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GOOD OLD BOAT

Issue 131: March/April 2020

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On the Cover

During the calm of an early morning in late June, preparing to head out for a sail from Pine Island Bay in Groton, Connecticut, Paul Rezendes looked out over the mooring field, saw this beauty of a sunrise, and grabbed his camera.

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The sailing magazine for the rest of us.

Tally Ho Reborn



Leo Sampson Goolden is a self-described boatbuilder, sailor, and writer from Bristol, England. But these days, he's living in the Pacific Northwest on the Olympic Peninsula, rebuilding *Tally Ho*, a 1910 gaff cutter that won the Fastnet race in 1927. He's been working on the project for the past two-and-a-half years and has captured all the adventure on video—64 episodes and counting as we go to print. I (along with 146,000 subscribers) am hooked.

And that's a weird thing because I'm not an old-wood-boat guy, not even close. If you asked me, I'd have told you my interest in this channel would be nil. I've thumbed through *Woodenboat* magazine, and I've drooled over a restored J-Boat (*Endeavour*), but that's really the extent of my wood-boat interest—until I discovered the Sampson Boat Co. YouTube channel. I can't stop watching. Goolden is a fantastic narrator and personality, and the production value of the videos is exceptional (and has improved with each episode).

The project is of epic proportion and watching Goolden work, I'm in awe of his stamina. Because he's not just getting this little ship built; he's entertaining and sharp and philosophical while he gets this little ship built. It's educational; among other things, I recently learned from Goolden what an adze is (check out episode #59).

To watch, go to youtube.com and search "Tally Ho" or "Sampson Boat Co."



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The Next One

BY MICHAEL ROBERTSON

o you miss living on a sailboat?" We traveled to visit extended family over the holidays, and I was asked the question a few times, in some form. The question was small talk that made sense, because for the first time in seven holiday seasons, we were boatless. The boat that had been our home belonged to someone else now.

"No, not so much, it was time."

There was some truth in that answer. Also, I knew it was an answer that would make sense and satisfy, so the conversation could turn. But each time I said the words, my mind went straight to two weeks prior, early December in Mexico, where we took an impromptu trip across the border to bid farewell to our friends, the crew of *Totem*. We caught them at the fuel dock, all ready to cast off in the wee hours the following day.

Stepping aboard, the deck rolled ever-so-slightly and comfortably under my bare feet, the large upper shroud familiar in my hand. My eyes closed. I could have been aboard the boat I no longer owned, and I felt pangs of longing. I missed her and I missed living aboard her.

But practically, it had been time to move ashore and sell the old gal when we did, and I don't have any regrets. That's the truth in my answer. My kids have spent the bulk of their lives as sailing vagabonds, and my oldest daughter was ready for a change. I'd taken on this role as editor, and while it's possible to do this full-time job from aboard a 39-foot boat sailing the Pacific, it's impossible to do this full-time job and enjoy all the fruits of living aboard a 39-foot boat sailing the Pacific.

But still. To most family and friends and acquaintances, we're the only sailors they know. For more than a decade, it's been who we are, first as the family with the crazy plans to sell everything and move onto a sailboat, and then as the family that lives on a boat and is always visiting from exotic

was our identity. Leaving the boat behind meant we needed new short answers for who we are. "I live on a boat and travel," had been easy. It begged questions for which I had pat answers guaranteed to impress. I rarely had to explain or define myself further. It was my skin and it was comfortable. Our sailing lifestyle was the why of everything.

places. That boat life

Now I've molted, and I'm just another guy who lives in a house, with a wife, with kids in school. I'm boatless. And that's okay.

Thankfully, I haven't had to fall back on, "I used to live on a sailboat, exploring the Pacific." I'm too busy for that. Our challenge was to find lives ashore that provoked our interests and passions, replaced the uniqueness and vibrancy that characterized our lives afloat. We succeeded.

The pangs of longing I feel for the boat we left behind just means that we did it right, seven years on a tiny private island with my family. The beauty and magic of that, especially in retrospect, is something I'll always be grateful for.

And it's the reason we'll have another boat, someday. It'll be our fourth. I'm already yearning for the good times she promises. And at some future holiday gathering, the question will come: "I heard you bought another boat."

"Yeah, it was time."

Nine years ago, the Robertsons woke from the American dream and took off to sail full time. Now they've found a desertscape near the sea to make their home.





Babies and Bathwater, Boatyard Magic, and an Unsung Multihull Pioneer

Going Astray?

I subscribe to a number of the sailing magazines—*Sail, Sailing, Coastal Cruising,* and *Practical Sailor*—but *Good Old Boat* has always been my favorite because it has always seemed to live up to its long-running tagline, which I always interpreted as referring to middle-class sailors. I am hoping that the changes I am seeing in the January 2020 issue are not a sign of things to come.

I'll start with the "Inspiring Hands-On Sailors" tagline. To my mind, this de-differentiates *Good Old Boat* from its competitors. "The Sailing Magazine for the Rest of Us" made me feel part of a community. "Inspiring Hands-On Sailors" doesn't really tell me anything. Anyone interested in sailing is a hands-on sailor; unless you have a paid captain and crew.

The Websightings column, "Buy a Columbia 50," also struck me as off-brand. What exactly is this? Is it a paid advertisement or editorial? An article on the history or care of a Columbia 50 would seem very on-brand, but a promotional piece to drum up interest in a re-boot doesn't. Also, at \$335K, the boat seems about out of range of the *Good Old Boat* readership.

I don't have any agenda, only a wish to share my thoughts as a fan of the old *Good Old Boat* magazine. I thought the editorial was always excellent, and I loved the folksy writing. I hope that in making the changes you need to make you don't throw the baby out with the bathwater.

I don't want you to write me back. I'd rather you spent the time on the magazine! —Peter Nesbett, Washington, D.C

Michael Robertson responds: Peter, I sincerely appreciate your letter. I can't help but write back to assure you that nothing material has changed here at Good Old Boat; that's the point I tried to make in my editorial in the same issue, "The Rule of Three." Our goal for the new tagline is to convey a more tangible message that reinforces the community we've built, not align ourselves with other magazines. The fact is, we've always sought to inspire hands-on sailors

and we aim to keep doing so. We who make Good Old Boat have owned many boats and have always been hands-on in our approach to maintaining, improving, and sailing our boats.

I appreciate your perspective on the Columbia 50 story in Websightings. I can assure you it was not a paid advertisement or promo piece for anyone-I'm sure the folks at Columbia Yachts were surprised to see it, assuming they've seen it. For the past couple of years, Websightings has been the place where I share things *I uncover online that I think* readers will be interested in. because I'm interested in them. I find what Columbia is doing fascinating and wondered aloud why others aren't doing the same. (This happens in the auto world, where they take old cars and restore and modify them with a current engine, suspension, and brakes such that the car still looks old on the outside, but is all new under the skin—they call it restomod. Check out what Singer is doing with old Porsches: singervehicledesign.com). Wouldn't vou rather have a modern-working, like-new 1980 Catalina 30 than a 2019 Catalina 315 that is indistinguishable from all the new sisterships from all the other sailboat manufacturers? I would. I also found it interesting to learn that Columbia was back in business, and that Dick Valdes' son is the guy at the helm. I was excited to learn that at least one example of this gorgeous good old boat is being saved.

This cautionary buoy marks the entrance to the harbor at Victoria, British Columbia, on Vancouver Island. The harbor entrance is also a very active runway, and boats motor in parallel to large commercial seaplane traffic. That's the control tower on the right.

Got great shot of an unusual aid to navigation? Send it to Michael_r@ goodoldboat.com. If we use it here, we'll send you a *Good Old Boat* hat or shirt!





Last April, during a sunset while anchored off Allen's Cay in the northern Exumas, Bahamas, Carolyn Del Guercio grabbed her iPhone to capture her view from atop the pulpit of *Andiamo*, a 1989 Brewer 44 she and her husband own. For four days, they snorkeled with a hammerhead shark and strolled the beaches with iguanas.

We didn't make the design changes you see because we had to, we made them because we wanted to—and I can assure you they are a sign of things to come. And we couldn't be more excited. There's no baby being thrown out with the bathwater, there's no change to our editorial focus or mission. We are still, and always will be, a group of sailors making the magazine we want to read, for the rest of us. And if the content between our covers ever fails to inform, inspire, and entertain, for you or for anyone, I welcome constructive feedback.

Pudgy Pic

Beautiful shot of a beautiful boat on the cover of the November 2019 issue. Just curious what kind of dinghy you have. Looks like a cross between lifeboat, RIB, and yellow submarine.

—Paul Skene, Gatineau, Quebec

Michael Robertson responds:

Thanks Paul, it's a Portland Pudgy, built up in Maine and definitely a cross between a dinghy and a lifeboat—and we used it for both...rather, we used it as a dinghy, but we were prepared to use it as a lifeboat. She served our needs for over six years, never let us down. Unfortunately, she and the boat she's hanging from are no longer ours, not since 164 days ago (but who's counting?).

Dream Realized

I grew up in the Netherlands cruising with my father on a good old boat that he still owns. My move to the United States over 30 years ago put me in places that were landlocked. Luckily, I married Geri, a woman who had never sailed but who fell in love with sailing. We had kids who sailed a bit, but none of them ever inherited my bug. My hopes of ever owning my own cruising boat were diminishing every year until I started reading your magazine. Good Old Boat stoked the fire with every issue. This summer, having finished helping both our kids through college, we stumbled onto a blue 1993 Catalina 30TR. I wasn't so sure we should make the financial plunge, but my father reminded me that I wasn't getting any younger, and my wife convinced me that it was our time. The final push came when another Good Old Boat showed up with yet another beautiful boat on the cover! Since this summer, we have been the proud owners of Blue Shire and are enjoying every minute aboard her, sailing on Lake Erie. Keep up the great work, your magazine helps dreams come true!

-Thomas Huygen, Grove City, Ohio

Affordable Sailing

I just finished reading the November issue, going in the conventional direction, front to back, for a change. And right there at the end of the magazine was the revelation: This really is a golden age for inexpensive sailing fun! The classified ads were full of cool boats for almost any sailor, most very reasonably priced. Most good old boats are fiberglass and if they are maintained can last a very long time. My own Seafarer is 58 years old and my Cal 20 is 52. This longevity and low resale value are blessings for anybody who wants to sail on a budget. Anybody who wants to invest more sweat and less equity can find a neglected vessel at a giveaway price in the back corner of a boatyard.

—Chris Campbell, Traverse City, Michigan

Chris, since the 1960s, more fiberglass boats have been built each year than have been lost to the seabed or to the crusher (or to coastal marinas that have been known to empty the tanks of derelict boats and scuttle them in the dead of night to free up slip space for paying tenants). Law of supply and demand means that there has never been a better time in human history for an eager-to-sail young person of modest means to acquire their own boat, and even to voyage long distances. In our 20s, we sailed our \$8,000 Newport 27 from California to Florida via the Panama Canal. While crossing the Pacific in our 40s, we met many young people, from French Polynesia to Fiji, sailing under-\$10,000 good old boatsincluding Good Old Boat contributing editors Fiona McGlynn and Robin Urquhart. It's a beautiful thing.

-Editors

Missing Jeremy

I was very moved by your touching tribute to *Good Old Boat* senior editor Jeremy McGeary. Your words helped me understand what a loss this has been for all of us in the sailing community.

–Bob Allenick, Beachwood, Ohio

continued on page 52

We Want to Hear from You

Send your letters to michael_r@ goodoldboat.com. If we can't run your letter in this space, we'll try and get it into *The Dogwatch*. Speaking of which, are you getting *The Dogwatch* in your email inbox? It's free and the content is original. If you're missing it, email brenda@goodoldboat.com.

Gulfstar 39 Sailmaster Mk II

A Raised-Saloon Cruiser for Two

BY GREGG NESTOR

F or 14 years, Rosie and Carl Anderson sailed their Bombay Clipper 31 throughout the coastal waters of western Florida. But after an extended trip from Florida to Maine and back, their cruising dreams grew. To fulfill them, they realized they needed a larger boat, one designed with a cruising couple in mind. They chose a Gulfstar 39 Sailmaster, naming her *The Glass Slipper*, with an eye toward the boat's unusual, innovative interior layout and easy sailhandling.

History

After leaving Columbia Yachts, Vince Lazzara spent the next several years of his non-compete agreement building fiberglass houseboats under the company name of Sea Rover. Once the agreement expired, he sold Sea Rover and established Gulfstar Yachts in the Tampa Bay area. His initial offerings were low-priced, lower-quality boats. This changed after contracting Ted Hood to design a number of models. Quality improved dramatically, and the product line expanded to include motorsailers. In the mid-1980s, Vince's sons, Richard and Brad, joined the company. Though they tended to gravitate toward powerboats, Richard taught himself yacht design and drew the lines of the 39 Sailmaster. Over a production run from 1981 to 1984, the company produced 60 hulls; *The Glass Slipper* is hull 59. Around 1987, Gulfstar ceased production of sailboats and merged with Viking Yachts, a powerboat manufacturer.

Design and Construction

The most noticeable feature of the Gulfstar 39 Sailmaster's distinguished profile is its raised saloon. The boat's bow is sharp, the transom almost plumb, and its sheer very flat. Overall, the lines are clean and sleek. The interior is sometimes referred to as a single-stateroom design or a galley-forward design. Both descriptions are accurate and somewhat unusual for a beamy 39-footer.

Gulfstar built the 39 Sailmaster in two versions. The Mark I has a deep cockpit locker on the port side and a spirits locker on the starboard side, just aft of the head compartment. The Mark II replaced the port-side deep locker with a shallow locker

Despite the raked bow and counter transom—popular design features during the 1970s and '80s—the raised saloon and large windows create a contemporary look.





and a quarter berth below and swapped the spirits locker for a hanging locker.

Construction of the Gulfstar 39 Sailmaster is strong and of high quality. The deck and hull are fiberglass and polyester laminates. The deck and topsides are cored with end-grain balsa, adding stiffness while reducing weight. Below the waterline, the hull is solid fiberglass. (Many boats built in the 1980s experienced blisters, and Gulfstars were not immune. It's wise to carefully check this when buying one.)

On deck, the non-skid is molded-in, and all exterior wood—including eyebrows, handrails, toerails, companionway doors, and cockpit coaming tops—are solid teak. The hull-to-deck joint is an overlapping design commonly known as a shoebox joint.

The interior is stick-built and utilizes a longitudinal stringer system. The bulk of the interior is marine-grade plywood veneered with teak and finished with gloss varnish. Areas not finished in teak are paneled with an off-white laminate. The overhead is off-white vinyl, the sole is teak and holly, and the doors are raised panels of solid teak.

Joinery rivals that of the most expensive yachts. Gulfstar even held a patent for a special process for cambering the corners on interior woodwork.

Hardware is above average quality. All ports and hatches are aluminum, seacocks are bronze, and the ballast is lead and encapsulated.

On Deck

Beginning at the stem is a teak anchor platform followed by a pair of 12-inch open-throat cleats, chocks, and a windlass. The open foredeck allows a pragmatic, uncluttered working platform



The foredeck is relatively uncluttered. A deck pipe (forward) and a horizontal windlass with a spill pipe both lead below to a divided chain locker in the forepeak.

for sail changes, anchoring, and mooring. There's even enough room here to stow a dinghy.

Just aft of the cabin trunk's rise is a 24 x 24-inch centerline hatch. Following aft are port and starboard 63-inch teak handrails. Next is a pair of stainless steel cowl vents mounted on top of teak Dorade boxes. In the topsides below this area are four opening portlights, two per side. Just before the doghouse over the raised saloon is the keel-stepped mast.

The large cockpit has high backrests, a raised helmsman seat, and ample room for entertaining. The Andersons have added an array of up-to-date electronics on the pedestal.



On top of the raised saloon's doghouse is a pair of 12 x 17-inch hatches, twin 76-inch teak handrails, the mainsheet traveler, and a sea hood over the companionway. The doghouse is fitted with six large, fixed portlights, three per side, plus a pair of large forward-facing fixed portlights.

For security, stainless steel bow and stern pulpits are connected by dual lifelines. The sidedecks are 18 inches wide and rimmed with a 3-inch-high teak toerail. Port and starboard 10-inch, openthroat cleats are mounted amidships. To protect the topsides, 8 inches below the deck is a teak rubrail capped with a stainless steel strip.

The roomy cockpit is 7 feet long with slightly sloping coamings and a 3-foot-wide footwell. A 16-inch-deep by 16-inch-high bridge deck deflects most water coming over the deck, and four 2-inch drains, one in each corner of the footwell, disperse any water that does make it into the cockpit. Stowage consists of a dedicated propane locker beneath the helmsman's seat and a pair of cockpit seat lockers. With a quarter berth beneath (on the Mark II), the port locker is shallow. The deep starboard locker affords access to the boat's batteries and engine. In addition to the helm pedestal, there's a centerline swim ladder and a pair of 10-inch cleats.

Below Deck

While the Gulfstar 39 Sailmaster's interior at first seems typical, once below its novel arrangement becomes quite apparent. The boat's forward sections—V-berth, head, and galley—are lower than the main saloon. The forward galley is unusual, and the raised saloon, coupled with large side- and forward-facing



The starboard settee measures 6 feet 6 inches, and in the configuration above includes a bookshelf behind it. Above right, it's converted to a berth, and the shelf area behind becomes a pilot berth. Both make good sea berths with leecloths.

the berth. Port and starboard

opening portlights, the large

vent provide natural light

and ventilation. From this

stateroom, one door leads

to the head compartment

and another opens to the

remainder of the interior.

Just aft and to starboard is

Aft to port, basically across

the head compartment whose

most notable feature is a one-

piece fiberglass shower stall

from the head, is the roomy

galley, which includes a deep,

double, stainless steel sink, a

top-loading icebox, and a pass-

over counter that lets the chef

hand food and drink directly to

On The Glass Slipper, the

outboard cabinets are a custom

with integrated seat.

those in the saloon.

overhead hatch, and a Dorade

windows, makes for a light and

According to Carl, the

boat features several factory

options, to which he recently

added \$25,000 in interior and

system upgrades, including

new refrigeration, air condi-

Just aft of the divided

chain locker in the forepeak

fiddled shelves. Aft and to port,

a his-and-hers hanging locker

is topped with a bureau, and to

starboard is a complementing

four-drawer chest with bureau

stowage drawers, are beneath

top. The 30-gallon plastic

holding tank, plus three

is a roomy V-berth, 7 feet long and $6\frac{1}{2}$ feet at its widest.

Outboard and above are

interior woodwork.

tioning, battery charger, starter,

batteries, and refinishing all the

spacious-feeling interior.



factory option. Stowage is abundant in numerous shelves, drawers, and cubbies, and a clever in-the-sole compartment sits in the step-up to the saloon. At waist height there's a novel grab rail/towel rack. A single opening portlight serves this area.

The main portion of the saloon is comprised of an L-shaped settee/berth to port and a straight settee/berth to starboard. Both settees measure $6\frac{1}{2}$ feet and can be converted to cozy doubles. Both have stowage beneath and behind as well as bookshelves above. In addition to the shelves above the port settee there's also a cane-fronted cabinet.

The eight large, fixed

portlights and two overhead hatches create a bright and airy cabin. However, leaking in these portlights is one of the most common complaints among this design's owners. It's recommended to rebed them before leaks damage the interior teak.

Numerous LED lights, both task and accent, provide illumination throughout the boat.

