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GOOD OLD BOAT



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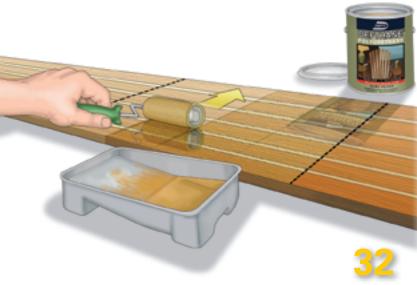
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About the cover ...

The North Channel's popular Benjamin Islands attracted *Karma*, a Nor'Sea 27, and her skipper, Tom Scott. Bill Jacobs, who caught this photo, says, "Small boat cruising doesn't get any better than this."

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The view from here

GOOD OLD BOAT

FOUNDER/EDITOR Karen Larson karen@goodoldboat.com FOUNDER/TECHNICAL EDITOR Jerry Powlas jerry@goodoldboat.com PUBLISHER/ADVERTISING SALES DIRECTOR **Michael Facius** michael@goodoldboat.com • 612-605-8319 SENIOR EDITOR Jeremy McGeary MANAGING EDITOR Tim Bauernfeind ASSOCIATE EDITOR **Pat Morris RESEARCH EDITOR Dan Spurr** CONTRIBUTING EDITORS Ted Brewer • Donald Launer Dave Martin • Gregg Nestor • Allen Penticoff Robert Perry • Paul Ring • Bill Sandifer Richard Smith • Tom Wells **CREATIVE DIRECTOR** Mary Endres AD PRODUCTION **Nancy Koucky** CLASSIFIED ADS AND FINANCIAL MANAGER Karla Sandness karla@goodoldboat.com • 701-952-9433 DIRECTOR OF CIRCULATION/RETAIL

Mark Busta mark@goodoldboat.com • 701-952-9433

WEBMASTER Jerry Stearns www.goodoldboat.com TROUBADOUR Tom Wells AUDIOBOOKS www.AudioSeaStories.com

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Things that go bump in the basement

Mystic's mad scientist is at work again

by Karen Larson

S trange noises have emanated from our basement ever since we moved in 20 years ago. I'll hear high-pitched

whines, odd buzzings and whirrings, or assorted and unexpected hums, whistles, and alarms. Sometimes an unusual noise is followed by a string of foul language "that would make a sailor

blush," as Henry Higgins said. These noises should concern me, I know, but I worry just as much when it's quiet down there. When she was very young,

Jerry's daughter taught him a thing or two about the workings of a young brain. When she was out of sight, he worried most when she was very quiet. One day when the quiet had gone on too long, he asked, "Jessie, what are you doing in there?" Her innocent and honest reply said it all, and we still quote her frequently and fondly: "If I tell you, then you'll *know*."

Right. So the real question about the work of the mad scientist in my basement, now that the noises coming from two floors below are primarily whirring, occasional thuds, and clanking chains is, how much do I *want* to know?

For many years, Jerry and I have been afraid of the excessive strength and mutilating power of a windlass. (I won't deny it, perhaps we were also being cheap.) But, as we hope to continue sailing even as we age, we've succumbed. After a great deal of research, Jerry bought a small, but powerful, Lewmar windlass. As long as he'll be modifying the bow to accommodate it, that led to another age-related modification that we've put off as long as possible: the addition of roller furling for the jib. As I write this in April, I anticipate that it's going to be a busy spring for *Mystic*'s chief engineer.

Our sailing season on the most northern of the Great Lakes is notorious for being brief. Spring comes reluctantly. Fall comes all too soon. You wouldn't want to spend too much of your time during the months of April and May (also known as spring launch season) working on extensive modifications to the boat. If you do, you'll look up and it will be midsummer before your boat is launched and finally sailing. As Captain Jack Aubrey said, "There's not a moment to be lost."

Thus the noises in the basement. As well as organizing the wiring and belowdecks reinforcements required for a proper windlass installation, Jerry has built a plywood mockup of *Mystic*'s bow and has spent part of the winter months getting the angles right for the launch and retrieval of two anchors (yes, you read that correctly). We've spent time splicing 8-Brait line to chain. In addition, Jerry has spent hours testing the new system ... and testing, and testing.

