We spent the rest of the day exploring the island, and after dinner, sat in the cockpit sipping wine while Nancy recounted some of her past sailing adventures. As the wine flowed, so did our imaginations as we debated the wonders of the universe and our déjà vu experience that afternoon. We never did find out how *Déjà Vu* ended up in Eastern Harbour, but we're fine with that. Nancy got to reminisce on what it was like spending her teen years living aboard, and I got to hear some interesting stories from back in the day, when the cruising community was a much smaller place. However *Déjà Vu* ended up in the islands, I'm sure there's an interesting story behind it; perhaps another captain is sitting back on a stormy night with a glass of rum before a crackling fire, regaling his listeners with tales of sailing adventures on *Déjà Vu*.

Though Nancy's father has since slipped the dock lines one last time and sailed off to Fiddler's Green, I'd like to think he is still at the tiller of *Déjà Vu*, sailing down the bay, surrounded by his family, with a fair wind over his shoulder.

Joe Cloidt is a retired electrical engineer who lives and sails on Florida's east-central coast. When he isn't out cruising on his Pearson 31 or racing on a J/30 at the local yacht club, he can often be found in his shop tinkering on his latest project or simply messing about in boats.

YOUR #1 DIY RESOURCE

Everything you need.
All in one place.

- ✓ Items not available anywhere else.
- ✓ One-stop resource with deep inventory.
- ✓ Easy-to-reach technical sales staff.
- ✓ Extensive free how-to content.
- ✓ Competitive pricing.
- ✓ Quick shipping.
- ✓ FREE shipping over $199*.

LENZIP · SATTLER · TOP NOTCH · TOP GUN · Odyssey · EverSoft · PHIFERTEX · STAMOID · STRATAGLASS · NAUGAHYDE · Dura-Wax · CRYPTON

Ultraleather · CORDURA Fabric · Morbern · Sea · EDGE Hotknife · SnapRite System · YKK · DOT · LOXX · Sunbrella · Tenara · COATS · AE · COVINGTON · Twitchell

SAILRITE®

Est. 1969

Equipping you to sew since 1969 | Visit us at **Sailrite.com**