On the port side of the Mark II, across from the nav station to starboard, is a quarter berth. Beneath is stowage as well as the water heater. Access to the engine can be gained here by removing an inside panel.

Six individual panels in the sole provide access to

Looking forward from the companionway, the offset table enables clear passage in the main saloon. Though not visible, the galley is forward of the settee on the port side, an unusual location, below left.



To port in the saloon is an L-shaped settee and slightly offset drop-leaf pedestal table. Just aft, in the Mark II version, is the quarter berth, below.





Gulfstar 39 Sailmaster Mk II

| LOA | 39'7" |
|----------------|-------------|
| LWL | 32'5" |
| Beam | 12'1" |
| Draft | 4'9" |
| Displacement | 19,000 lb |
| Ballast | 8,200 lb |
| Sail Area | 684 sq. ft. |
| Displ./LOA | 249 |
| SA/Displ. | 15.4 |
| Ballast/Displ. | 43 |
| | |

various bilge features, including the 80-gallon aluminum fuel tank and the 150-gallon plastic water tank, located above the ballast.

Rig

The Gulfstar 39 Sailmaster's rig is simple and straightforward. The keel-stepped mast, with outboard chainplates and boom, are aluminum extrusions painted white with polyurethane. The single pair of spreaders is tapered, and all standing rigging is stainless steel wire. Supporting the mast are a pair of cap shrouds, dual pair of lowers, and a split backstay. There's also a topping lift.

All running rigging is double-braid polyester line. The halvards are sheaved internally and terminate at a pair of Barient #21 winches

and horn cleats mounted on the mast. The mainsail is sheeted mid-boom and leads through a traveler situated forward of the companionway, terminating at a Barient #21 winch and cleat. On the underside of the boom, just aft of the gooseneck, is a single Barient #8P and a pair of line stoppers for two reefing lines.

The headsail sheets are led aft through cars and 12-foot tracks mounted on top of the toerails. These sheets terminate at Barient #28 winches on the cockpit coamings. Mounted onto the starboard track is a stainless steel folding boarding ladder.

Underway

The boat has a long fin keel, which affords the kind of tracking and stability commonly attributed to a full keel but

(top to bottom) The commodious head features pressure water at the sink and shower stall, nicely executed wood trim, and adequate ventilation. In addition to LED lighting, there's an opening portlight and a Dorade vent. A second door leads to the galley and saloon.

Across from the head and extending aft 8 feet is the L-shaped galley. Features include a Formica countertop with a large top-loading icebox; two-burner, gimbaled, propane stove with oven; and a double stainless steel sink with hot-and-cold pressurized water.

Aft of the saloon and on the starboard side is the aft-facing navigation station with its dedicated swivel chair. In addition to the boat's electrical panels, there's a small space for instrumentation, a shelf, and a large work surface.

By removing the companionway ladder and the housing beneath, one gains nearly full access to the engine. For a quick peek and to conduct some minor service, there's a section of the navigation station's counter that lifts up.







without as much drag-inducing wetted surface area. Its rudder skeg provides excellent directional stability and keeps the rudder from stalling at extreme angles.

The outboard chainplates affect the boat's upwind abilities by limiting sheeting angles, but this boat is designed for cruising first and foremost, not necessarily performance to weather. It can carry its full complement of sails up to about 20 knots or so before calling for a reef. The boat's best point of sail is a reach, and the helm balances well.

The boat's auxiliary is a 50-horsepower Perkins 4-108 diesel with a Velvet Drive transmission connected to its propeller via a V-drive. This drive train is more than adequate to punch through a tough sea.

The Glass Slipper suffered from leaking at the rudder shaft seal. The fiberglass housing around the shaft is too short, and depending upon angle of heel, this design mistake allows water to enter the boat. Carl heightened the housing and eliminated the leak.

Conclusion

The Gulfstream 39 Sailmaster is a unique and comfortable sailboat that can be sailed or comfortably cruised by two people. She's well built, well laid-out, wonderfully appointed, and sails well. Her styling is not dated, and with 60 hulls built, there's a good chance that a couple are on the market at any given time. Expect to pay \$50,000-\$80,000 for a good one.

Gregg Nestor is a contributing editor with Good Old Boat. He has authored four books on sailing: Twenty Affordable Sailboats to Take You Anywhere, Twenty Comfortable Sailboats to Take You Cruising, The Trailer Sailer Owner's Manual, and All Hands on Deck. He became a snowbird a few years back, after relocating his boat from the Great Lakes to Florida.

Comments from Owners of the Gulfstar 39 Sailmaster

A dream to sail. It's not a great race boat, but it is heavy like a bluewater boat. Overbuilt to the extreme. The construction was top-notch. We did have some blisters and a soft spot on the deck that was due to the leaky windows. Look at the inside wood. Make sure the windows have not leaked and ruined it. I wish there was a second bunk. The water tanks and fuel tanks most likely need to be opened and cleaned. We added a Racor filter. The water tank screws go lefty-tighty, righty-loosey. No idea why they did that, as this is a horrible way to do things.

—Derek Fronabarger Annapolis, Maryland

Excellent all around. Sails well on all points, especially in heavy weather. Stable, hardens up. Fine also in light air. Top-quality hardware and wood workmanship. What I like most: open, roomy galley and saloon. Nice size head with walk-in shower. Small but adequate V-berth. Nice size cockpit. Large water tanks. What I like least: hull fiberglass layup issues—water saturation. Inadequate fridge insulation. Difficult to go astern.

> -Robert Olshan Lottsburg, Virginia

She sails like a dream! Responsive, well-balanced. In 10- to 15-knot winds

we can put out the genoa alone and average 6-6.5 knots for an easy sail. The mainsail is heavy and takes some effort raising. The boat is solidly constructed and our bilge is dry. The interior craftsmanship on the wood detail is fabulous. She is very spacious and open feeling. We had a party where 12 friends were dancing in the saloon! The Garhauer tackle is top-notch. The top three things we like most: her design/look/line; the spacious layout on the interior; and most importantly, the quality of the build. Least: storage is limited; the windows leak, and the aluminum frames are etched from the elements; the windows are big for being at sea. The aluminum rubrail was streaking the hull. We removed the stainless steel trim on top to uncover a thin, disintegrating sheet of plastic between the stainless steel trim and aluminum rubrail. The two dissimilar metals were reacting. The aluminum rubrail was pitted so badly we removed it. The blackwater holding tank is under the bed-holding tanks do permeate! We had two through hulls replaced for the cockpit/deck drains. At 36 years old, they were scary thin. Access underneath the cockpit is a challenge. The back of the electrical panel is in the starboard lazarette. All of the wiring is uncovered. Our rudder shoe is rusting from age.

> —Krissy Nichols San Diego, California

Great sailing quality, easy helm, comfortable interior with adequate storage, roomy V-berth and head with separate, large shower stall. Good ventilation with hatches and opening ports. The large portlights leaked when the boat was sailed hard, and space behind the steering wheel was tight. Specific problems: the V-drive was on top of the stuffing box with little room to service; the raw water pump was difficult to service with the engine facing aft; and the rudder post leaked seawater into the bilge and lazarette. Check the rudder post for leaks, 108 Perkins diesels are known to have a problem with rear seal leaks, and check the V-drive for oil leaks.

> -William Misenheimer Fort Myers, Florida

The main reasons we chose the Gulfstar Sailmaster 39 over 30 years ago are how it performs and how it is laid out. The forward galley has been perfect for us since we don't do much cooking "at sea" and it allows for a very open saloon. We had a full blister repair with epoxy coat in '87. Another issue for us was chainplate leaks, which got into the deck core because the core had not been cut away far enough and glassed, surrounding the chainplate penetration slot.

> ---Cameron Foster Bainbridge Island, Washington

Gulfstar 39 Sailmaster MkII

... and Two More Bright, Solid Cruising Performers

STORY AND ILLUSTRATIONS BY ROB MAZZA

he late powerboat designer Tom Fexas once published a provocative article entitled "Sailing Is Silly" in which, among other digs at sailors and sailboats, he snarked that "the inhabitants of this vessel must live, eat, and sleep in a dark, narrow cave in the water." These three boats attempt to address that criticism by raising the aft end of the house and the cabin sole to incorporate enlarged windows at sitting and eye level. Combined with the windows located forward in the raised house, these provide a nearly 360-degree vista and bring in far more light than in Fexas' maligned caves.

When I worked at Hunter, we employed half of this concept in boats like the Legend 40.5 by raising the house aft (but not the sole) to allow more light below, while incorporating faux windshields at such a low angle that they were more like skylights. Raising the cabin sole also means that the cockpit and interior soles are closer to the same level, so you are not descending into Fexas' cave as much, and the raised interior sole allows the placement of the engine in this more accessible and larger space.

A modest increase in height at the aft end of the house, for better headroom in an aft galley more than anything else, used to be called a doghouse. The degree to which you go beyond the modest increase of the doghouse defines the difference between a raised-saloon configuration as in the Dick Lazzara-designed Gulfstar 39 and the Bob Perry designed Mariner 39, and a true pilothouse configuration in the later Bill Crealock-designed Pacific Seacraft Pilothouse (PH) 40.

Interior steering also differentiates the raised-saloon from the pilothouse configuration. The Pacific Seacraft has a clever inside helm station that integrates with the chart table and the navigation area. Neither the Gulfstar nor the Mariner shows any option for an inside steering station. The raised house in both configurations impedes visibility from



Gulfstar 39 Sailmaster

Mariner 39

Pacific Seacraft PH 40

| LOA | 39'7" | 38'10" | 42'3" | |
|------------------|-----------------|--------------------|------------------|--|
| LWL | 32'5" | 34'4" | 31'3" | |
| Beam | 12'1" | 11'10" | 12'5" | |
| Draft | 4'9" | 6'0" | 6'1" | |
| Displacement | 19,000 | 19,200 | 24,500 | |
| Ballast | 8,200 | 8,400 | 8,800 | |
| LOA/LWL | 1.22 | 1.13 | 1.35 | |
| Beam/LWL | .37 | .34 | .40 | |
| Displ./LWL | 249 | 212 | 358 | |
| Bal./Displ. | 43% | 44% | 36% | |
| Sail Area (100%) | 684 | 722 | 834 | |
| SA/Displ. | 15.4 | 16.08 | 15.79 | |
| Capsize No. | 1.8 | 1.8 | 1.7 | |
| Comfort Ratio | 30.8 | 31 | 38.3 | |
| Year Introduced | 1981 | 1981 | 1997 | |
| Designer | Richard Lazzara | Bob Perry | William Crealock | |
| Builder | Gulfstar Yachts | Ta Shing Shipyards | Pacific Seacraft | |

a cockpit helm station, but the taller pilothouse, of course, most of all.

All three of these boats incorporate modern underbodies of split keel and rudder, although each also incorporates a skeg-mounted rudder rather than a cantilevered spade rudder, reflecting a slight nod to cruising aspirations. Only the Pacific Seacraft, however, houses the propeller in an aperture in the skeg for increased protection.

When you look at the numbers, note that the Mariner 39 has a waterline length of 34 feet 4 inches, which is almost a full 2 feet longer than the Gulfstar and 3 feet longer than the Pacific Seacraft. I sometimes approach these numbers with some skepticism, knowing that artificially

stretching the published waterline length produces a lower displacement/waterline length and enhances the aura of higher performance. This artificial increase is often achieved by including the skeg and even the rudder in this measurement. Just how fungible these numbers can be is evident when you learn that Bob Perry's Mariner 39 started life as the Westsail 39, whose waterline length is listed at 36 feet 6 inchesalmost 2 feet longer than the published value for Mariner 39, which is supposed to be exactly the same boat!

Using the waterline lengths of 32 feet 5 inches, 34 feet 4 inches, and 31 feet 3 inches against displacements of 19,000 pounds, 19,200 pounds, and 24,500 pounds, respectively, for the Gulfstar, Mariner, and Pacific Seacraft, we find a displacement/ waterline length ratio of a competitive 249 for the Gulfstar, an even more competitive 212 for the Mariner, and a more conservative, (and expected) 358 for the Pacific Seacraft.

Each of these boats employs almost identical sail plans with two headsails on a masthead cutter rig with mid-boom sheeting. Sail area/displacement ratios are consistent and moderately conservative at 15.4 for the Gulfstar, 16.08 for the Mariner, and 15.79 for the Pacific Seacraft, the latter reflecting a larger sail plan with a bowsprit on a heavier displacement. The higher sail area/displacement ratio and lower displacement/ waterline length ratio of the Mariner clearly ranks her as the more performance-oriented of the three designs. All three have acceptable capsize numbers and good comfort ratios.

The raised-saloon and pilothouse concepts certainly provide an interior that invites more use and creates distinctly non-cave-like comfort, especially on chilly or rainy days. However, there is nothing in the numbers to indicate that sailing performance will suffer accordingly.

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

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TAKING CHARGE

Knowing battery basics and technologies empowers battery choices.

BY DREW FRYE

board any boat with an electrical system there exists a need to store electricity. Enter the battery. But unfortunately (or fortunately), a battery just isn't a battery, and choosing the type of battery that's right for you, for your electrical system, and for the way you use your boat, requires an understanding of the different types of batteries on the market today and the advantages and drawbacks of each.

Without delving too deeply into the fine points of battery chemistry or reviewing differences in manufactured quality, following is some information and explanation to help navigate the battery waters.

Batteries 101

Lead alloy plates combined with a sulfuric acid/water electrolyte form the basis of the most common type of rechargeable battery in use today (and for the past 100 years): the lead acid battery. But variations of the lead acid battery have come about as engineers have worked to overcome the chemistry's most common shortcomings. Accordingly, today there are several subsets of lead acid batteries: the traditional flooded lead acid battery, the AGM (absorbed glass mat) battery, the gelled electrolyte (or gel) battery, and, most recently, the carbon foam battery.

The other battery type on the market today—lithium iron phosphate, or LiFe-PO4—uses an entirely different chemistry.

All battery types offer significant advantages and disadvantages for the boater. Before learning about the pros and cons of each, it's important to first take a minute to understand two problems inherent to lead acid batteries: sulfation and stratification.

As a battery discharges, small sulfate crystals form. During the next charging cycle, these crystals dissolve back into the acid electrolyte. This process is normal. However, if the charging cycle that follows a discharge cycle is not complete (common when a boat is away from shorepower) only some crystals dissolve, and those that remain can harden and become permanent. With subsequent partial charging cycles, the condition worsens. This is called sulfation. Ultimately, sulfation decreases the amount of chemical available for the necessary reaction and the amount of surface area on the lead plates for that reaction to occur, thus limiting the battery capacity.

Stratification is the tendency for the denser high-sulfate electrolyte (in a water-acid mixture inside a battery) to concentrate near the bottom of the battery as a result of gravity and lack of mixing. Stratification can exacerbate sulfation. Both problems can be addressed with a procedure called equalization; see "All Things Being Equal" beginning on page 22.

Regardless of sulfation and stratification, every cycle causes some wear to a lead acid battery, the severity of which depends on the depth of discharge, time to the next recharge, thoroughness of the next recharge, design category of the battery, and manufacturer quality and design details.

Batteries are also slowly damaged by corrosion on the lead plates. Overcharging is a primary culprit, but no matter how carefully the battery is maintained, every battery design has a finite life, after which the plates will simply fall apart. For boats that spend a few nights at anchor, and for starting batteries, internal corrosion is often the limiting factor.

Finally, any battery type can be wrecked by misuse or poor maintenance. All leadtype batteries can be ruined by being left fully discharged for a few months. All it takes is a small load that is overlooked and no charging source to compensate. Overcharging increases corrosion and can boil out the electrolyte. Lithium batteries can be ruined by overcharging or charging at subfreezing temperatures. Premium batteries will only deliver full value if maintained properly.

With a general understanding of the inherent problems that afflict batteries, let's take a closer look at considerations for each battery type.



Flooded Lead Acid (FLA) Batteries

These are the traditional electron-storage workhorses of cars, trucks, planes, and boats. They come in different sizes, usually the bigger the battery the more energy it stores. They come in 6-volt and 12-volt configurations, with thin lead plates (starter batteries) and thicker lead plates (deep cycle batteries), sealed and maintenance-free, or with caps that allow for lost battery acid to be replenished.

Negatives:

• The deeper a flooded lead acid battery is discharged (reflected as a percentage of total capacity in amp hours), the harder it is on a battery. A flooded lead acid battery will tolerate only a finite number of discharges in its life (the deeper, the fewer). For reasonable life expectancy, manufacturers advise that flooded lead acid batteries should not be discharged below 50 percent state of charge (SOC) and then should be fully recharged within a day or so. Practically, this means that only half a battery bank's rated capacity is available for use. If the battery is commonly only 85 percent recharged (the result of a diminishing acceptance rate near the end of the charging cycle) then only one third of rated capacity is available. In other words, up to three times the cost must be spent and three times the weight carried aboard.

- Compared to how quickly they can be discharged, it takes a long time to recharge flooded lead acid batteries. This is because as flooded lead acid battery voltage increases, the charge acceptance rate decreases. So while it's easy to pump a lot of energy into a battery that's been discharged to 50 percent, once the battery returns to about an 80 percent state of charge, the amount of current it will accept drops considerably. After about 95 percent, the current acceptance rate drops even more. So, it may take nearly as long to charge from 95 percent charge to 100 percent as it did to bulk charge from 50 percent to 95 percent. Is it any wonder that boats untethered from shorepower often fail to fully recharge, thus increasing sulfation and reducing battery life?
- A traditional marine battery requires maintenance. This includes routinely replenishing water, keeping the terminal connections clean and corrosion-free, and regularly equalizing to minimize the effects of sulfation and stratification.
- Batteries built with lead are heavy. Aside from the drawbacks of concentrating weight aboard, they need to be sturdily and firmly secured aboard a vessel that rolls, pitches, and could possibly invert.
- Flooded batteries produce oxygen and hydrogen when being charged, so they need adequate ventilation where they are installed.
- Flooded batteries can spill. Battery boxes must be able to contain spilled acid. They should not be located near or below equipment that is vulnerable to corrosion.
- Efficiency and capacity will diminish as the battery ages.

Positives:

- A well-built, deep cycle flooded lead acid battery is rugged, widely available, and relatively inexpensive.
- You can expect a lifespan of 200-600 cycles from a run-of-the-mill deep cycle battery, or as many as 2,000 cycles from a well-maintained golf cart battery, such as the popular Trojan T-105s. Starting with a large enough battery bank and creating an environment in which it isn't discharged too deeply, is regularly returned to a full charge, and is maintained properly can go a long way to stretching the lifespan of a flooded lead acid battery. The 50 percent maximum discharge is a fuzzy number. A large bank that is recharged at only 20-30 percent discharge will last longer, be twice as heavy, and cost twice as much. A smaller bank, frequently discharged to 35 percent, might be 30 percent cheaper and lighter, but only lasts one third as long for the full-time cruiser. It also provides less reserve capacity for long nights and eventual loss in capacity. On the other hand, the weekend cruiser might not see a huge difference in lifespan, since the number of cycles is low and the battery will most likely die from either corrosion or a maintenance error rather than high cycles.



Absorbed Glass Mat (AGM)

AGM batteries are lead acid batteries, but instead of lead plates submerged in acid, they're built of lead plates separated by thin fiberglass mats saturated in battery acid. The plates and mats are packed together very tightly, and the battery case is sealed. There are AGM starting batteries and AGM deep cycle batteries. AGM batteries are optimal when they can be quickly and fully recharged: marina hopping, day sailing, and boats with substantial charging resources.