I hope he doesn't wear it out before he gets it mounted on the boat.arDelta

Hooligan Navy, still smiling,



Hooligan Navy, aka Coastal Picket Force

I followed the trail to the story and film about the Hooligan Navy (in the emailed Press Gang release you sent: <www. goodoldboat.com/reader_services/news>. I'd never heard it called that. It had always been the Coastal Picket Force.

The 50-foot schooner (above) that was my home for nearly 10 years in the 1980s had served as one of those coastal picket boats! Her owner, builder, and my dear friend, the late John Appelt, lived in Greenport, Long Island, and ran the shipyard there. He'd built Windsong and launched her in 1937. He told me the Coast Guard just showed up one day in 1941 with a letter saying they were conscripting her. They painted her gray, nailed plywood over her wooden decks, put numbers on her bow, and sent her out on coastal patrols along the 50-fathom line. He didn't see her for months at a time and thinks she was sailed all the way down to the Chesapeake and Carolinas for a while. He was busy overseeing the building of wooden minesweepers and eventually was able to crank out one every two weeks. In one of the scenes in the documentary, a couple of crew are rowing out to an anchored schooner that could be Windsong.

Windsong began life as a gaff schooner, but John converted her to a staysail schooner in the late 1940s, using taller topmasts left over from a couple of famous racing schooners. He was full of stories and I loved hearing him spin a yarn. I would find the odd scrap of grey paint occasionally while doing maintenance on *Windsong* and was always amazed. *Windsong*'s new owners lost her in a hurricane in the early 1990s. She was a good sea boat and I'm sure her crews must have appreciated her seakindly ways. Amazing stories exist on the Coastal Picket Force, mostly untold. What fun to discover this documentary. Thanks! –Karen Sullivan, Port Townsend, Wash.

Reply from the editors

We were reminded of the use of sailboats on East Coast U-boat patrol when we published a two-part article by Issac Harter about his family's boat, *Seven Bells*. That series ran in November 2000 and January 2001. *Seven Bells* was a beautiful 57-footer. Ike says: "In 1942, *Seven Bells* was requisitioned by the Naval Reserve and she served offshore of Long Island on U-boat patrol. Not much is known about her career or whether she ever saw or heard a U-boat, but I rather suspect that some lucky Naval Reservists must have spent a lot of enjoyable hours at war. In 1944, the U-boat threat was all but gone and the ship was returned to her owners in better shape than when they had taken her."

Karen's note above refers to a release sent by *Good Old Boat* about a short movie and a new book released by Jule Miller, both on this subject. Jule's book, available from Amazon, is titled: *Voyages in Desperate Times*. For those subscribers who do not receive the occasional Press Gang news releases from *Good Old Boat*, please contact karla@ goodoldboat.com to have your name added to the mailing list. -Editors

Yes, she's still smiling

In the November 2010 issue, Kala Cobb wrote of her reunion with and new ownership of *Tardis*... the 26-foot Sparkman & Stephens-designed New Horizons sailboat her parents sold not long after she was born. Her joy in owning *Tardis* shines throughout that article. A great deal of effort follows the discovery of an abandoned boat and any skeptical good old boater (who's been there and done that) might wonder how Kala's enthusiasm held up once the initial excitement wore off and the hard work began.

We heard from Kala recently. She sent a number of photos showing gleaming new paint and shiny hardware on her



and overboard recovery

48-year-old New Horizons. Before the launch, Kala wrote: "We have spent the last two years completely restoring her and have made some unique and beautiful modifications/ upgrades along the way. It has been a long journey but we are planning on launching her in the next couple of weeks. I will email you some pictures so you can see how beautiful she is now. As you can tell, we're very proud of her and sooo excited about finally moving on board!"

After the launch, the gorgeous photos arrived and Kala's excitement continued: "I just wanted you to know we launched *Tardis* today! It was so wonderful to finally see her afloat."

Kala, we wish *Tardis* and her crew the very best. May you have many wonderful adventures together. Godspeed as you point your bow toward vast new horizons.