Negatives:

- AGM batteries are particularly vulnerable to sulfation if not brought back to full charge within a day or so (recharge to 80 percent of charge is not sufficient). AGM batteries do not respond as well to equalization as a well-built deep cycle flooded lead acid battery, and some cannot be equalized at all.
- AGM batteries are more expensive than flooded batteries.
- Just as a flooded lead acid battery, these batteries are built with lead and are heavy, with all the issues that weight brings.
- Efficiency and capacity will diminish as the battery ages.

Positives

- Compared to flooded lead acid batteries, AGM batteries accept relatively high recharge currents (they can be charged more quickly) because they have a lower internal resistance.
- AGM batteries are completely sealed and can be mounted in any configuration, even on their sides. In normal use, they don't vent.
- AGM batteries are not as susceptible to stratification.
- Other than equalization for select AGM batteries, and keeping tabs on terminal corrosion, no maintenance is required.



Gelled Electrolyte (Gel)

Gel batteries are constructed similarly to flooded batteries, but with a silica added to the battery acid, turning it to a thick, gelled substance. The best application for gel batteries is a smaller bank that will be cycled deeply and frequently, possibly without the availability of timely recharge.



ILLUSTRATIONS BY FRITZ SEEGERS

Negatives:

- While gel batteries are a bit more resistant to the ill effects of deep discharges, they are less able to recover from sulfation as they cannot be equalized.
- Gel batteries are more expensive than flooded batteries.
- Just as the previous two types, they're heavy.

Positives:

- Gel batteries are highly resistant to stratification.
- Compared to similar flooded or AGM batteries, gel batteries can tolerate a higher number of deep discharge cycles.
- Though efficiency and capacity will diminish with age and use, the effects tend to appear rapidly at the end of a battery's life, rather than gradually over time.
- Gel batteries are completely sealed and can be mounted in any configuration, and in normal use, they don't vent.



Carbon Foam

Firefly International Energy Company holds the patent on this relatively new technology: a lead acid battery in which much of the lead is replaced by a carbon foam material. The construction is similar to AGM batteries but with significant advantages over AGM, gel, and flooded lead acid batteries.

Negatives:

- More expensive than all other lead acid-type batteries. That said, if the advantages are as reported, including longer lifespan, they may warrant the higher price tag. One internet forum commenter called carbon foam batteries the poor-man's lithium batteries.
- The technology has been around for a relatively short period of time, so many claims of longer lifespan (compared to flooded, AGM, and gel batteries) have not been empirically proven aboard many boats.

• Despite the carbon foam material used to replace much of the lead on the negative plates, these batteries are no lighter than conventional AGM batteries, and so have the same weight issues.

Positives:

- The carbon foam material resists corrosion and sulfation and provides a much greater surface area (due to the honeycomb shape of its cells) than the pure lead plates. Accordingly, these batteries are highly resistant to damage from being stored at low charge states.
- Because these batteries tolerate deeper discharges and sustained undercharged states, ostensibly a smaller bank can meet the same power needs,

Battery Sizes-Michael Robertson

At the Annapolis sailboat show this past October, a few of us got to wondering about battery sizes. We each acknowledged that 8D batteries were big, and we could identify them by sight. We agreed that group 27 batteries were just a bit smaller than group 31 batteries, and we could identify them too. But some of us swore that not all group 27 batteries were the same size (nor were all 8D and group 31 batteries the same size) and others of us believed they had to be. A quick search of specific battery dimensions online confirmed that sizes varied. What was going on?

Being at the Annapolis show, I cornered Nigel Calder for the definitive answer. Nigel didn't even have to stop to think: "Group numbers refer to battery sizes and the specific dimensions are specified by Battery Council International." Got it. A quick check online turned up a chart of BCI group numbers. Indeed, for each battery group (there are 81 groups listed!) there are specific length/width/ height dimensions, in millimeters and inches-exact measurements. But we noticed a couple things that explained the variable sizes among manufacturers. First, the BCI dimensions are maximum dimensions. Second, there are so many groups that some of them are broken into subcategories, each with a slightly different dimension. For example, a group 27 battery should measure no more than $12^{1}/_{16} \ge 6^{13}/_{16} \ge 87/_{8}$, but there are group 27F and group 27H dimensions that are slightly different.

meaning less weight and perhaps comparable cost to other AGM options.

- Carbon foam batteries are completely sealed and can be mounted in any configuration, and they don't vent in normal use.
- Carbon foam batteries have less internal resistance than the best conventional AGM batteries and thus accept even higher recharge currents (they can be charged more quickly).
- Carbon foam batteries are not as susceptible to stratification.



Lithium Iron Phosphate (LiFePO₄)

There are many lithium-ion battery chemistries on the market in batteries powering laptops, phones, cars, and more. But this particular chemistry—lithium iron phosphate, first described by researchers at the University of Texas in 1996—offers thermal and chemical stability that is superior to all the others. That means it's safest.

I've received enough glowing reports that it's about time to recommend LiFePO4 for widespread use in high-cycle applications. Heck, Toyota made the switch for their Prius batteries in 2015. However, there are some caveats. Consider a sudden house-bank failure like I faced a few years ago, the result of my misjudging battery health before casting off on a spring cruise. I made a quick phone call to a local chandlery and had a replacement set of group 27 flooded lead acid batteries delivered dockside within hours. Had I been running LiFePO4 batteries at the time, I'd have waited a week and spent thousands. In my case, the bill was a few hundred dollars, replacement took less than an hour, and we were on our way the next day.

good many long-term cruisers, believe they are the most economical long-term solution for heavy-duty users.

Regulation of charging is very different from lead acid. Part of the expense is a complex battery management system (BMS). Because even a slight imbalance between cells can lead to dangerous overheating problems, control systems are built into the consumer-packaged batteries (Battle Born, Lithionics, Mastervolt, Relion, Trojan, Victron, and Valence provide these systems). Marketed to sailors as drop-in replacements, these may not be the best route to go. Lithium batteries are better left slightly below full, but all of the smart chargers on your boat will take them to float and leave them there. To get the full value of rapid charging and long life you will need an integrated management system installed for another \$1,000 to \$1,500, and you will want to

Negatives:

• The first thing that will strike you is the price, at nearly 4 times that of premium lead acid batteries. Even so, their proponents, including a



Manufacture life expectancy versus depth of discharge tables are misleading in two critical ways. First, the test protocol requires that the batteries are fully recharged after each cycle, a practice that extends the life of lead-acid batteries by minimizing sulfation. In the real world of the cruiser, getting back to 85 percent charge is good, and sulfation will progress faster than the charts suggest.

Second, battery life always declines with age and the corrosion that goes with it, no matter how well a battery is cared for. If you start with a bank sized with 30-40 percent average discharge in mind, with occasional dips to 50-60 percent discharge, within a few years that will become 40-50 percent average discharge with occasional dips to 70 percent discharge. That's workable. On the other hand, if you designed the bank for 40-50 percent average discharge, that will soon be 60-70 percent discharge with dips to 80 percent discharge, and the bank will be spent in just a few years. Design conservatively with aging in mind. Only a racer will be happy with cutting it thin.



Lifeline, a pioneer in AGM technology, was developed in 1985 for military aircraft. Lifeline's series of maintenance free deep cycle batteries has been the leading AGM battery in the Marine and Motor Coach industry for the past 15 years. To learn more about Lifeline Batteries, contact us or visit LifelineBatteries.com



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- I recommend having a good talk with a lithium battery specialist before buying any drop-in system as a replacement for an existing lead acid battery bank, because they aren't the same thing. Do not buy naked cells (without a built-in BMS) off the internet and try to build your own system; this is a good route to either short battery life or a fire. Carbon foam has some similarities (fast charging, partial state of charge tolerance) and is generally a better drop-in replacement for FLA for most sailors, particularly if weight is not critical.
- Cold weather charging is a potential Achilles' heel. Lithium batteries can be permanently and severely damaged by just a few charging cycles at near-freezing temperatures. If the battery can be disconnected for winter storage, self-discharge rates are very low and the battery should be fine in the spring. However, if the battery must be kept online because of sump pump demands, the situation gets hairy. It's simple enough to provide charging through shorepower or solar panels, but the controller must disable charging below about 40° F and disconnect the battery from the load. I find this a little frightening for boats stored in the water through the winter. The normal solution is installing a lead acid battery to handle sump pump demands. Automobiles with lithium batteries use built-in heaters.

Positives:

- Very low weight compared to lead acid batteries. This difference may be especially appreciated aboard multihulls
- LiFePO4 batteries have an exceptionally long cycle life, they recharge more efficiently, they do not require immediate full recharge, and they deliver more consistent voltage during the discharge cycle.
- Because they operate well at a state of partial charge—in fact, they like it better than being fully charged—a battery bank can be about a third smaller in terms of amp-hours, taking some of the sting out of the price differential.

Weighing the Information

Just as every boat is a compromise, so is every battery type. But which

compromises best align with your anticipated use? Ask yourself how often you foresee sleeping on the hook over the next five years. How much does battery weight matter to you? Will you charge your batteries rapidly with a generator, or will you push the electrons in more gently with solar power? Do you have enough charging capacity to fully recharge the battery within a day or so of a deep discharge? How much reserve capacity do you need? Are you motivated to properly monitor vour battery system and tweak a full life expectancy from a premium product, or do you suspect you'll make mistakes and prefer the premature replacement that doesn't break the bank?

Weight is a good place to start. What is the cost of carrying an extra pound for the life of the battery? It's easy for the heavy cruiser to say that weight and performance are unimportant, but a performance trimaran or planing sport boat will find 100 pounds unacceptable and 50 pounds unpleasant. Reducing weight is likely important for windlass and bow thruster batteries mounted forward.

And if weight is critical, consider that weight can be saved by reducing the size of the battery bank within the same battery type. For example, if you're regularly discharging a lead acid battery below 60 percent state of charge, conventional wisdom would indicate it's time to increase the size of the battery so that its life isn't reduced. How important is this reduction in lifespan? The batteries on a boat that is very seldom anchored out will die of corrosion and old age before the cycle life becomes important. On the other hand, the long-distance cruiser may be irritated when batteries fail within a few years. A racer may not mind dropping in a cheap battery every few years if it saves 100 pounds.

Reserve capacity is also reduced by using a smaller bank. Some battery technologies—principally lithium and carbon foam—better tolerate deep discharges, but if your design basis includes discharging a battery 80 percent, you have sacrificed a safety margin with regard to reserve power availability.

Is your auxiliary an outboard motor with a typical tiny alternator? Don't bother with the complexity and expense of a separate starter battery and house bank. Connect the outboard starter to the house bank. On the odd occasion you inadvertently run the battery flat, use the pull-cord to start the outboard. With one bank, charging and usage are more equal, house bank capacity is increased, and battery life

Starter Batteries Versus Deep Cycle Batteries—Michael Robertson

Flooded lead acid batteries are made with either thin lead plates (starting batteries) or thick lead plates (deep cycle batteries). The thinner the lead plate, the faster power can be released from a battery. For a car battery that delivers a big shot of power to start an engine and then lives in a charged state (getting power from an alternator), a thin-plate starter battery makes sense. But thin plates aren't as robust as thick ones, and they won't tolerate repeated long-period, deep discharges typical for boat at anchor, on which lights, fans, and inverters are used for days with limited charging cycles.

Deep cycle batteries, with thicker plates and more electrolyte, are the flooded lead acid batteries used most often in marine battery banks (as well as in golf carts, electric warehouse forklifts, and industrial equipment). This is because the thicker plates are less susceptible to corrosion (the inevitable process in which lead sloughs off plates over time) and can withstand many more deep-discharge cycles over the battery's lifespan.

Many boats have two battery banks. One contains a starter battery, used strictly to start the engine and then recharged soon after, as in a car. The other is a house bank, comprised of deep cycle batteries used to power lights, radios, inverters, and other things. These two banks should remain isolated from each other, as combining batteries of dissimilar types, sizes, and ages can damage batteries. is improved.

Much is made of the ability of AGMs, Gels, and LiFePO4 to withstand flooding and knockdowns, but how important is that feature? Any battery, regardless of type, must be robustly secured to avoid risk of damage and electrical shorts. And how much does a flooded lead acid battery leak when it's inverted for a short time? The caps will remain in place, and more than a few cars have rolled over without losing more than a few drops. If the boat is flooded to the depth where battery acid is likely to float out of the cells, it will emerge only very slowly, to be diluted by saltwater.

All of these battery types can provide good value and reliable operation. Size the bank appropriately, avoid excessive discharge, and recharge in a timely manner with a smart regulator (and a regulator matched to the battery type). Occasional and even frequent weekend cruisers are often happy with inexpensive deep cycle batteries. If they make a mistake and ruin the bank, it's not a big deal. Others prefer AGMs because they don't have to check the water.

Full-time cruisers like the high cycle life and robust durability provided by golf cart batteries, but these batteries do require attention. Early adopters have been thrilled with carbon foam and LiFePO4 batteries; more efficient charging by solar or generator is a strong point if you're living on the hook, and either should withstand over eight years of daily use. Racers and performance boat owners like either reduced-size AGM banks or LiFePO4, depending on whether their heart beats for throwaway simplicity or high tech.

My personal favorite? It depends on which boat you ask me about. I liked LiFePO4 in my Kevlar speedster (racing and a few overnights), flooded lead acid in my cruising cat (extensive cruising), and a single AGM in my trimaran (day sailing and a few overnights). Horses for courses.

Drew Frye draws on his training as a chemical engineer and pastimes of climbing and sailing to solve boat problems. He cruises Chesapeake Bay and the mid-Atlantic coast in his Corsair F-24 trimaran, Fast and Furry-ous, using its shoal draft to venture into less-explored waters. He is most recently author of Rigging Modern Anchors (2018, Seaworthy Publications).

| Dettern Life Velue Colde | | | | | | | | | |
|--------------------------|-------------------------|--------------------|-----------------|----------------------------|------------------------------------|--|--|--|--|
| Battery Life Value Guide | | | | | | | | | |
| Туре | Subtype | Cycles Per Year | Charging Source | Best Value | Best Choice | | | | |
| Monohull | Cruise | Overnights (0–20) | Generator | AGM | AGM | | | | |
| | | | Solar or Wind | FLA | AGM | | | | |
| | | | Shorepower | FLA | AGM | | | | |
| | | Extensive (21-100) | Generator | AGM | Carbon Foam or LiFePO ₄ | | | | |
| | | | Solar or Wind | FLA | Gel or Carbon Foam | | | | |
| | | | Shorepower | FLA | FLA or Gel | | | | |
| | | Full-time (>100) | Generator | AGM | Carbon Foam or LiFePO ₄ | | | | |
| | | | Solar or Wind | FLA or LiFePO ₄ | FLA or LiFePO ₄ | | | | |
| | | | Shorepower | FLA | Carbon Foam | | | | |
| | Performance and Race | Overnights (0–20) | Solar or Wind | Smallest AGM | LiFePO ₄ | | | | |
| | | | Shorepower | Smallest AGM | LiFePO ₄ | | | | |
| | | Extensive (21-100) | Solar or Wind | Small AGM | LiFePO ₄ | | | | |
| | | | Shorepower | Small AGM | LiFePO ₄ | | | | |
| Multihull | Cruise | Overnights (0-20) | Generator | AGM | AGM | | | | |
| | | | Solar or Wind | FLA | AGM | | | | |
| | | | Shorepower | FLA | AGM | | | | |
| | | Extensive (21-100) | Generator | AGM | LiFePO ₄ or Carbon Foam | | | | |
| | | | Solar or Wind | FLA | LiFePO ₄ or Carbon Foam | | | | |
| | | | Shorepower | FLA | LiFePO ₄ or Carbon Foam | | | | |
| | | Full-time (>100) | Generator | AGM | LiFePO ₄ or Carbon Foam | | | | |
| | | | Solar or Wind | FLA or LiFePO4 | LiFePO ₄ or Carbon Foam | | | | |
| | | | Shorepower | FLA | LiFePO ₄ or Carbon Foam | | | | |
| | Performance and Race | Overnights (0–20) | Solar or Wind | Smallest AGM | LiFePO ₄ | | | | |
| | | | Shorepower | Smallest AGM | LiFePO ₄ | | | | |
| | | Extensive (21-100) | Solar or Wind | Small AGM | LiFePO ₄ | | | | |
| | | | Shorepower | Small AGM | LiFePO ₄ | | | | |



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ALL THINGS BEING EQUAL

Equalizing batteries can improve performance and extend their lifespan.

BY DAVID LYNN

ead acid house batteries aboard boats that spend most of their time in a slip and connected to shorepower-they've got it easy. But the same batteries aboard boats that spend a lot of time disconnected from shorepower get discharged and then only partially recharged by solar panels and wind generators-they lead a hard life and often die prematurely. Sure, charging current from an engine-driven alternator or dedicated generator helps, but typically either is run only an hour or two each day, if that, which brings the batteries to only 80 to 90 percent of full charge. The performance of traditional lead acid batteries will soon

begin to decline if this cycle is repeated often enough.

That performance decline shows in batteries that appear to charge and discharge much more quickly than when they were new. But the good news is that there is something you can do about it, a process called equalization.

All lead acid batteries, whether flooded, AGM, or gel batteries, depend on a chemical reaction between sulfuric acid and lead to produce an electrical potential or voltage. When a load is placed on a charged battery, the lead dioxide plate reacts with the acid, leaving a lead sulfate crystal on the plate, producing a hydrogen and an oxygen ion (which makes a water molecule) and releasing an electron. As the electrons leave the battery to power an LED reading lamp or a water pump, the lead sulfate crystals continue to accumulate on the plate, and the sulfuric acid becomes diluted with water.

Charging the battery reverses the process, forcing electrons back into the mix, and converting the lead sulfate crystals back into sulfuric acid. The battery is fully charged when all the lead sulfate crystals and water molecules have been converted back into their two original components: sulfuric acid and lead dioxide. This is ideal. And it rarely happens.

Instead, batteries aren't typically returned to a fully charged state, and some of the lead sulfate crystals remain on the lead plates, where they harden with time. Once the crystals are hardened, the charging current can no longer convert the crystals back to sulfuric acid. As this cycle is repeated—discharge, followed by a partial recharge—more and more of the lead sulfate crystals build up, reducing the effective capacity of the battery. This is called sulfation.

As the amount of sulfation increases, the battery will begin to discharge more quickly and the battery voltage will increase much more quickly during the charging state than when the battery was new. If sulfation ever builds up enough to bridge the gap between any two lead plates, the plates will short and the battery will be a goner.

Another problem that occurs with flooded batteries is stratification. Stratifi-

As sulfation increases over time, more of the battery plate is covered in non-conductive crystals, reducing the conductive surface area of the plate and, thus, the battery's capacity.



ILLUSTRATIONS BY FRITZ SEEGERS

cation happens because the acid is heavier than water and settles to the bottom, or perhaps more accurately, the water floats to the top. In a perfect world, when batteries are fully recharged each day, the water is fully converted back to acid and the mixture remains homogeneous. In a battery that is consistently undercharged, the water and less concentrated acid has a tendency to stratify and rise to the top of the solution, separating from the more concentrated acid. The same is true of a battery that isn't used for a long period of time. The symptoms are the same as a battery with sulfation. Additionally, stratification promotes sulfation.

Sulfation can sometimes be removed via a process called equalization (some battery manufacturers refer to the equalization process as conditioning). In this process the batteries are brought to full charge, then the charge voltage is increased to a much higher level than usual, typically between 15 and 16 volts, to overcome the higher internal resistance caused by the sulfation. To prevent cooking the batteries, the current is limited to between 5 and 10 percent of the battery's amp-hour capacity. This voltage is then held for several hours.

Charging a battery at a higher voltage causes the electrolyte to produce bubbling that agitates the liquid and helps to remix it. In addition to dissolving sulfate crystals on the plates, equalization causes the water molecules that dilute the acid and lead to stratification to reform into their original components of the acid mixture.

Most flooded cell-type batteries can be equalized, as well as most AGM batteries. It's imperative, first and foremost, to make sure your batteries can be equalized. Check with the manufacturer first to be sure.

Most manufacturers provide information on how often batteries should be equalized and the procedure for doing so. Some recommend monthly equalization while others recommend it only when the battery becomes symptomatic.

Equalization Methods

The are several ways to equalize your batteries. Most of these methods sound good in theory, but I've found some of them impractical in practice.

There are many battery chargers on the market that incorporate an equalization mode, but it's important to check the specs. Some manufacturers claim their charger has an equalization mode, but in reality, the charger does a poor job of equalizing batteries. My previous batteries were Lifeline batteries, which require, depending on the battery temperature, between 15.2 and 16.1 volts over a period of 8 to 10 hours to properly equalize the cells. My old battery charger was a "smart" three-stage charger. Its equalization mode, however, only provided a voltage of 14.8 volts and would only allow the battery to be equalized for three hours. My new Magnum inverter/charger allows me to set the equalization time and voltage to match my battery specifications.

Some alternator and voltage regulator combinations provide an equalization mode, but as with battery chargers, not all equalization modes are the same. The Balmar regulator we used aboard *Nine of Cups* was quite versatile. It not only had an equalization mode, but it allowed me to set the voltage, maximum current, and time. Another option is to use a manually adjustable alternator controller and continually monitor it for the optimal equalization voltage.

If you have a wind generator and/or solar panels, you may be able to equalize the batteries on a windy and/or sunny day. Most of the newer MPPT (maximum power point tracking) solar controllers have an equalization mode, but it is important to check the specifications to make sure the controller will, indeed, provide the correct equalization voltage and current required for your batteries.

Another equalization option is to use a variable DC power supply, which allows precise setting of the maximum current and voltage applied to the battery. This was my preferred method for equalizing batteries before I upgraded to the latest in solar controller and inverter/charger technologies. Once the batteries are fully charged, the steps for using a variable DC power supply to equalize the batteries are as follows:

- Adjust max current of power supply to the recommended equalization current.
- Adjust power supply voltage to the recommended equalization voltage.



The liquid in flooded lead acid batteries is a solution of sulfuric acid and water electrolyte.

In each cell, electricity is generated by the chemical reaction of the acid with the positive and negative plates.

With repeated discharging and charging cycles (and especially when the charging cycle is delayed or incomplete), non-conductive sulfate crystals form and accumulate on the negative plates.

With repeated cycles over time, the acid becomes stratified (concentrated at the bottom, diluted at the top), the plates corrode, and material accumulates at the bottom of the battery case. • Connect to the battery and monitor, adjusting the voltage and current as necessary.

If you decide to purchase a DC power supply, you will want to make sure it is rated for at least 20 volts and 15 amps. It should also be output protected. If you connect a DC power supply to a battery and it is not output protected, you will quite likely fry the output section of the power supply. I purchased a Volteq model HY3020EX, which is a 30-VDC (volts DC), 20-amp variable power supply. Currently, the cost of this power supply is about \$230 from a couple of online sources. It is the least expensive option I know of for obtaining a tool that will optimally equalize any battery that can be equalized.

Some manufacturers recommend equalizing the batteries as often as once a month, while others suggest waiting until the batteries become symptomatic. On *Nine* of *Cups*, our first batteries were flooded batteries. I equalized them once a year, and they barely lasted three years. Our second set were Lifeline 4D AGM batteries, and I managed to equalize them about once every three months (before they began to show signs of sulfation). Those batteries lasted seven years. I know that's comparing apples and oranges, but for a cruising boat that rarely saw a marina, seven years of service from any battery type was pretty good. Given the high cost of replacing batteries, getting a few more years out of that battery bank was well worth the investment of time and the cost of a DC power supply.

David Lynn and his wife, Marcie Connelly-Lynn, lived aboard Nine of Cups, their Liberty 458 cutter, for 18 years, during which time they put nearly 90,000 nautical miles under her keel and visited more than 36 countries on five continents. They are currently exploring North America in a tricked-out Ford Transit van. They blog regularly and maintain an extensive website at justalittlefurther.com.



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The Devil in the Details—DL

Even though it's good practice to equalize batteries (assuming your batteries are the types that can and should be equalized), it's a process that requires care and caution. Before you do it, be aware of the following:

Battery type: Not all batteries can be equalized. In general, flooded cell batteries can usually be equalized, as well as most AGM batteries. Gel batteries usually cannot. Check with your battery manufacturer.

Ventilation: Equalizing batteries produces hydrogen gas. Even our sealed Lifeline batteries released enough hydrogen to set off our bilge gas detector if we equalized them without venting the battery compartment. Hydrogen is lighter than air and will quickly dissipate if the battery compartment is open, but if it is confined in a closed battery compartment, it can be extremely explosive.

Equalization parameters: Most battery manufacturers will provide the optimal voltage and current that should be applied to the battery, as well as the length of time necessary to properly equalize their batteries. Make sure whatever method you use to equalize the batteries can be adjusted to meet the manufacturer's recommendations.

Equalization voltage: Equalization voltages are considerably higher than normal charging voltages, and some equipment cannot tolerate these higher voltages. When in doubt, disconnect any equipment, especially electronics, from the battery during the equalization process.

Battery temperature: The optimal equalization voltage varies with battery temperature. The better charging systems, whether solar, wind, alternator, or inverter/charger, utilize a temperature sensor mounted on the battery to adjust the equalization voltage accordingly. If you are using a DC power supply, it is best if you can monitor the battery temperature and tweak the output voltage as needed.

Simple Solutions

Hole in One

An old instrument's housing provides a platform for its replacement.

BY JIM SHELL

hen we bought Phantom, our 1981 Pearson 365 ketch, in 2001, she had old Signet Marine instruments that needed replacing. As was common then, the instruments were mounted on the forward cockpit bulkhead, adjacent to the companionway, in 4-inch holes. We replaced them. Almost two decades later, with our replacement depth sounder on the fritz, I went shopping, only to learn that form factors have changed over the years, and instruments that fit 4-inch holes aren't as plentiful as they once were. Time to think outside the...hole.

Rather than deal with fiberglass work or make a bulky patch on which to mount my new Faria depth sounder, which requires only a 2-inch hole, I began taking apart the non-working Datamarine depth sounder. My plan was to mount the Faria depth sounder inside the housing of the Datamarine unit.

After removing and discarding the electronics and

faceplate of the Datamarine instrument, only the bezel, housing, and rear plate remained. Next, I cut a piece of laminated plywood to replace the original faceplate. After painting the laminate black, the faceplate matched the other instruments and provided a nice background for my new instrument, for which I drilled a 2-inch hole in the center.

I used three long bolts pushing against the original instrument's rear plate to keep the new faceplate in place against the bezel, but this might have been a bit of over-engineering, and I probably could have used J-B Weld to secure the faceplate. After caulking, I mounted the depth sounder into the faceplate. Now, it was simply a matter of running the new wires, installing the new transducer, then re-mounting the "new" display unit in the existing hole in the cockpit bulkhead. Problem solved!

Jim Shell and his wife, Barbara, sail their Pearson 365 ketch off the coast of Texas.

(top to bottom) The Datamarine depth sounder was dead, but Jim could still use its housing to serve as the mount for a new Faria unit.

After removing the guts and faceplate of the Datamarine unit, Jim cut and fit a new plywood laminate faceplate, which he later painted black to match the other instruments.

Jim cut a 2-inch hole in the new faceplate to accommodate his new Faria depth sounder.

The Faria depth sounder, installed into the newly repurposed Datamarine unit's housing, in place on the bulkhead into the same 4-inch opening that held the Datamarine instrument.









True North

A singular voyage leads to the Gulf of Saint Lawrence's stunning Mingan Archipelago.

BY BENOIT FLEURY

t was on the way back from a trip to Tadoussac—a fun adventure from Montreal on *Exilés*, my Southern Cross 28—when my friend and crewmate, Robert, casually tossed me a brochure and said, "Here. Dream a little." The brochure was about Mingan Archipelago National Park Reserve, a group of spectacular, otherworldly islands in the eastern area of Quebec, Canada, on the north shore of Gulf of Saint Lawrence.

It's a good 600 miles from my home port near Montreal, through challenging, chilly waters and across the 50th parallel, a not insignificant, time-consuming bit of sailing. I thought at the time that this was far-fetched and unrealistic, but somehow all the pieces fell into place a year later, and this 1,200-mile, two-month odyssey confirmed for me that little Exilés is suited to take me and my crew anywhere safely and comfortably. It was a voyage marked by breakdowns, record heat, numbing cold, thick fog, overnight passages, strong winds, tidal currents, and busy shipping lanes. From it all, we have great memories and stories to tell, and plans for the next great adventure are already brewing.

It began inauspiciously. With my wife, Liuyuan, and our talkative African Grey parrot, Smokie, we'd barely gotten

Benoit enjoying a feisty passage aboard *Exilés* along the Gaspé Peninsula. a few miles beneath our keel before I was below, contorted around the engine. As we'd approached the Côte Sainte-Catherine lock (just across the Saint Lawrence River from Montreal), our engine's exhaust manifold pipe sheared off. Not only did this happen on a Sunday, but it was July 1, Canada Day, a national holiday. Nothing would be open. I think it was here that Smokie added a few more words to her vocabulary.

I made one call to my heroic brother, Christian, and he had a roll of high-temperature-resistance duct tape to the boat before we reached the next lock. This temporary repair got us through the next few days, during which favorable currents and winds carried us straight on to Quebec City, where I had the exhaust manifold replaced. The mechanic told me that after we put several more hours on the engine, I should check the two bolts securing the manifold to the engine.

Quebec City was the end of the first leg, and all that Liuyuan (and Smokie) could commit to before returning home. Christian joined me for the next leg, defined by the two weeks he could spend aboard.

Soon after leaving Quebec, we stopped at Marina Saint-Laurent on l'Île D'Orléans (now referred to as Club Nautique de l'Île Bacchus) to wait for the tide to reverse so we could keep riding the strong ebb and not fight the flow. Despite the dropping temperatures of the water and the air, Christian and I braved a quick swim before bed. To catch the ebb, we'd need to get back underway at 0300. Unfortunately, during the night, the winds howled and the boat was uncomfortably rocky; neither of us slept well. And at 0230, we were on deck in hats and gloves, two guys in their 50s retrieving a 35-pound CQR in total darkness and choppy water.



Benoit (left) and his brother Christian pose for a selfie at a beautiful but chilly anchorage near Brandy Pot Island near Rivière-du-Loup, at right.

Robert and Benoit so enjoyed the marina at Havre Saint-Pierre they found it hard to leave, at bottom right.

One hundred miles east we stopped at Tadoussac, a village at the confluence of the Saint Lawrence River and the Saguenay Fjord. Founded at the start of the 17th century, it served as the center of fur trade between the French and First Nations peoples. In the 19th century, tourism became the primary draw and remains so today, particularly whale watching. The settlement is very small, the area rugged and rural.

We'd found getting across the river to Tadoussac with the right timing a tad tricky, with particularly strong ebb cross-currents from both the Saint Lawrence and Saguenay. We were moving backwards at one point. It all worked out in the end, and we rewarded ourselves with a fish-and-chip lunch at the marina's restaurant upon arrival.

East of Tadoussac things grew increasingly wild and undeveloped. We'd radio the coast guard each morning with our planned route. When we arrived someplace for the day, we'd call and close our plan (and when we'd forget, they'd promptly call us)—a great service! In this part of the river, we saw lots of whales and seals but also in some cases a great number of fast-going sightseeing boats, which tainted the experience.

In Sainte-Anne-des-Monts, I put a wrench to the two bolts that attached the new exhaust manifold to the engine. One tightened a bit, the other just spun! The stud was stripped, and I didn't have a spare or the tools to make one. But this misfortune served as a reminder that on adventures it's the people you meet who stick with you, long after the memories of place recede.

Sylvain, the marina's attendant who looked as if he descended from a long line of toughas-nails seamen, turned out to be the friendliest and most resourceful guy we met. He connected us in no time to Yvan Pelletier, an 81-year-old mechanic who removed our stripped stud from the engine on very short notice one evening, brought it to his pristine shop

overlooking the Saint Lawrence, and meticulously machined a new stud for *Exilés*' manifold. We were back in business.

The next day, the tempo increased. Leaving Saine-Anne-des-Monts, the Saint Lawrence River opens wide to the Gulf of Saint Lawrence. As we prepared for a sail along the northern side of the Gaspé Peninsula, the Canadian Coast Guard issued a small craft warning with 20- to 25-knot westerly winds and 6-foot seas. For us, this meant an exhilarating sail between Sainte-Anne-des-Monts and Grande Vallée. Exilés was in her element. Despite being knocked around a little and tackling some carefully controlled jibes, we had a blast. After dropping the hook in Grande Vallée, we sat and relaxed for hours, watching the northern gannets





(fous de bassans) dive for fish; what a show!

From here we could have turned north and headed directly for the Mingan Archipelago, but Christian had to catch a bus home. So, we set our Cape Horn self-steering system and continued east, following the coastline along the top of the peninsula, and headed for Cape Gaspé. It was a real treat for the two of us to sit comfortably on the foredeck while *Exilés* steered herself.

When we finally arrived at Club Nautique Forillon at Rivière-au-Renard, we found a colorful and busy fishing port that included a small marina. Mary-May has looked after the marina since setting it up 27 years ago and still welcomes all visitors as though they are family. Here, Christian boarded a bus for a 15-hour ride home, and the next morning, my friend (and crew for the next four weeks) Robert arrived on the same bus.

Robert and I left Rivière-au-Renard and headed due north for 50 nautical miles across the Gulf of Saint Lawrence to reach Port Menier, on Anticosti Island. This was my first experience far enough offshore to not see land for several hours. I loved it-until the porpoises left and dense fog arrived. At one point we couldn't see beyond 50 feet or so. We didn't have radar, and I was busy on the VHF ensuring our position was known to ship traffic in the area.

Anticosti Island is one of Canada's largest, ranking 20th in size, and, with over 400 shipwrecks along its shores, it is often referred to as the cemetery of the Saint Lawrence. (top to bottom) Robert greets a local on Anticosti Island.

The limestone monoliths, carved by erosion following the last ice age, are among the Mingan Archipelago's most striking geological features.

Exilés sailing for Pointe Claire Yacht Club, nearly home.

Only a few hundred people reside on the island, along with over 100,000 deer and a healthy population of mosquitoes. French chocolate maker Henri Menier bought Anticosti Island in 1895 for use as a game reserve, as well as for logging and cannery operations. Port Menier was the center of these operations and is today the hub of Anticosti life. Menier was a notable sailor who crossed the Atlantic numerous times to visit his island, on which he kept a 30-room, Scandinavianstyle mansion.

Robert and I were so taken by the charm and people of Port Menier that we spent an extra day there, walking about, chatting, and learning more about this place's history. But the Mingan Archipelago was the ultimate destination for this adventure, and we were only one more Gulf crossing away.

From Port Menier we rounded the western tip of Anticosti Island before turning north, across the 50th parallel, to the Gulf of Saint Lawrence's north coast, where the cold Labrador Current runs. It started as a rocky sail with a strong breeze and lively chop, and I didn't have much of an appetite for our breakfaston-the-go. I'm normally a fast eater, and Robert chuckled at how slowly I chewed my eggs and bacon.

Crossing the 50th parallel, which lies between Anticosti Island and the Mingan Archipelago, was a great achievement for Robert and me. In a way it was just a "5" followed by a bunch of zeros on our chart plotter, and fog was all around us at the time, but the feeling of accomplishment was very real, and we were in a great mood.

As we approached the western-most island of the archipelago, fog shrouded the islands from view, but all around us we could hear whales surfacing and breathing. Once we dropped the hook, we opened a single-malt scotchwhisky that I had reserved for crossing the 50th and reaching the archipelago.

We spent six days in this unspoiled treasure, a place of spectacular beauty and fascinating geography and ecology. This reserve is comprised of about 40 islands featuring eroded limestone monoliths, rare plant species, fossils, and many types of seabirds. Standing next to the monoliths was humbling and decidedly more satisfying than anything









Exilés tied to a lonely Parks Canada dock on Niapiskau Island in the Mingan Archipelago. Benoit is dwarfed by one of the limestone monoliths in the Mingan Archipelago, below.

I had imagined looking at the glossy brochure that Robert had tossed at me a year before. We had the chance to explore two of the archipelago's islands, Quarry and



Niapiskau, with friendly and enthusiastic guides from Parks Canada. We spent time with the guides before and after the visits and got to appreciate their own perspective of life in this remote area. They explained how the impressive limestone monoliths were formed through erosion over thousands of years following the retreat of the last ice age. The islands' unique microclimate has allowed a rich variety of plant life to thrive here (such as Labrador tea leaves), as well as scrawny evergreens that live to 200 years, twice the lifespan of the same trees on the mainland.

Along with the stunning natural beauty, we met wonderful people. We spent a day in Havre Saint-Pierre, a quaint Acadian town of roughly 3,500 people on the Gulf's north shore in the heart of the archipelago. Proud and welcoming Acadians were quick to share their stories, including Monique, the marina's attendant at Club Nautique de Havre Saint-Pierre. Membership fees at this club are a fraction of what we're used to in and around Montreal, so it took (and still takes) some willpower not to settle in Havre Saint-Pierre!

The Acadian accent took a bit of getting used to, but I feel all the richer for it, as the Acadians' colorful history formed an important fabric throughout many parts of North America. I'm not normally a highly social creature, but these interactions were for me far more powerful than any book, magazine, or brochure.

We felt especially privileged to be among the few sailors, even from Quebec, who come



here to explore. We were a bit surprised that all the sailors we met transiting via Rivièreau-Renard were headed south rather than north to Anticosti Island and beyond to the Gulf of Saint Lawrence's north coast. Certainly the climate there is on the cooler side, especially when $25^{\circ} C (77^{\circ} F)$ is considered to be unusually hot—leading to a lot of fog since water temperatures are barely above freezing-but to us this made it all the more appealing by way of escaping the heat and crowds of our cities in summer.

It was hard to turn for home, but a month had passed since Liuvuan and I had left Pointe-Claire. Robert and I made several small passagesone 24-hour run, which was my first overnight sail-as we made our way from the Gulf back into the Saint Lawrence River. The highlight of the voyage home was the village of Matane, where Robert and I spent three days immersing ourselves in the local charm of this historic town, a trading post from the early 1600s. We spent many hours chatting

with fellow sailors from the town's small but quaint marina.