-Editors

To sell, or not to sell but share

I just wanted to let you know I drew some inspiration from one of your articles. I had been reluctantly considering selling our 1972 Ericson 29 because other commitments have been competing with the old girl for my attention, not to mention the fact I have a six-month deployment coming up. Then one evening I was flipping through the January 2011 issue, which contains the excellent article "Partners in Sailing" by Steve Gibb, and it inspired me to give the idea a try. I put an ad on Craigslist for potential partners and immediately had several responses. Thanks for enabling me to consider a third way around the keep/sell dilemma I'd been facing. Every marina has so many boats being underutilized. It seems like an arrangement that should be far more common. It's also a great way to cut through the chaff of wannabe crew: "Put up or shut up."

The partnership is looking good thus far. I had to be firm with a few people whom I felt were looking to abuse the opportunity — get cheap sailing lessons and then move on down the line. I found an individual, however, who appears to be a good fit. His skills were rusty, and he was nervous about sailing in a busy harbor (Hampton Roads), but we've been out about a dozen times now and I think we're both feeling comfortable at the prospect of him taking it on his own.

By the way, despite the gloom-and-doom prognostications espoused on the various Internet message boards (just search "boat sharing" and you'll see what I mean), my insurer said it's no big deal to add extra operators to my policy. Probably won't even raise the premium. Keep up the great work! -**Rick Rose**, Hampton, Va.

Fuji 32

The Fuji 32 article in the July 2011 issue ("A Fuji 32 Shines On") was interesting, but I must point out a commonly made error.

While John Alden did design the Fuji 35 and 45, he did not design the Fuji 32, even though this is popularly believed. Fuji Owners webmaster, Bill Ashenhart, and people from the Mariner owners group say the Fuji 32 hull was laid up in the then-defunct Mariner 32 mold. Having carefully looked at both the Mariner and Fuji hulls, I've come to the opinion that — while the base mold may have been the same — the Fuji people made a few small alterations.

For more on Fuji sailboats, go to <www.fujiyachts.net>. -Brian Cleverly, *Magrathea*, Fuji 32 hull #42, Sacramento, Calif.

Man-overboard recovery techniques

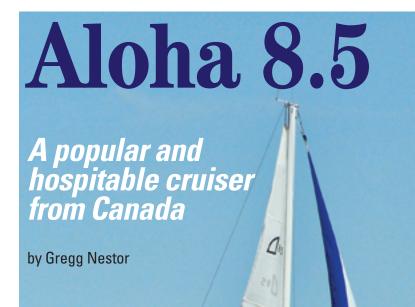
"Which is the best overboard maneuver?" is controversial and it is a good question because it causes us to examine a variety of methods. We need a variety of skills for a variety of conditions. Over the years I have lost over the side enough hats, cushions, flags, sails — even kids — to develop a few ideas of my own. I feel that an overboard situation in a sailboat is best handled under sail. Begin with practicing a crash turn. A well-rigged boat can be put about, under full sail, all-standing without harm. It makes a mess, but that is better than losing sight of the victim.

- 1. Taking down sails wastes precious time. Instead, pitch overboard any floatable objects — cushions, lifejackets, MOB pole, foam ice chests — to make a larger target and give the victim something to hang on to.
- 2. Taking down flogging sails diverts the crew's attention from the primary objective, the person in the water. The crew can lose the plot.
- 3. When you take down the sails, the boat rolls dangerously.
- 4. When you start the engine, the propeller becomes a threat to the person in the water.
- 5. When you start the engine, there is risk of getting a line fouled in the propeller. Now you have a real problem.
- 6. When you place the boat in a hove-to attitude to windward of the victim, good things begin to happen.
 - a. The boat will drift, inevitably, down upon the victim.
 - b. The boat becomes a stable and safe platform.

continued on page 66

Ron Schaper convinced us: the Hillsboro Inlet sea buoy in Florida is the friendliest aid to navigation around. It says "Hi" to all who pass by. Ron's wife, Andrea Dowling, took the photo. (The free T-shirt went to Andrea.)