For example, we met Pierette and Clermont aboard their impeccably home-built and superbly maintained 34-foot wooden sailboat Fleurion, which they've sailed for many years, including no fewer than six Atlantic crossings. It didn't take long for us to feel at home in Matane; as in Havre Saint-Pierre a week before, it wouldn't have been difficult to remain right there and become "Matanais." Alas, schedules and other commitments suggested otherwise. As we left Matane on our way back toward Montreal, Clermont stood at the end of our slip waving goodbye until we were out of sight. Memories from these shores remain, subliminally but persistently tugging me to return as if this is where I belong.

Robert stayed with me for several stops more until we reached Port of Quebec Marina where he caught the bus back to Montreal after four great weeks with me aboard *Exilés*. On his heels, my son, Paul, joined me for the final leg home to Pointe-Claire. Though we didn't have far to go, this would by far be the longest sailing trip Paul had been on, and I looked forward to sharing it with him. We made several stops, and then on Aug. 24, 55 days after leaving, *Exilés* made it through the Montreal locks and back to Pointe-Claire by supper time.

It was bittersweet. On this adventure, living aboard *Exilés* came to feel increasingly "right." Though all my days aboard were different, they shared a rhythm. Life was distilled to discovering a new place, meeting new people, challenging myself on the water, taking pride in passages completed, and anticipating the next landfall. It is something I could do more of.

Fortunately, each of the four crew who joined me along the way are keen to return and repeat a similar experience—some wishing to undertake even more ambitious exploits—and we are already planning new adventures. I'm not sure if it would be more thrilling to return to this spectacular area, with so much more to explore, or to embark on a whole new voyage elsewhere in northern waters, but I'm hooked either way.

Benoit Fleury lives in Pointe-Claire near Montreal with his wife, Liuyuan, and their African Grey parrot, Smokie. During the summer months he can be found sailing Exilés, his good old Southern Cross 28, somewhere on the mighty Saint Lawrence with friends and family (and Smokie). Over the past nine years their adventures aboard Exilés have taken them between the Thousand Islands, Montreal surroundings, Tadoussac, the Gaspé Peninsula and the more rugged Côte-Nord.



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In Search of a Polestar

An evolving passion for sailing helps define a path forward.

BY ELIZABETH MASSERANG

he day my younger brother, Mitch, suggested that we charter a sailboat for a week on Traverse Bay, it seemed like just a fun idea to get us up and out of the rut where we both felt stuck. He'd learned to sail when he was young, on Saginaw Bay on an 11-foot daysailer. Later, he sailed our dad's NorthStar 26.

I was nervous and excited about the idea. Nervous because I knew next to nothing about sailing. Excited because neither one of us was comfortable with the banality of a predictable routine. We had always been close. Years of babysitting and building Lego forts wouldn't explain it; we were just alike. We shared an adventurous spirit, a sense of humor, and a comfortable camaraderie.

And, life had handed each of us plenty of strife. At age 50, I had gone through a divorce, lost a job, and was an empty nester when I started spending more time with Mitch. For Mitch, it was even harder. He contended with bipolar disorder that had landed him in the psychiatric ward of a hospital when he was in his 20s. He battled through, worked hard to earn an engineering degree at the state university but then still had trouble finding his way. For the previous five years, Mitch's life consisted mainly of work and weekends in bed. We had each other but were each adrift, in need of a polestar. Maybe sailing would serve that role for Mitch.

We planned a week-long trip for the summer of 2012.

To prepare, over the winter we spent our evenings in his small, spare apartment across from a gas station and grocery store, planning our route. He taught me how to tie proper knots and understand the sailing terminology I'd need.

Our first charter was Godspeed, a Beneteau 32. We stopped at quaint harbors such as Suttons Bay, Bowers Harbor, and Northport, and for several days we enjoyed sun, summer temps, and 15-knot winds. But by the morning we pulled out of Northport, the benign weather had given way to a misty rain. As we cleared the last peninsula that blocked the wind, the swells increased. Making our way out onto Lake Michigan, the sky was dark and overcast, which turned the deep waters an ominous grey. As the wind built, the waves grew.

With Mitch at the helm, my book and I perched fairly comfortably against the cockpit coaming, tucked under the dodger and out of the wind.

"I'd be much more comfortable if you got used to being at the helm, in case I need to go forward to adjust sails."

Was he talking to me? I was perfectly fine at the helm in 15 knots of wind and sun, cocktail in my hand, and the songs of summer playing on the radio. But this was different, and I made my way reluctantly and anxiously to the helm. I yelled over the wind, "Tm on vacation, and this is really stressing me out!"

Mitch assured me he would stay next to me. He instructed me to take the swells at a 45-degree angle.

Mitch easy at the helm of Erewhon on Traverse Bay, heading out toward Lake Michigan.



Hanging onto the large wheel with a death grip, I grimaced as the boat took a good heave to starboard and our rail went under. Having never experienced this at the helm, I felt like I had no control, like we were going over. I was terrified. "Forty-five degrees into the waves," Mitch said. "Relax."

I did as he instructed. I came to correlate the swells with the boat's motion. She would heave under a swell, but I kept a firm grip on the wheel and saw that she'd roll back into position like a giant whale, ready for the next swell. Things started to feel less scary, the Beneteau exuded power as she rolled through each swell, her heavy bow crashing down and sending spray in the air. The thrill of it drove away my anxiety. That first charter led to several more aboard different boats. Mitch was extremely competent, and under his wing, I was learning. Mitch began to think that owning a boat might be a better way to enjoy his growing passion. Watching him at the helm, the pure enjoyment on his face, I encouraged the idea. That initial seed grew over the winter and took root.

Erewhon caught Mitch's eye. She was a 1986 Tartan 37 berthed near Cleveland. She was named after a fictitious Utopia featured in a Samuel Butler novel written in 1872. *Erewhon* derived from nowhere. Her hull was navy blue, her interior a rich patina of dark teak. Mitch saw in *Erewhon* a vessel he could sail on the Great Lakes and into the ocean on adventures not



Mitch and Elizabeth relax aboard Erewhon.



yet dreamed of. That July, the deal was sealed, and *Erewhon* was his.

The day Mitch and I planned to deliver *Erewhon* 35 miles to her new home port, it was hot and steamy. I waited quietly in the shade of boats up on jack stands. I did whatever Mitch instructed with as few questions as possible, to minimize his stress. His first sail on his own boat was monumental, for both of us.

The winds were not in our favor, and we thought long and hard about whether to leave. Were we ready, and was she? We decided the answer was yes, and Mitch warmed up the engine.

The marina was a close fit for any boat, and *Erewhon* was positioned against a seawall pointing inward to a dead end, with docks to our left and boats in front of and behind her. Mitch told me what he planned. We would back up and out of our current position, then back up into and between the two tight rows of docks on either side; pull forward, then a sharp right and we'd be heading into the main drag of the harbor. I stood by with a boathook to fend off, if needed. I waited on the bow as Mitch started to maneuver. Backing up and pulling forward and out went well, though I was busy fending off the close boats. The trouble started with the backing up and between the row of docks on both sides.

Erewhon has an aggressive prop walk, and she was the largest boat Mitch had ever handled. As I ran from bow to stern pushing off docks and boats, I began to feel Mitch's anxiety more than the heat. Then came the moment when I knew with complete certainty that his plan had gone to hell. I stood watching while he waited for forward momentum; there was no stopping what happened next. The timing was off, and as Mitch geared forward, Erewhon's reverse momentum kept her going back, crashing into the dock. Everyone around turned at the loud crunching and breaking of wood, in time to see Erewhon continue

into the boat docked beyond, crashing into her side.

Someone from the marina jumped on board and helped Mitch steer us out of the mess, an embarrassment for any captain. With the marina hands at the ready, we uneventfully pulled into the gas dock. I headed for the bathhouse and stood fully clothed under the cold water until I felt myself cool down. I knew too well what was to come.

When I came out, *Erewhon* was back in her original berth, and Mitch was waiting in his car. We drove the two hours back to my car without a word.

I spent the next few weeks trying to talk Mitch off the ledge. He had lost all faith in his abilities. I had no idea what these feelings of defeat would do to him.

He had contacted an organization that takes donated boats, and I knew he might do it, even though he'd paid \$32,000 for *Erewhon* and had owned her less than a month. Eventually, I talked Mitch into keeping *Erewhon* for one summer, after which he could sell her if he still felt she was too much. He enlisted the help of his friend, Tom, to sail her to her new home port.

That winter of 2014, *Erewhon* was stripped down to her shell and refitted to Mitch's



Mitch at the helm of *Erewhon* sailing on Lake Huron, about 20 miles past the Mackinaw Bridge.

specifications, which made him a legend at the marina for overdoing an overhaul. He now knew her inside and out, but I knew he still harbored insecurities.

We spent the next summer sailing on the western shore of Lake Erie. Mitch's confidence in docking began to grow, though while pulling out of the slip wasn't bad, coming into the dock was always a test of his abilities and nerve. His uncertainties still provoked enough anxiety that at that point *Erewhon*'s fate remained in doubt.

In the spring of 2015, I took a job in Traverse City, where our sailing adventures had begun.

Mitch left his little apartment and moved aboard *Erewhon*.

A year later, Mitch singlehanded *Erewhon* 500 nautical miles to Traverse Bay, with four stops along the way and one overnight sail. I joined him on a leg of the trip back. The day I jumped ship, the wind howled 23 knots and 6-foot swells were breaking. Mitch confidently pulled *Erewhon* out of the slip and left the sheltering waters of the harbor.

I watched from shore, waiting to see him raise the sails, hearing the loft of them in my head until she fell off and the wind filled them, and I could feel her settle into the waves. Mitch had her on a northeasterly tack, the wind to his face and the open waters ahead. In that moment, I knew with certainty that *Erewhon* was his, and he had found his polestar.

Elizabeth Masserang was born and raised in Michigan and has enjoyed the Great Lakes all her life. She is a mental health professional who works with combat veterans. In her free time, she reads, writes, and canoes. And of course, she sails on Erewhon whenever possible, first mate to captain Mitch, who still resides at the marina and sails the western shores of Lake Erie and enjoys many solid friendships.





Split Personality

A vertical windlass, reimagined, fulfills dual duty as an automatic furler.

BY TAMARA WATSON

stared down at my university packing list. I had been onboard Jasamine since I was two days old and couldn't help but feel that I was deserting her by jumping ship for college. And I knew that I was leaving my dad, the captain and builder of our 54-foot monohull home, shorthanded. I had grown to become his deckhand, and now that he was nearing 70, I felt he relied on me to keep his sailing dream alive. I couldn't imagine him apart from the sea, and yet I'd seen him struggle lately with physically demanding tasks, and I quietly wondered if the time was coming for him to turn the helm over to someone else.

My dad had often spoken of how certain additions or

alterations to Jasamine would make late-in-life cruising a breeze. In particular, I'd noticed him lusting after shiny electric foresail furlers on the bows of new Beneteaus and Catalinas. As they'd parade past us, his eyes would follow like a sailor's gaze follows a skirt. I couldn't blame him: an electric system that obeyed with the touch of a button? No strain, no stress, no extended vocabulary in bad weather? It sounded like a dream! But after my mom and I priced electric foresail furlers one Christmas, Santa brought my dad something way more affordable.

I looked up from my packing list to see my dad skip down the hatch with a grin on his face. "Come on up to the foredeck, I've got something to show you and Mom."

I followed him topsides. He had been tinkering all morning on the foredeck, running lines, rummaging through bins of collected hardware. Up on deck, the windlass caught my attention.

"Dad, why is the furling line around the capstan?"

"Here, I'll show you what I did and how it works."

He headed back to the cockpit, uncleated the furling line, and pulled on the genoa sheet. The windlass capstan spun freely, allowing the furling line to wind on the drum, and the sail unfurled and spilled out like normal. Then, reaching down, he activated the remote switch for the windlass, and the sail quickly furled smoothly back on the foil as he tailed the furling line and eased the sheet. I was blown away.

Then he came forward and pointed out some of the design details he'd worked out. He explained that from now on, before sailing, we'd make sure the anchor chain was secured with the stopper, remove it from the gypsy, attach the snatch block, and run the furling line as he had it. He showed us how it was important that the line running from the snatch block to the capstan be below the turn around the capstan that runs to the cockpit, as this prevents override.

He pointed out the round, flat, (rusted) metal plate he'd



installed on the windlass, separating the anchor chain gypsy from the capstan and preventing the furling line from slipping into the chain gypsy. He showed me how to de-rig the system after a passage so that the anchor windlass can once again be used for anchoring. Based on the smile on his face, this sailor's pride wasn't measured by his resources but by his resourcefulness.

Maybe feeling a tad resentful at the prospect of being so easily replaced, I asked him whether his new system furled as well as I do.

"Even better, my girl! It complains less." His eyes twinkled.

I'm glad that my dad's resourcefulness is going to help him continue to live the life he loves. This clever bit of ingenuity and workmanship is an example of the quiet determination that has fueled his dreams all these years, and it encourages me to approach my future with the same spirit. Who knows? After this whole university thing is over, I may just have to keep on cruising myself.

Twenty-year-old Tamara Watson grew up living with her parents, two dogs, and a parrot called Captain Morgan aboard Jasamine, a 54-foot, ketch-rig monohull, which her parents built in the 1980s. Currently she divides her time between life at sea and life in a dorm, as she's studying physics and secondary education at university. After graduation she hopes to teach overseas and explore.

When the windlass is set up for furling, the furling line runs from the drum at the headstay through a snatch block, around the capstan, then through the usual furling line block and aft to the cockpit, at left.

With the new arrangement, it's easy-peasy for Tamara's dad to activate the windlass from the cockpit and furl the headsail, with two hands free for the furling line and genoa sheet, at bottom left

Tamara's dad used a metal plate to separate the gypsy from the capstan, preventing the furling line from sliding into the gypsy. With the capstan set up as an automatic furler, rather than for anchoring, the gypsy is clear of any anchor chain, below.







Counter Intuitive

With Corian countertop material as a core, a new centerboard takes shape.

I 'm one of the lucky few. Not only do I sail a boat with a centerboard, the centerboard on my Allied Seabreeze 35 is made of bronze. After 55 sailing seasons that bronze centerboard shows no evidence of degradation. It's in like-new condition. Unfortunately, my experience is not common. Most centerboards are not made of bronze.

My friend owns a sistership. Both of our Allied Seabreeze 35s were built to a high standard, but Allied built the latter half of the production run with aluminum centerboards, probably to keep costs down. As you can imagine, some of these aluminum boards have not stood the test of time, evidenced by significant corrosion issues. The kiss of death is painting an aluminum centerboard with copper antifouling paint.

My friend needed a new centerboard and enlisted my help. Ideally, he'd have a new board fabricated of bronze, but the cost would be prohibitive, even if one could find a shop to take on the job.

Our approach to build a new board was unique. Instead of metal, we decided on fiberglass. Rather than building a mold, we opted to build a one-off board with a core. But what material would we use? Getting epoxy to bond well to any metal is difficult. Wood is cheap and easy to work, but wood is lightweight and subject to rot. After reading an epoxy manufacturer's technical article about successfully bonding to Corian countertop material, we had our answer.

I explained to the distributor why we needed the Corian, and they supplied a

The orange fiberglass rods Art used to pin the lifting tang in place were sourced from a broken driveway snowplow marker, at top.

After drilling holes in the Corian, Art filled them with lead shot cast in epoxy to add weight. The clamps are holding plastic and plywood under the board to keep the slurry in place until it cures, at right.



lovely pink remnant that fit our project. The material generally comes in $\frac{1}{2}$ -inch thickness for countertops and $\frac{1}{4}$ -inch thickness for shower surrounds. Because our finished thickness was to be $\frac{1}{16}$ -inch maximum, I used $\frac{1}{2}$ -inch material. With a saber saw I cut the centerboard shape, though slightly smaller, allowing for the thickness of the glass I planned to wrap around the perimeter edges. Using a 5-inch grinder it was easy, but rather dusty, to taper off the trailing edge and put a bit of a bullnose on the leading edge.

The lifting tang is a piece of ¹/₈-inch 316L stainless steel. To attach it to the new centerboard, I epoxied it into a pocket I cut with a router. Before routing I measured carefully, because accurate placement of the tang is critical to replicate the function of the original board. When I began the laminating process—which I could only do one side at a time—I used the existing holes in the tang to drill through the new laminate each time I laminated a side. Ultimately, after all the laminating was



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Using fiberglass cloth cut on the diagonal was a neat trick to wrap the perimeter of the centerboard, at top. One of the first full layers of biaxial cloth is glassed to the board and awaits trimming, above.

completed, I installed fiberglass rods to pin the tang in place, avoiding use of another underwater metal to fail.

One square foot of ½-inch Corian weighs 4.4 pounds, which is much heavier than water (2.6 pounds for the same volume) but much lighter than the original aluminum (about 7 pounds for the same volume). So, from the start, I assumed the new board would come in on the light side. I had a plan for that. I used 4-inch and 2¹/₂-inch hole saws to drill 18 evenly spaced holes through the Corian. Then I covered the underside of the board with polyethylene sheet plastic and a thin sheet of plywood that I clamped in place. From the top, I now had 18 pockets that I filled with a slurry of lead shot and epoxy. (On the internet I found a 25-pound bag of mixed #6 and #7 shot. This must have been recycled stuff, because it warned that there could be small pebbles and twigs mixed in. I never saw either.) This step increased the weight of the Corian board by 25 pounds.

Though the Corian was in the rough shape of the original centerboard, now it was time to start the fiberglass work that would really do the trick. From 6-ounce fabric, I cut 4-inch-wide strips on a diagonal, which allows the fibers to wrap around the edge and turn the corners with ease. This is much, much easier than using standard tape with selvage edges. Using these strips, I made two passes around the perimeter of the board.

Next, I applied eight layers of 20-ounce biaxial cloth. The first five layers I applied were full width, way oversized. After these cured, I carefully trimmed the edges off. The next three layers were narrower, and I used them to bulk up the center and create the foil shape.

At this point, the board had gained a lot of strength, but it still flexed a little more than I wanted. I added a 12-inch-wide

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piece of 6-ounce unidirectional carbon fiber. That worked like magic to stiffen the board.

Next, I wrapped the perimeter with two more passes of diagonally cut tape before adding a tenth layer of 20-ounce biaxial cloth that covered the entire board. Finally, I used a thickened epoxy compound to fair the surface before sanding it smooth and applying paint.

To provide the board even more stiffness, Art added a layer of carbon fiber, with its distinctive black color, below.

The board nearing final stages, with the holes filled with lead shot and the layers of fiberglass sanded and faired, at bottom.



Installing the new Corian-andlead-shot centerboard in the trunk was straightforward, and it works beautifully. The Allied has sailed some rough bashes to windward, which assured us the replacement centerboard can take the abuse. The boat's owner spent the summer cruising in Maine, sailed down the Intracoastal Waterway, and was in Florida by December. All is well, the board is proving itself, and it will likely deliver many years of service. It's not bronze, but it may be just as good.

Art Hall sails with his wife, Sandy, on the coast of Maine aboard their 1965 Allied Seabreeze Secret Water, which they have owned for 23 years. Every sailing season there are improvements that make this aging fiberglass classic just a little bit better!

Fully installed and lowered, the board is ready to go to work, at right.







A Sense of Directions

Writing a cruising guide provides a new perspective on home waters.

BY BRIAN FAGAN

Ust turn right at the lights," an experienced cruising sailor told me when I first arrived in Santa Barbara a half-century ago. I was horrified how casual he was, having learned navigation in the English Channel with its fast-running tides and turbulent weather. There, one found one's way around with Adlard Coles' definitive cruising guides firmly in hand. They took sailors up French estuaries literally yard-by-yard and buoy-tobuoy. Their successors still do.

Of course, the Santa Barbara Channel is a relatively benign cruising ground with usually predictable winds and no tidal races to contend with. And yet, I've nearly lost my boat twice in these waters. There was a sea guide to the Channel Islands, lavishly illustrated with fine aerial photographs, but finding one's way around the unmarked and unlit coves of Santa Cruz Island and further afield required both caution and an intimate knowledge of inconspicuous landmarks. Think the grey soil of ancient Native American middens and distinctive mainland canyons glimpsed at a distance on a foggy day, and you get the picture. At sea level with a 20-knot westerly and a reef in the main, I soon realized that a more nuanced cruising guide was an essential companion for sailing adventures here. So, I decided to write one.

It turns out that my professional experience studying stratified archaeological sites, coupled with all those years of sailing with Coles' guides at my side, produced a highly effective mindset for compiling useful sailing directions. And, much of my longer-distance cruising off European and Mediterranean coasts had also introduced me to 19th-century Admiralty Pilots, which were still in print. Compiled in the Age of Sail by young naval officers in small sailing boats who spent months exploring anchorages, headlands, and landmarks, these joined geographer George Davidson's 1858 classic *Directory for the Pacific Coast of the*

Brian's iconic first cruising guide gave sailors a fresh, more thorough view of southern California's waters and remains a classic today.



United States as my models. Davidson and his surveyors traveled more than 50,000 miles in small boats, lead and line in hand. They compiled superb drawings of anchorages and coastlines that are still usable today, and gave me an excellent blueprint for starting work.

Researching and writing the guide to the Santa Barbara Channel took over 10 years and many miles of sailing. I visited every anchorage and port between

> 10 and 17 times in different weather conditions before finalizing the sailing directions. This was apart from writing the background essays on weather, history, and so on, which I find to be an essential part of a book like this.

> Writing a cruising guide changed my perceptions not only of navigational challenges but of local geography, of the very subtle weather patterns that change with the seasons, of spectacular spring flowers on normally semiarid islands, of the places where kelp beds flourish, and of the vagaries of winter winds off Point Conception, often called the "Cape Horn of the Pacific"-and with good reason. I developed a profound admiration for ancient Native American Chumash skippers, who paddled their unique planked canoes as far west as San Miguel Island, where shrieking summer winds can beset you at anchor in Cuyler Harbor in the small hours. Reading anthropological accounts of the canoe navigators, who caught swordfish in deep water and often lost entire canoes in the windy lanes off Santa Cruz

Island, one is lost in admiration at their stoic seamanship. I also developed a profound respect for my more recent forebears, not least for Richard Henry Dana and the 19th-century sailors who traveled these waters without diesel engines in weather conditions significantly windier and cooler than today.

As I developed my own local knowledge—and yes, local knowledge is a very special, hard-won expertise—I realized that a deepened understanding of my home waters added immeasurably to my pilotage skills and to my enjoyment of local passagemaking. I set out originally to write sailing directions. In the end, I wrote something much more interesting.

I also came to understand that a sober, observational mindset is the essence of a good set of sailing directions. They should be far more than merely arid descriptions of landmarks and courses to steer, or GPS coordinates. I found myself looking at the coastlines as larger tapestries. Years ago, approaching Santa Cruz Island from 10 miles offshore on a day with mediocre visibility, I gazed at the mountain peaks high up ahead. As we enjoyed a fine breeze that carried us inshore, I realized that the highest peak on the island lay directly above Fry's Harbor, one of the finest anchorages on the island. This landmark works like a charm, as does a low point that lies behind Prisoners Harbor, the major landing place slightly to the east.

Call this local knowledge if you like, but I learned my coastal navigation and Santa Barbara Channel waters long before the days of GPS and chart plotters and am glad I did. I remember once sailing out to Santa Cruz with a friend with a newfangled GPS years ago.

"How far off West Point are we?" he asked.

"Seven miles," I replied.

A boat lies at anchor in a sheltered cove on Santa Cruz Island's north coast, under the cliffs just east of West End. "This little visited, lovely spot with deep water close inshore is nice in calm conditions, but don't overnight here owing to surge and rocks on the bottom."



Point Conception, seen from the southeast on a classically windy day, is one of the beautiful and useful images from Brian's first guidebook. The breakers off the point show an unmarked offlying rock. If northbound, he advises spending the day "at Cojo Anchorage in the lee of the point and go north when (and if) the wind drops after dark...Southbound, tuck in a reef and enjoy."

The machine proclaimed it was 7.1 miles ahead. My friend was suitably impressed, but I had years of looking for local landmarks informing my navigational understanding.

These days, some might ask, why not just rely on GPS? I would argue that apart from the hoary old caution of unreliable electronics, you may know where you are within a few feet, but you still need conspicuous and inconspicuous landmarks visible at a distance or close to shore. You can probably rely on just GPS or a chart plotter



when approaching places like Catalina Island, but there are other waters where paper and electronics go best hand-inhand. Try navigating in shallow waters through the Bahamas or making your way through Baltic archipelagos where every island looks the same. The Swedish government charts come in flip format, each sheet covering a few miles. You must always know where you are visually within a half mile or less, GPS or not, or you'll be helplessly lost.

Visual cues are still a necessary element of navigating. A good case in point is the low-lying shoreline of Channel Islands Harbor and Port Hueneme as seen when approaching from the sea. A conspicuous power plant with a

single stack lies north of the harbor. Don't confuse it with another power plant with two stacks to the south. I found this out on a day when a strong post-frontal westerly was propelling us toward what was a then-to-me-unknown lee shore at dusk. Or, if you want to explore Lady's Harbor on the north coast of Santa Cruz, you need to look for a patch of gray soil—seabird droppings—on the east side of the narrow entrance. Call me old-fashioned, but even in relatively straightforward waters like Southern California's, I always ship out with a chart.

The joy of cruising my home waters lies not only in passagemaking, but also in the art of anchoring. And I use the term art on purpose, an art learned by hard-won experience lying in confined spaces and crowded bays, by dragging in the middle of the night, and by setting anchors bow and stern, essential in many Channel Islands anchorages. All the author of a guide can do is make suggestions. British Admiralty Pilots use wonderfully precise expressions. My favorite of their dictums is "anchorage may be obtained." How true! You obtain an anchorage by careful judgment of local conditions when you arrive, nothing less. No author can do this for you.

Which brings up the final point. Cruising guides are, in essence, sailing directions, which are based on the assumption that the reader will make seamanlike judgments on the spot. I was criticized for



Brian Fagan sailing in late 2019 in the Santa Barbara Channel, where his well-known cruising guides are based. Credit: Carl Enson

being "too severe" in the first edition of my book, but I'm unrepentant, despite softening the language in the next iterations. There are anchorages in our waters that are literally suicidal in strong westerlies or northeasterly Santa Ana wind conditions. All I can do as an author is remark that such-and-such anchorage is "dangerous" in southeasterly gales. It's up to the sailor whether to take my observation at face value. Seamanship is all about judgment. So are cruising guides as basically simple as mine or as elaborate as Adlard Coles'.

My guide has been in print in various editions since 1979 and is still widely used. It has been immeasurably improved by comments from users, who take the trouble to make constructive suggestions or to correct the inevitable errors. You have to have a thick skin, for there are readers who get pleasure from abuse and being rude, some of them, alas, sailors. Such critics forget that these are not books one writes for money. You write them as a service to others having earned your experience the hard way. 🥒

Brian Fagan is an archaeologist and retired University of California professor. He is the author of Cruising Guide to Central and Southern California, also several other books on cruising and numerous popular volumes on the past.

Directions for Sailing Directions-BF

Writing a cruising guide is not as easy as it seems, even with thousands of miles under your keel. Following are some hints on writing actual sailing directions, not background chapters, that I learned the hard way.

Cultivate an enduring curiosity and a mindset that depends on precise observation. Anyone can look up a position or a course these days, but what makes the real difference are your observations from sea level, made when vou are sailing.

Select landmarks that are visible at a distance or when close inshore. Many will be unchanging features like mountain peaks or prominent headlands. Others will be humanly constructed, such as a hotel building, a conspicuous feature like a freeway trestle, a lighthouse, or a factory building. Think colors. They can stand out more than the building itself. Small wonder that Admiralty Pilots refer frequently to conspicuous structures, shown on large-scale charts as "Conspic. White Ho." But wouldn't you know it, someone will invariably paint a prominent structure once we've all gotten use to navigating based on its color!

Adapt a relatively standardized format, which starts with general remarks, then describes the approach from different directions, followed by the entrance to the port or anchorage, then anchoring or berthing information. This makes the book much easier to use.

Keep your style brief, economical, and logical. Remember that a skipper will often consult these directions in less than ideal weather.

Be precise. It's no use saying, "Anchor close to the beach." Instead, try this: "Anchorage may be obtained in 25 to 30 feet with the yellow cliff on the east side of the anchorage about 150 yards ahead. Beware of seagrass on the sandy bottom." All the information the visitor needs is there.

Provide clear drawings and photographs, the latter taken from your deck. These are literally worth a thousand words and, if well-chosen, will save a thousand words. You're best off if you take the pictures on a calm, clear day. If you get several days of ideal photographic conditions, rent a motorboat and try and shoot as many anchorages as possible over a sequence of calm days.

Don't spend too much effort on detailing modern facilities ashore-they change all the time. Ask a local for the latest! But modern navigational aids like light buoys and lighthouses are another matter; emerging from a thick fog as evening gloom deepens and seeing a flashing light where it should be always fills me with a profound and inexpressible relief.

Above all, be accurate, as entertaining as possible, and listen to other sailors and critics. They often (but not always) know more than you do.



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Sleeping Beauty

Clever surgery on a standard bed mattress improves a V-berth's sleepability.

BY JIM SHELL

hen we bought *Phantom*, our Pearson 365 ketch, in 2001, my wife, Barbara, and I slept on V-berth cushions so thin and inadequate it felt like we were sleeping on bare boards. Adding a foam overlay was a slight improvement, as was a duvet with several quilts tucked inside, but none of these changes provided a good night's sleep.

We had priced custom-made mattresses that fit our V-berth, but we were reluctant to spend that much money on something we felt would be short-lived in the boat environment. Then one day we saw Ingrid, who worked at a canvas shop, doing surgery on a standard bed mattress. Snipping apart springs and cutting the rectangular shape to fit her V-berth, she repurposed the discarded bits to reshape the mattress and sew it back together. None of it appeared too daunting. I'd seen what was possible and was confident I could do the same.

On the garage floor, I laid out a 4-inchthick queen-size mattress from a discarded sleeper sofa. Directly on the single-sided mattress, I drew the shape of the V-berth with a magic marker. My lines made allowances for where I would need material for the re-sewing process, and before cutting I carefully unstitched the seam material I'd be reusing.

The mattress interior consisted of an outer cover, foam, padding, and "tubes" of coil springs. I disassembled and discarded the springs that would lie outside the new V-berth shape and securely tied together the remaining springs. After sewing shut the padding and cover, we put the newly shaped mattress on top of the existing V-berth cushions and slept like babies.

That was 12 years ago, and all has been well except that in making that big, single-piece mattress, we failed to plan for accessing stowage areas under the V-berth. We've lived with it, but it was finally time for a new and improved version. This time around, rather than a single mattress, I planned to make two side-by-side mattresses that fit our V-berth. Instead of a single-sided, 4-inch sleeper sofa mattress, we started with a

The boat's original V-berth cushions were too thin to provide enough comfort for a good night's sleep. The first mattress transplant resulted in a single, 4-inchthick mattress shaped to fit the V-berth. It worked well but made access to storage beneath problematic.





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standard 8-inch, full-size, double-sided mattress. Since either side of the new mattress could be a top, I could cut it on the diagonal and make both V-berth halves from the single mattress by flipping one half over after cutting the mattress apart.

I created paper templates of each side of the V-berth mattresses to move around on a paper template of the full-size mattress. I drew the planned shape of the new V-berth mattress on the double mattress with a magic marker, and a mark between these shapes became the line to cut the cover open. I made the cut gently to preserve all available materials, padding, and foam. Carefully, I exposed the springs and cut them using a bolt cutter, then separated the two halves.

Once I flipped one half over, the 76-inch sides lay together to create the V shape. I trimmed the springs and wired them to fit into the desired configuration. I bent and secured all the ends, making sure that no sharp metal pieces remained that could work their way to poke out of the mattresses. Then I securely wired the

Tools and Tips—JS

The interior construction of mattresses will vary, but a thoughtful analysis of the construction technique will determine what will be required to arrive at the desired shape. Inner spring mattresses have a pattern of coil springs that are secured by clips and smaller coil springs. Measure twice, cut once, and have Band-Aids ready: Those cut spring ends are very sharp! I'm unfamiliar with foam mattress construction but no doubt these can be cut to size as well.

I recommend making the mattress a

springs together to maintain the shape and structural integrity of the mattresses.

Next, I added foam and batting to create a smooth, comfortable side and corners. I hand-stitched lightweight cotton canvas as the new side panels.

This two-piece, 8-inch-thick mattress is even more comfortable than the first 4-inch mattress we fabricated to place over the boat cushions. It's still a bit inconvenient to access the storage beneath—when you flip one side up, the bed clothes get messed up and need to be rearranged—but little oversize if fitting it into a space like a V-berth; you can always go back and trim it down more if needed. Additional foam and batting may be needed to fill any edge and corner voids; these are readily available at craft stores like Michael's, Hobby Lobby, and JoAnn Fabric and Craft.

Tools and materials required are: a bolt cutter; side-cutting pliers; wire-twisting pliers; iron wire; foam and batting; needle and thread; scissors; rulers; tape measure; marking pencils; and magic markers.

Before making any cuts, Jim used craft paper to create a template of the new split V-berth mattresses on the shape of the full-size mattress, below left.

Jim transferred the template to the mattress, using markers to outline where to make the cuts, below right.

The initial cut exposes the mattress' foam; the springs are beneath this layer, bottom left.

Once the foam layer is pulled back, the springs are ready to be cut, bottom right.





it's easier than lifting or removing an entire mattress.

As to whether the mattress would withstand the boat environment, we used the original 4-inch mattress for 10 years without rust, mold, mildew, or water saturation issues, and the new mattress is holding up fine so far. Just in case there are any unexpected leaks, we protect the bedding with a waterproof cover when we are absent from the boat for any period of time.

Except for the price and the reality that

I'm not a professional upholsterer—and the finish on the seams and cut sides of the mattress reflect this—these mattresses are nearly identical to the expensive custom-manufactured V-berth mattresses sold today. I'm not a master craftsman, just a guy handy with common tools. I recommend anyone in need of a more comfortable night's sleep aboard to get in there and give this a try.

Jim Shell's bio can be found on page 25.

The springs, fully exposed, are ready to be cut to fit the new shape of the mattress, at top left.

Once the diagonal cut was fully made, Jim separated the mattresses, which already resembled their intended new shapes, at top right.

The newly rebuilt mattresses, waiting to be installed, at bottom left.

The new, 8-inch, split V-berth mattresses fit perfectly. And, one side can be lifted to access storage beneath the bunk, at bottom right.

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Sole Mate

A recycled plastic vinyl overlay brings new life to a worn-out cabin sole.

BY GARY GERBER

fter 45 years, the teak-and-holly cabin sole of *Captiva*, my 1970 Morgan 33, was not looking so great. I couldn't imagine that refinishing the sole was going to give me the like-new look I wanted, and for a while I considered replacing the sole with new teak-and-holly plywood laminate. Then I learned that for the same price I could install Plasteak vinyl flooring. Reasoning the

Plasteak would be easier to clean and maintain, that's what I went with.

The material—which is made from recycled plastic has a satin finish and promises good resistance to water damage while always looking fresh. The manufacturer sells 6-foot-wide sheets by the linear foot. I purchased 8 linear feet to ensure that the three cabin sole levels would have a grain pattern running in a

The old teak-and-holly sole next to the new Plasteak flooring.



common direction. The cost, at \$50/linear foot, came to \$400.

My Morgan 33 has three separate cabin sole sections, and all three have canted floor portions. I did not want any open-joint interfaces that could encourage abrasion or water intrusion, so after testing the idea I determined I could score the vinyl backing with a mat knife and achieve a perfect unbroken angle bend on the exposed surface.

I made full-size, craft-paper patterns of each of the three areas and test fit the paper patterns on the sole. I then laid the paper patterns on the vinyl stock and used a mat knife and metal rule to cut each piece. I traced the cant score on the underside of the forward cabin piece, the dining piece, and the main sole piece. The main sole section also had a rectangular area for the lift-out bilge access panel.

After cleaning the original sole with heavy-duty soap, rinsing with water, and allowing it to dry, I sanded every square inch to scuff the surface. Next, I applied blue painter's tape on the vertical surfaces at the floor edges to protect them from the adhesive I planned to use to glue down the floor. I mixed two-part Lonseal epoxy adhesive and spread it evenly on the floor surfaces, one section at a time. With assistance, I carefully placed each cut vinyl piece and used a pressure hand roller to insure good adhesive bonding and no bubbles.

I faced the lift-out bilge access panel (3/4-inch-thick marine plywood) the same way and then used tan plastic T trim to finish the edges.

Because the 1970 Morgan does not have a molded fiberglass floor section, I did not want the cut vinyl to simply butt against vertical surfaces. To finish these intersections, I purchased solid teak battens $(\sqrt[3]{8} \times 1^{1/2}$ -inch) and ripped the lengths in half to $\sqrt[3]{8} \times \sqrt[5]{8}$ inches. I custom cut each piece to fit in place as baseboard trim, covering the entire perimeter of the cabin sole. I secured the trim using flat-head brass screws.

I finished this installation three years ago, and the cabin sole looks as good today as the day it was installed.

Gary Gerber, a retired industrial designer, has been sailing for more than 45 years in coastal New England, the Caribbean, and the Mediterranean. He lives in Annapolis and sails his 1970 Morgan 33 on Chesapeake Bay.

(opposite page) Before cutting the new material, Gary made paper templates and test fitted them on the sole. Note the canted sides, at top left.

Throughout the application, a pressure roller and elbow grease helped ensure the new overlay was firmly and smoothly stuck, at middle left.

The dining area floor is shown installed, before mounting the teak baseboard trim. Painter's tape protected the vertical surfaces from stray contact adhesive, at bottom left.

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Between the main cabin and forward cabin soles, Gary installed a piece of teak to bridge the joint where the floors met, at top right.

To complete the new flooring and protect all the edges and interfaces, Gary installed teak baseboard trim with brass screws, at middle right.

The finished floor, with teak trim installed along the sides throughout, at right.







Hot Stuff

A simple, low-cost stovetop heater takes the edge off a chilly cabin.

BY DREW FRYE

ew sailboats have a dedicated heating system for warming the cabin, something built-in and properly vented. This makes sense because a cabin heater with a flue can be a complicated, bulky, and expensive affair, and something that's perhaps used only on occasion. So, when it's cool and we decide to spend a night swinging on the hook, away from shorepower, many of us rely on portable heaters, usually propane.

A portable propane heater can do the trick, but these heaters also require ventilation as they consume oxygen and emit water vapor and carbon dioxide—and produce carbon monoxide as a byproduct of

incomplete combustion. The rough-andready solution is to crack a window, but how wide? And then how much of the heat is lost?

There is another approach, a simple, non-bulky, low-cost solution that uses an existing onboard heat source: the stove.

The stove can't tip and start a fire (unless something combustible falls on it, which can be prevented by maintaining a clear countertop). And although stoves generally don't include an oxygen depletion sensor like you'd find on a portable heater, it's easy to add a carbon monoxide monitor to the cabin.

All that's needed to turn the stove into an effective, ventilated cabin heater is to provide a heat transfer surface and a way to funnel the exhaust outside the cabin. In fact, the ubiquitous Sig Marine (now Dickinson) Cozy Cabin heaters are not much more than this: a simple burner below an inverted-can heat transfer space, connected to a 1-inch stainless steel flue.

The stove aboard my boat is an Origo 2000, a non-pressurized alcohol



The stovetop cabin heater in place on top of Drew's Origo 2000 alcohol stove. Note the upper pot on top, which increases heating area and also can be used for cooking while the heater is operating.

stove fueled by denatured ethanol. I have turned it into an efficient, safe heater by using a retired, upside-down stainless steel soup pot as the heat transfer surface, resting atop the burner. Here's how I did it.

First, I cut a 1-inch flue opening in the side of the pot with a hole saw, into which I inserted a 1-inch copper pipe stub. I attached the pipe by slotting to create tabs inside and out, which I secured with small bolts (blind rivets would have been a cleaner solution). Next, I added a 3-inch-high flashing skirt to accommodate and hold a pot on the top. The skirt also improves the seal around the flue exit.

For the flue, I attached 1-inch (ID) corrugated stainless steel duct to the copper stub on the pot, using a cotter pin driven through both. There is no need to seal this connection because the entire length is under slight suction. This flue must rise steadily, without low spots, and be 3-6 feet long.

The first season I used my heater, I kept the exhaust system simple. I cut a 3-inch-

wide board to fit the aft end of the companionway slider, drilled a hole in the board, and passed the exhaust end of the flue through it. This way, I didn't have to drill a hole in the boat.

But after realizing my heater worked, and that there was nothing to improve, I drilled a hole in the cockpit bulkhead for a permanent flue, which is just 3 inches

Keeping a Clear Head—DF

I value my brain cells and will not take risks with them; I've never been a fan of portable heaters.

Carbon dioxide concentrations over 1,500 ppm affect thinking and are universally considered cause for investigation and correction. Over 2,000 ppm is considered serious by health departments. Ten-thousand ppm is the threshold of serious problems with medium-term exposure (many hours to days), and both OSHA and NIOSH limit workplace exposure to 5,000 ppm.

I did a few simple calculations for my Corsair F-24. If I run an unvented portable propane heater at about 4,000 Btu/hour (what is required for a 45° F evening), assuming no ventilation other than combustion air replacement, carbon dioxide levels will reach 60,000 ppm within six hours, about the threshold of unconsciousness.



of 1-inch copper pipe. There's no need to insulate the pass-through because the flue temperature never exceeds 120° F. So far, rain has not blown in, and I could easily cap it if necessary. If the wind is from ahead or the beam as it would be sailing or at anchor, the draft is fine, but if there's a strong wind from astern—for example in a marina—it can blow the draft into the cabin. I keep a 1-inch copper 90 el, which, when pointed up, solves that.

The burner on my Origo 2000 stove is rated at 7,000 Btu. Because my stovetop

Materials

- 1-inch ribbed duct hose, stainless. McMaster Carr 5241K13, \$23.80 for 5 feet
- 4-quart stainless soup pot, thrift store or surplus
- Aluminum flashing
- 6 inches of 1-inch copper tubing
- (1) 1-inch copper 90-degree el
- Assorted small screws and two long cotter pins or nails
- Plywood or similar to build slider insert, or better, install the flue through cabin roof or bulkhead if you will use the heater often

The flue outlet is a short length of 1-inch copper pipe passing through the bulkhead, above left.

Drew vented the first version of the stovetop heater through a board he fit into the aft end of the companionway slider, passing the flue through a hole, below left.

For the updated version of the stovetop heater, Drew drilled a hole through the bulkhead and passed the flue hose through it. The flue is only hot to the touch for the first 18 inches, and by the cabin roof it is cool, below 80° F, above.

heater uses the same flue size as the 5,000-Btu Sig Marine Cozy Cabin heater, I decided to not exceed that combustion rate and keep the burner valve between $\frac{1}{2}$ to $\frac{2}{3}$ open. This will give a heat output of about 1,500 watts, enough to fully warm

the cabin of my 24-foot boat in 10-20 minutes in cool to cold weather. If I can feel some of the exhaust backing out from under the inverted pot and into the cabin, I know the burner is firing too high.

To confirm the heater's efficiency and safety, I took some measurements. I wanted to be sure the exhaust was leaving the cabin, so I scanned the surface and flue with an infrared thermometer. The pot surface reaches about $290-340^{\circ}$ F. By the time the exhaust reaches the outlet, it has cooled to $80-120^{\circ}$ F, proving high efficiency. I tested the air $\frac{1}{2}$ -inch below the lower rim of the pot, curious whether some of the exhaust was sneaking



The Flowerpot Heater Myth—DF

The story goes like this: Place a flowerpot over a stove burner, and you have an effective, safe cabin heater for peanuts. Thermodynamics says otherwise, but I decided to test this myth anyway, because it would be great if it were true. Unfortunately, none of it is true, except for it being cheap.

Without regard to the *efficacy* of the flowerpot heater, using one can be dangerous. About 60 percent of glazed pots and 30 percent of unglazed pots I tested shattered violently at 400° F, throwing large, hot pieces of pot 2-5 feet. Only by limiting the temperature to 300° F (by keeping the flame quite low) was the shattering risk reduced to an acceptable nonviolent level. Considering that even Corningware is not stovetop safe, this should be obvious.

I used small (5- to 6-inch-diameter) and large (7- to 9-inch-diameter) clay flowerpots over a natural gas flame (bear in mind that propane is a little hotter, alcohol a little cooler). I measured pot temperatures and cooling rates, and I calculated radiant heat output of the naked flame and burner grate, and of the pot and burner grate. It's important to note that when the pot is on the burner, any heat radiated by the naked flame, burner, and grate is blocked by the pot.

First, some basic physics. All heated materials absorb and then radiate heat. The amount they radiate is proportion-

al to the fourth power of their temperature, as measured on an absolute scale, either Rankine or Kelvin. The hotter they are, the more they emit and the shorter the wavelength of the emissions.

Radiation is just one method of heat transfer; the others are conduction (the direct transfer of heat between solid objects in contact with one another, like how a hot pot heats the metal handle attached to it) and convection (the movement of heat energy within a gas or liquid, like how a heat source warms the air near it and that air begins to move and circulate). But it's only radiant heat that is relevant to the question of whether the flowerpot heater offers a benefit. This is because for conductive heat to offer any benefit, you'd have to hold the pot. Convective heat isn't very relevant either, because the balance of the heat in the flame would end up mixed in with the cabin air anyway.

A 7-inch flowerpot heated to 320° F emits about 150 watts (500 Btu) of thermal radiation. If the pot reaches 400° F, the amount of radiation emitted increases to about 370 watts, or about 1,100 Btu. In contrast, a naked propane flame is over 1,500° F and the burner grate will reach 400° to 800° F, depending on location. The radiation rate of the flame and grate alone is greater per unit area than that of the flowerpot, but the area of the flame and grate combo is much smaller. The result is that the pot offers little increase in the amount of heat radiated.

On the other hand, portable propane heaters, like the Mr. Heater line, heat a ceramic grid red hot (about 2-3 times hotter than the flowerpot on an absolute scale), and are thus 20-80 times more efficient at converting fuel energy into radiant heat. However, that does not mean they create more heat; the total Btu is fixed by the amount of fuel burned and cannot be increased.

It's often said that the heated pot stores and releases heat over a longer period, thus keeping the cabin warm long after the stove is off. This sounds good but isn't really accurate. First, a large pot will cool relatively quickly, smaller pots even faster. A 9-inch glazed flowerpot that starts at 300° F drops to 195° in five minutes, 130° in 10 minutes, and at a half an hour is at 85° F. The same pot starting at 450° F drops to 345° in five minutes, 280° in 10 minutes, and is at 110° in a half an hour. The hotter the pot, the faster the cooling.

Second, a large pot that weighs 3.2 pounds doesn't store a lot of heat, a smaller pot even less. The specific heat of brick clay is .22 Btu/pound, and let's say, for example, that a large pot cools from a high of 450° F to a low of 55° F overnight. The heat released by the pot is 278 Btu.

By comparison, let's say the cabin sole, bulkheads, and furniture have all been heated to 70° F during a typical day, with the air temperature dropping quickly after sunset. The specific heat of pine (for example) is .66 Btu/pound. Assuming there are 500 pounds of furnishings, linings, flooring, and supplies in the cabin, with an average specific heat value equivalent to pine, the heat capacity of the cabin infrastructure is about 6,600 Btu. Additionally, the cabin furnishings will cool much more slowly, because at any given time, the temperature difference between the furnishings and the cabin air is very small. As noted above, hot objects cool far more rapidly than cooler ones. Thus, the clay pot represents

Drew busted a lot of pots to bust the flowerpot heater myth. In this case, when heated to 320° F, this pot shattered, throwing bits as far as 6 feet.



only 4 percent of the heat holding capacity of the cabin as it cools during the evening (and this heat is given up within a few minutes). A rounding error at most.

Bottom Line: If it is merely cool, pull on a sweater. You can run the stove for a few minutes now and then, cooking a meal or making tea. This is less wasteful and just as effective as the flowerpot. If it is actually cold, install a proper heating system. The benefits of a flowerpot on the stove are at least an exaggeration, and more realistically, a dangerous myth. out under the bottom; the carbon dioxide level was barely above background, and the temperature never exceeded 200° F, confirming that essentially all of the exhaust goes up through the flue.

The purpose of the flashing rim and upper pot is to add heat transfer surface area and improve heating efficiency. Most of the time, the upper pot will be empty. But if I crank the burner to high and add two cups of water to the upper pot, the water will boil in 10-15 minutes. With the burner turned down—as it should be to warm the cabin—it will simmer soup, without burning or polluting the cabin with carbon dioxide.

Another advantage my vented, stovetop heater has over a portable propane heater is dryness. Burning propane (or alcohol) produces water vapor. Dry air is nearly as important as warm air to comfort because insulation remains more efficient. An unvented heater will raise the humidity 30-60 percent, making for a clammy cabin and causing condensation on the windows—not a problem with the vented heater.

This heater will work with stoves burning alcohol, propane, CNG, butane, and kerosene, as long as the firing rate is similar. The differences in combustion are small.

Although the heater is stable enough to be used underway, the pot on top is not. Also, I don't leave the heater on while I sleep. It's not designed for that, and I like sleeping under a thick quilt or in a warm sleeping bag. Nor do I leave it on while away from the boat. I run it from sundown, through the dinner hour, until ready for bed. I use a carbon monoxide monitor, and when cooking on the stove, I usually crack the companionway slider to evacuate water vapor.

A stovetop cabin heater sure beats cold fingers or a warm, damp cabin. More importantly, it avoids low oxygen and high carbon dioxide, and minimizes carbon monoxide accumulation risk.

Drew's bio can be found on page 21.

Drew stirs up something yummy in the upper pot portion of the stovetop heater. Cooking takes longer than it would on the flame, but you won't burn anything. When cool, the heater can easily be moved to one side for proper cooking.

ILLUSTRATION BY FRITZ SEEGERS

continued from page 7

The Right Community

When you published my Learning Experience story ("A Squall, a Broken Shackle, and Hydrolock," September 2019), I halfway expected to see letters to the editor from readers opining that we should have done this or that, or questioning our judgment or lack thereof. I underestimated the Good Old Boat readership when I anticipated negative comments. Subscribing to Good Old Boat means belonging to a community of sailors who share an interest in enjoying boats, sailing, and helping others by sharing their experiences. I subscribe to a motorsports magazine that sends a daily email news update. Those readers seem to use the comment section of that email to compete to see who is the smartest with the most expert opinion on motor racing. Some of them do this by denigrating the expertise of others. The editors are forced to regularly delete comments. I've stopped reading them. Good Old Boat editors should take pride in the community they've created.

-Ed Lawler, Richmond, Rhode Island

Hobie Was Second

Regarding Drew Frye's article on multihulls in the November issue ("Good Old Multihulls"), I would like to suggest one correction, assuming my 75-year-old good old brain is correct. While Hobie Alter had a better press agent, I think his catamarans were not the first production small cats. As a sailmaker for Fairclough Sailmakers, then located in Byram, Connecticut, I helped to make sails and canvas decks for the Aqua Cat by the hundreds during the early 1960s. I think the company's name may have been American Fiberglass, and the Aqua Cat consisted of two fiberglass hulls held together by aluminum frames, over which a heavy fabric deck supported her crew. Production started around 1960 or 1961, first in Connecticut, and later down south, perhaps South Carolina?

-Perry Hood, Newport, Washington

Perry, your good old mind is correct. According to sailboatdata.com, nearly 25,000 Aqua Cats were built, beginning well before Hobie Alter got started. In fact, the Aqua Cat's designer, Art Javes, once said of Hobie Alter, "I met him at a boat show in Anaheim, California. He had the neighboring booth, selling his surfboards. I introduced him to the Aqua Cat. A while later he called me and said, 'You're going to hate me,' and said he was going into the catamaran business. I said I didn't mind. Having another catamaran around would only help people get the idea that sitting on a boat is better than sitting in it."

-Editors

Spring Is Here

Over winter, I store *Comfort*, my 1973 Grampian 30, at Bert's Boat Yard. It's up the Fore River, on the northern shore of Weymouth, Massachusetts.

Bert's is owned by the South Shore Yacht Club (SSYC), having purchased the yard after Bert passed away. There is nothing fancy about Bert's, but fees are reasonable and boat owners can work on their boats or hire tradesmen.

Come spring, Bert's is a hive of activity. Boats are uncovered, washed, and waxed. Bottoms are painted and repairs or upgrades are done. Everyone's eager to launch. Yet, during the rush, we pause for refreshment and friendly conversation. Each spring there is a cookout (and one in the fall) with a flaming barbeque and coolers full of cold beer. The turnout is always good.

I look forward to my time at the boatyard as much as any other part of owning a boat. I take pride and pleasure in the fact that I can keep a good old boat shipshape and in

Bristol fashion. As *Comfort* hits the water each spring, I pause to remember Gordon, a good friend and Bert's volunteer who has since passed away. Each spring, he would stand at the launch ramp and call out to each boat as it was launched, "Have a nice summer, see you in the fall."

-Jim Donovan, Comfort

A Gem

I thoroughly enjoyed reading about Lee Brubacher's Newbridge Topaz project ("A Hidden Gem," January 2020), an unwanted orphan abandoned more than 20 years earlier and given away for free. I would say it was more resurrected than restored. In case anyone missed it, I encourage readers to check the *Good Old Boat* YouTube channel for an inspiring video of the project.

-Dan Fortson, Portage, Indiana

Mooring Warning

In his Learning Experience article, Travis Weaver describes tying his mooring lines to the eye atop the mooring ball in Puerto Escondido ("Blown Away," January 2020). As a heads up to anyone who may moor there in the future, those buoys are designed differently than some others in that a boat's mooring lines should only be tied to the pennant line which is attached to a swivel below the ball. The eye on top of the ball is not suitable or recommended for mooring a boat.

—Terry Kotas, Cetus, Puerto Escondido, Baja California Sur

Black Light Danger?

I'm a huge fan of Robin Urquhart and Fiona McGlynn's insightful writing. They are at the top of their game and kudos to *Good Old Boat* for putting them on the masthead and promoting waterbornemag. com. But Robin's recent suggestion for creating black light by filtering regular incandescent light should be approached with care and caution ("Bolts From the Blue," November 2019). Humans see as colors only the middle wavelengths of light (roughly 400-700 nanometers, or nm), feel as heat the longer infrared wavelengths (above 700 nm), and get sunburns and skin damage from the shorter ultraviolet wavelengths (below 400 nm). Incandescent light has very little of Robin's desired shortwave ultraviolet light (LEDs even less), and efforts to filter out and block everything but shortwave ultraviolet light (also known as UV-A light) must generate heat, possibly a lot of heat. Several backyard science experts caution that the heat generated by blocking strong light sources in this way can result in fires. I understand being a sailor far from resources and resorting to all sorts of expedients to solve problems, but perhaps there is a safer way. Chemist and Good Old Boat contributing editor Drew Frye might comment on the safer homegrown means to color metal to reveal cracks and pitting using vinegar, lemon juice, food coloring, avocado pits, or urine?

-Tom Misa, Lopez Island, Washington

Robin Urquhart responds:

Thank you, Tom, you bring up a good and interesting point regarding making "black" UV-A light. When making a black light, the goal is to block the visible light wavelengths so that only ultraviolet and infrared wavelengths get through. In fact, black lights are often known as Wood's Lamps, because the first black lights were made using incandescent bulbs and a special type of glass invented by Robert Wood that blocks the visible light spectrum. As you pointed out, the energy of these blocked photons does not disappear but is converted to heat energy. However, the power output of a typical household incandescent bulb (especially one in a flashlight like I used) is not enough to be a fire hazard when the visible

portion of its power output is converted to heat energy (though it will reduce the life expectancy of the filament by 90 percent). And as you suggested, there are other, possibly better, DIY options for identifying pitting, stress fractures, or other imperfections in metal.

Drew Frye weighs in:

As a licensed American Petroleum Institute tank inspector (the 200 to multimillion-gallon steel tanks you see in fuel farms), I have done a lot of non-destructive testing of metal tanks looking for flaws. I mostly use ultrasound, but I have several thoughts here. First, it's quite rare for penetrant testing to reveal a flaw that could not be discerned by close visual inspection. I recommend cleaning the surface well and examining it closely with the naked eye and a magnifying glass in bright, glare-free light. In my experience, effective use of a UV-A light to reveal flaws requires light that is exceptionally bright (possibly dangerously bright) or a very dark viewing area (often not practical). Accordingly, a lot of penetrant testing is done with non-UV-sensitive dyes.

That said, the most important thing is the procedure. The dye must be bright and dissolved in a solvent that can penetrate. If the part may be wet, water-based dyes work (keel bolts). If there might be oil (engine parts), a petroleum solvent is better. Note that dye and pigment (paint) are different; dyes are dissolved in the solvent and will go wherever the solvent goes, but paint pigments are larger suspended particles and will not penetrate the smallest cracks. Sharpie dye (solvent) or highlighter (some are water-based) should work in the field, applied very heavily. Keep in mind that dye testing can't always reveal

Department of Corrections

Sharp-eyed reader Michael Richmond caught our only error in the November issue. In John Vigor's story of the Salish Sea's Portland Island ("An Island to Remember"), John named a stately boat that entered the bay in which he was anchored. He identified her as *Marigladis*. Michael wrote, "*Gladimaris* is the name of the beautiful vessel John saw. It's a 103-year-old, 35-foot gaff cutter owned for 30 years by the current owners, my liveaboard neighbours here in Sidney, British Columbia." We asked John what he thought.

"I was sitting in the cockpit of my Santana 22 when a beautiful old-timer came ghosting across the entrance to the cove we were anchored in. I hopped into my dinghy and sculled out to get a better view. I talked to the people on board and noted that she had an unusual name. I had neither a camera nor a notebook with me, but I figured I could remember the name until I got back to my boat. Apparently, my grey matter was not up to this simple task. My humble apologies to that lovely old cutter and her owner and crew."

-Editors

the difference between a concerning crack and an insignificant scratch. Heavily scratched bolts and plate parts are hard to examine. Dye is most valuable in examining larger areas and long weld seams.

Pitting is different from cracks. Cracks are always serious. Pitting can be very shallow and does not always correlate to much loss in strength. Try to determine whether the pits are shallow and rounded, or whether they lead into cracks or deep, narrow pits, which may become cracks. The amount of stress is also important in evaluating seriousness; pitting in a tank or hull plate is probably no more important than the reduced metal thickness, but pitting in a seam, chain plate, or keel bolt can be very serious, depending on the location and depth.

I'm not up to speed on the avocado pit and urine method.

Corrosion Concern

I read Drew Frye's article on water tanks ("Water Works," January 2020). He doesn't indicate whether his cleaning approach is just for plastic tanks. Many of us have stainless steel water tanks in our boats, and I don't think it's considered safe to use bleach-containing products in stainless steel tanks. Please let me know.

-Del Grindle, Bellingham, Massachusetts

Drew Frye responds:

Hi, Del. It's okay to apply the instructions in my article to a stainless steel tank. Household bleach solutions contain roughly 5.25% sodium hypochlorite. Sodium hypochlorite is the oxidizing agent that will corrode stainless steel. The American National Standards Institute (ANSI) tank sanitizing method I included in my article is globally accepted for sterilizing plastic, stainless steel, and aluminum tanks, and calls for a solution of about 40 ppm sodium hypochlorite. This is accepted as harmless for periodic use in tanks made from 300-series stainless steels for up to 24 hours. In the instructions, the specified standing time is only four hours, after which the tank is rinsed. Continuous exposure to maintenance chlorination level (0-3 ppm, depending on the water) equivalent to what is found in tap water is known to be harmless.

Those with aluminum tanks and those who are concerned about the effects of chlorine on other materials in the potable water system can use sodium dichloroisocyanurate (NaDCC), as described in my article. In short, it is a buffered form of bleach, which has shown to be 20 times less corrosive. The EPA and WHO approve NaDCC for this purpose. The most common product is AquaMega Tabs from Clean Tabs.

Sanity Preserved

I want to thank Dave McCampbell and his wife, Sherry, for coming up with such a simple solution to a free spinning prop ("Spin Doctor," January 2020). We converted our Sabre 28 to an electric boat, and now sailing over 3 knots causes the prop to spin. Although we do generate some power when this happens (1-1.5 amps), the noise drives me crazy, and I'd rather not have the wear and tear happening on the drive. I've thought about how to solve the problem without spending a lot of cash on a shaft brake. What a great solution, thanks!

-Bob Jennings, Greenfield, New Hampshire

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Being Big Brother

Last year, as hurricane Dorian headed for Florida, I was forced to evacuate, leaving my schooner *Britannia* to fend for herself in a Cape Canaveral marina. For two days I worried about how she was faring. *Britannia* did fine, and shortly afterward, I acquired a FloatHub monitor.

The concept is simple: I connect any of my boat's instruments to the small FloatHub box $(3x5x1^{1/2})$ inches), and the data from my instruments is broadcast to the FloatHub server and then to the FloatHub app on my phone or computer. I connected my wind and depth gauges to FloatHub. I also ran the bilge pump circuits through it so I can be alerted when they run. I connected my batteries to it so I can keep an eye on their state of charge. In addition, the monitor independently measures and reports data like temperature, pressure, and GPS position (the latter is great for tracking a stolen boat, or one that's drifted from its mooring). FloatHub operates on the NMEA 0183 protocol, and will reportedly soon support NMEA 2000. After wiring everything together, it all worked automatically.

FloatHub needs a connection to transmit and accordingly sells two models. For boats in a marina with always-on wifi, the wifi-only model might be a good choice. For boats without constant wifi access, the wifi/cellular model is the answer. The latter costs a bit more up front and requires a data plan purchase (currently \$9.99/month or \$99.99/year).

FloatHub must be connected to power and any instruments connected to it need to be left on, but power draw is minimal, and a boat that is connected to shorepower or a passive charging source, like wind or solar, should be fine.

I'm not looking forward to the next storm, but it will be interesting to see—no matter where I am—what is happening aboard *Britannia*.

For more information, floathub.com

-Roger Hughes, Good Old Boat contributor

Clean Prop for Christmas

We launched Christmas the first week of June 2019 and hauled her out late October 2019. This is our typical fivemonth sailing season on the coast of Maine. Before launch, I prepped the prop (which was removed due to shaft replacement) for an application of Propspeed, an antifouling treatment for propellers. As advised by the folks at Propspeed, I sanded the prop by hand with 80-grit sandpaper. A Propspeed technician visited the marina to apply the product, which is what they advised for this test. Propspeed appeared nearly clear and quite thick after application. It feels almost tacky to the touch, although it is quite dry.

During the season, the prop performed perfectly. There is no way to tell whether the coating enhanced performance, but it seemed particularly easy to reach hull speed under power this season. Toward the end of the season, when growth on the prop typically diminishes efficiency, performance was still tops, even in reverse, where growth really takes a toll.

At haul out, there was the usual growth on the hull and some minor growth on the prop. (To be fair, I hadn't used the boat for more than a week when she was hauled out.)

After pressure washing the hull and prop, I inspected the prop, and the Propspeed coating looked completely intact with no voids. There were a few barnacles still stuck on the hub (easy to remove), but this seems to be an effective multiseason coating.

For more information: oceanmax.com

—Tom Young, Good Old Boat contributor

We present these profiles as a service, as firsthand accounts from fellow boaters. Neither *Good Old Boat* magazine nor the folks who profiled the products on this page were paid for these profiles. Most products were sent to *Good Old Boat* for review consideration by the manufacturers. We profile only a small percentage of the products that marketers contact us about, choosing only those we're interested in, in the hope you're interested too. A few products we pick up on our own, because we want to share.

Good Old Classifieds

Boats for Sale

Rhodes Bounty II 41 1961. A fine example of early fiberglass Philip Rhodes design. One of about 12 finished by Palmer Johnson (Wisconsin) to a higher standard. Well maintained. Westport, MA. \$39,500.

> Carl Tripp 508-636-4058 carl@fltripp.com

1974. This is a very special boat, combining beauty, speed, and outstanding handling. One of Bob Perry's favorites! Well equipped: AP, radar, full instrumentation. Bottom redone in 2019. New Perry-designed rudder. Canvas recently rebuilt. New "base" electrical system, including new alternator, smart regulator, batteries, starter, etc. Well cared for and ready to sail away. Annapolis, MD. \$29,900.

Nikos Singelis 202-374-3288 nsingelis@aol.com

Morgan 25

1967. Go vintage! Well maintained. Fiberglass aft-cockpit sloop, LOA 24'11" Draft 2'9" Honda 4-stroke 9.9 OB. Ready to sail w/new bottom paint, professionally cleaned sails (2 sets), RF jib, boom vang, spinnaker, sail covers, new halyards, head, V-berth, galley, sleeps 4+, new custom companionway doors still in box, 1,900lb lead ballast, dual batteries, many upgrades. Charlie Morgan said by phone, "It will sail around the world." Sailed Maine to Miami, so far. Oak Harbor Marina, MD. REDUCED to \$4,000.

> Michael Thompson 410-551-3043 thomahawk@verizon.net

Rhodes Custom 43 1967. CB yawl, custom design, launched 1976. Beam 12', draft 4.5'/8', 65hp Volvo diesel (low hrs). Spare rigging set, RF headsail, 4 sails. Annapolis, MD. \$30,000. Barry Gruber

gruberbarry2@gmail.com

Allied Seawind MkII Ketch 32 1977. Freshwater ocean boat. Westerbeke 30 diesel 2,900 hrs, AP w/ remote, new Mack sails, running rigging new 2014, fridge, cabin furnace. Schaefer RF 2019, FB main 2017, spinnaker w/sock, D/S/W (Data Marine), 4 house batteries, 1 start battery (all 12V), 2016 125amp alternator. Upper deck spotless. Beautiful teak belowdecks. Boat owned, meticulously maintained by current owner since 1994. All records complete. Boat is turnkey cruising ready. Much more! Addl photos avail. MN. \$36,200.

Harry Mott 507-261-7473 gemsailingmn@gmail.com

East Coast Oyster Boat Design 17 1956. Wooden gaff rig w/jib, had it 40 yrs. Wife and I restoring 3rd time. 40% remaining. 8hp IB. New main, older jib. Sleeps 2, porta-potty. Bronze fittings and rub rail. Canvas-over-plywood deck. Boat covers. Very good trailer/tires w/ spare. Compass/depth sounder. Waseca, MN. \$6,000.

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

Mirage 27-2

1979. Robert Perry design. Length 27'11" Beam 9'3" Draft 4'4" Sail Area 313 sqft Bal. 2,200lb Displ. 5,200lb 15hp OMC Sail Drive (Gas). 130 + 150 genoas and yellow/black symmetrical spinnaker w/pole. Imron-painted topsides '96, still exc cond. VC 17m bottom paint. 2 reefs, Unit O Harken furler, Harken main traveler, windward sheeting car, and Harken mainsheet blocks. Placed in several Leech Lake Regattas, winning divisional trophies. Includes tandem-axle trailer, and Ship Shape Products winter cover. \$10,000.

Mark DeSchane mvdeschane@paulbunyan.net 218-732-489

Camper & Nicholson 32 1966. Restored. Replaced during a 17-yr dry dock: all rigging, main & 130 jib, t-hulls, and systems. All surfaces stripped and repainted, wood varnished. New dodger, sails, sail covers, etc. Many custom improvements, including opening bronze ports, 2nd fuel tank, feathering 3-blade prop. '85 Yanmar w/only 16 seasons of use. 32.75' LOA 9.25' Beam 5.5' Draft 13,660 Disp. 6,000lb lead Bal. Faired bottom ready to launch w/ Pettit Vivid. Ashland, MA. \$19,500. James Taylor

774-279-5018 jimt999@verizon.net

Alberg 30

1966. Well-maintained, Universal diesel, RF jib, all new teak ('09), new hull/deck paint and rigging ('13), new working head, sleeps 4. Cockpit seats 6-8. Much loved! Annapolis, MD. \$12,500.

Arthur Chotin afpadc@yahoo.com 410-849-2352

S2 7.9

1994. Great cond, adj draft w/ lifting keel + tip-up rudder. Yanmar 1GM10 diesel w/MaxProp. Galv tandem trailer, Raytheon ST 1000+ AP, Harken RF, North Sails. Fixed Vang, mast and boom refinished, recent standing/running rigging. Interprotect 2000e epoxy barrier coat + VC17 bottom. Many spares, daysailed and love it w/the diesel. Ashtabula, OH. \$24,000.

Robert Bollman 440-812-5616 rbollman3@outlook.com

Islander 32

1965. Boat & trailer completely refurbished w/new Hyde Sails, Cypress Mast, Electric Yacht 10.0 E-Drive Auxiliary, full boat cover. Daysailed 4 months/year San Carlos, Sonora, MX. An old-school boat w/RF main on the boom. Fun boat to sail, perfect size. Includes 3-axle Road King trailer. Amado, AZ. \$12,000.

> Peter Burgard 520-625-3982 burgardjd@aol.com

Atkin Schooner 33

1957. Gaff-rigged. 32'9"x9'8"x4'4". Restored 2012-2017, new African mahogany plywood/glass deck. Bald cypress deck beams, white oak frames, 3" floor timbers, 7x6" stem, white cedar hood ends, 1¹/8" carvel planking, both garboards and 3 planks above. Set of 5 sails including gollywobbler. Bulletproof Sabb-2 H, 18hp, new rings and cylinder sleeves 2012. 6' standing headroom, sleeps 3+, July 2018 survey. Sale includes hurricane mooring in Colonel Willis Cove, RI. Wishing \$60,000, best offer.

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

Menger 23 2004. Catboat customized for cruising. 6.2' headroom, 22.6x10x2.6, H/C pressurized water, 55gal tank, heater, AP, chartplotter, 2 sails, AM/FM radio, boom tent cover w/windows, encl head/shower/25gal holding tank, Yanmar 2GM20 18hp diesel, sleeps 2/3, nonpressurized alcohol stove refrigerator/freezer, shore power, solar panel to charge batteries, D/S/W logs, double berths w/ removable extension, full-length cockpit cushions. Aquebogue, NY, \$32,500. Contact broker. Andrew Galasso

agalasso@lighthousemarina.com 631-722-3400

Vineyard Vixen 29 1974. Ave Marina is hull #6 of 30

built between 1974 and 1986. See a full description at Boats We Love: tinyurl.com/yx4ghxgo. Also featured in *Cruising World* and *Practical Sailor*. A sweet doubleender that loves to play in the waves, I have sailed her engineless since 1998. Simple camping-style cabin for 4; gorgeous seakindliness under sail. RI, \$12,500.

Tim Murphy timbeaux3@me.com 401-440-8493

Abeking & Rasmussen 61 1964. Refit '95, 10'-18. Angantyr is a beautiful award-winning sailing ship/cutter rigged cruising vessel. At home in any harbor in the world. An excellent vessel for fishing/snorkeling/diving. Corten steel hull, excellent shallow water boat. Ready for cruising the bay or the world. New Volvo D4 180 engine, low hr 15kw generator, robust galley and head, Several recent surveys, new mainsail. Comfortably sleeps 8. Great for parties, perfect for a liveaboard. San Diego, CA \$175,000.

Bill Peterson Bill@DenisonYachtSales.com 310-871-1977

Allied Seawind II 32 1976. Bluewater. All gear necessary for extended cruising. Ready to sail away. Recent refit includes new custom electric panel, H/W

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heater w/cockpit & inside shower, NaturesHead composting toilet, 8 new S/S+glass opening ports, RF w/130 genoa, Raymarine radar/chart plotter, Standard Marine VHS w/ AIS, EPIRB, handheld VHS, AP, AC, RIB w/8hp Yamaha OB, 4 solar panels, MPPT solar controller, wind gen, new battery bank w/over 400 amps. Destin, FL. \$38,000.

Charles Fries chicf@comcast.net 770-331-5860

Celebrity 19

1968. Evanson-Built, #655, fiberglass hull/non-cored deck, CB w/ slight keel for IB rudder. Mahogany/teak cockpit and rub rail, Sitka spruce spars, fore and aft and side storage compartments w/floatation racks. Decent main w/single reef, jib + genoa, new running rigging. 2019 Sunbrella boom tent w/ zippered forward section, lift out seats for camp cruising; heavy-duty trailer w/new tires, fenders, lights, wiring. VT. \$3,500. sailboatdata. com/sailboat/celebrity

> George Little grayluders@yahoo.com 802-864-4003

Pearson 26

1971. Sailed out of Warwick, RI for 25yrs. Great sailer, loves her jib! Honda 9.9 4-stroke LS, highthrust, power-tilt, remote motor control. Foresail RF, teak toe rails, teak sprit anchor roller. Mahogany hatch boards. Dodger, 2-burner Origo alcohol stove, 2 deep-cycle batteries. Custom trailer, 7' hard dingy. Northborough MA. \$10,000. **Richard Chouinard**

richrdandveronica@verizon.net 508-393-9559

Seafarer 31 Yawl

Hunter 30

1989. In-mast RF jib (2017);

Fortress Anchor; whisker pole;

dodger/bimini windshield + side

4'6", Beam 10'; pedestal steering,

compass, AP, chartplotter, MMSI

alcohol stove; head/shower. Sleeps

6-7; teak/holly sole; V-berth doors;

radio; 110V AC, TV, microwave;

Wind Charm has many extras.

Tolchester, MD. \$24,900.

table; Lifesling, gas grill; Draft

windows, side/aft screens; cockpit

Yanmar 2GM (2005 <500 hrs); Full

1971. Classic Bill Tripp design yawl. Re-powered w/Beta 16 2009. Updated features include: fuel system, exhaust system, F/W system, electric wiring and panels, shorepower, bilge pump, running rigging, delta anchor w/20' chain and 8-plait rode w/anchor roller + Samson post. Garmin 545S chartplotter. Genoa, main, mizzen, spinnaker w/ sock and ATN tacker. Re-upholstered cabin seating. New cabin lights. Pasadena, MD. \$13,500.

Daniel Connolly danjconnolly825@gmail.com 301-305-2237

Pearson 26 Weekender 1976. Great daysailer, exc PHRF racer, heavy-duty gear, spinnaker-rigged, lots of accessories. Includes LS OB, car trailer, steel cradle. Plymouth, MN. \$8,000. **Michael Barnes** 763-557-2962 granite55446@gmail.com

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On the Cusp

A chilly morning at the edge of autumn foretells the longer journey.

BY D.B. DAVIES

Subject to go and nothing to do, yet I feel an urgency to rise.

As I unzip and emerge from the quilted warmth, the cold stings my face. Even wearing fleece, I'm all goosebumps as I crawl out of the berth and patter barefoot across the icy sole to the galley; a frigid journey to hot coffee. I break up the sheet ice in the water jug before I fill the kettle and fire up the stove. After priming the burner, my hands welcome the warmth of the blue kerosene flame.

Through the scratched Plexiglas companionway, I see that the sun has disappeared behind clouds, portending a troublesome day. It must be eight or nine shoes on my feet. Then the kettle whistles at me.

Four large tablespoons of coffee grinds go into the strainer straddling the mouth of the large mug. When I pour the steaming water over the top, the aroma hits, sharp and clarifying. The worst is over. This day will begin.

In the cockpit with my caldron of inspiration, I take in the small, sheltered cove of the Bay of Quinte. The shore is ablaze in color: red, yellow, brown, and green sooth and excite at the same time. Small birds chatter among the trees, seeming to gather a collective courage for the flight south. The water laps gently on the hull and brushes the shore, whispering the hopes of a million voyages and the hearts of a billion seekers.

We are very much alone, *Affinity* and I. Gratefully so, for days now. But, like the birds, I must make plans, summon the courage to either sail to Picton to seek a cradle for a winter in a strange shipyard,

or sail out into open water for two days against a strong westerly, down the lake to our home port. Last night's marine radio crackled with the promise of snow squalls. In the end, I hate the thought of leaving *Affinity* in a strange yard more than the thought of braving the weather to get her home.

I know that if I get a quick start, we could miss some of the weather. I toss the last swig of coffee and grinds overboard and go below. In the head, I glance at the mirror, lean in to study a stranger. It's a leathery old man with wrinkled eyes, tousled morning hair, and sharp, gray stubble on sagging cheeks.

"Who are you, old man? Where did you come from? Where are you going?"

I smile a grizzled smile and speak aloud: "I'm going to the same place we're all going. And getting there isn't half the fun...it's really all there is."

o'clock. I don't know. My watch is back in the V-berth, and I realize I don't care to check it. I realize I can't feel my feet.

I sit on the narrow step to the cockpit and try to rub some life into them. Just under the table are my deck shoes where I kicked them off last night. Socks are up forward, but that's still too far away. I sink down to the sole and slide my

D.B. Davies is a sailor and writer who is a frequent contributor to Good Old Boat. He sails Affinity, his 1974 Grampian 30, around Lake Ontario. After extensively researching the men and sailing schooners of Canada's Maritime provinces, Don wrote a dramatic screenplay about the famous Bluenose and her skipper, Angus Walters. You can find out more at thebluenosemovie.com.

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