Review boat



I n the late 1960s, a Chinese immigrant by the name of Ti Ouyang founded Ouyang Boat Works in Whitby, Ontario. His first offering, the Matilda 20, was an overwhelming success. The company flourished and additional Matilda models soon followed.

Mao Kang, one of Ti's three sons, joined his father in the early 1970s and

provided the fledgling company with much-needed management direction as well as the name for the company's new line of cruising boats: Aloha. (While in college, Mao Kang dated a girl from Hawaii ...)

Several naval architects, including Robert Perry and Mark Ellis, contributed designs to the company's new line, and the design for Aloha 8.5 was a Even though it's a nearly 40-year-old design, the Aloha 8.5 is still an eye-catcher with its pleasing proportions, attractive sheer, and just enough trim to avoid a bland appearance. Here, Bob Gloman's *Tal Vez* shows off her light-air ability.

collaboration between Ted Brewer and Robert Wallstrom.

Although the Aloha boats were very popular, the under-financed Ouyang Boat Works ran out of money. Ti and Mao turned to a family friend and dealer, Canadian Yacht Charters, for a much-needed cash infusion, but the partnership was rocky from the start. In 1986, Ti sold the company for \$100,000 and retired.

Aloha Yachts continued production for the balance of the 1980s and, all in all, built approximately 700 Alohas. Like so many of its contemporaries, the company had closed its doors by 1990.

Design

In their design for the Aloha 8.5, Ted Brewer and Bob Wallstrom created a cruising sailboat of a more "yachty" style than many boats of a similar size being offered at the time. The classic lines of the Aloha 8.5 show a sheer with a strong spring to it, a straight stem with a pronounced chin, and an upright transom. The beam is quite full and, carried well to the waterline, results in fairly firm bilges that contribute some stability and enhance cruising comfort.

Below the water, the Aloha 8.5 has a shallow swept-back fin keel that gives the boat gunkholing possibilities. The transom-hung rudder, which is also supported by a skeg, is at the end of a longish waterline, reflected in the moderately low displacement/LWL ratio of 205. While the skeg is unusual with a transom-hung rudder, it's a sensible, arrangement. It protects the leading edge of the rudder from damage in the event of a grounding and improves tracking when under way. Another benefit of a transom-hung rudder is that it's comparatively easier to jury rig than a rudder with a through-the-hull stock in the event it does suffer damage.

The cabintop is cambered and a slight step at the mast lowers the cabin height forward, preventing that



At nearly 7 feet long, the cockpit in the Aloha 8.5 has lots of room for boat handling and relaxing, at left. The tiller passes through the transom, at right, allowing the mainsheet to be attached to a traveler running across the top of the cockpit coaming. The forward hatch is on the foredeck, below, leaving the cabintop clear of obstructions forward of the mast.

"boxy look" when viewed in profile. The wide cove stripe accentuates the boat's sheer and the cabin's teak eyebrow trim visually reduces the cabin's height.

Deck features

The foredeck of the Aloha 8.5 is relatively spacious for a 28-footer. A cast-aluminum stemhead fitting incorporates a single anchor roller, and two chocks lead docklines to a pair of 8-inch open-throat cleats. A deck pipe is fitted in the lid of the anchor locker.

The forward hatch is located on the foredeck and not on the cabintop, which has a tidy look to it thanks to a minimum of fittings: two sets of teak handrails along its outboard edges, port and starboard Dorade vents with bronze cowls, and a sea hood. Ten opening portlights, five per side, provide plenty of light and cross-ventilation in the cabin.

Good-quality non-skid is molded into all horizontal deck and cabin surfaces. Its non-reflective gray-blue color is easy on the eyes and gives the deck its two-tone appearance. Brightwork is limited to the cabintop handrails, companionway trim and hatch boards, cockpit coaming tops, and the eyebrow trim. Other deck features include bow and stern rails, dual lifelines, the slotted toerail, and a pair of 8-inch stern cleats.

The cockpit is moderate in size, with seats measuring 80 inches long. Its coamings are carried well aft and the footwell is properly sized for good



bracing. Any water that gets into the cockpit drains through a pair of 1½-inch scuppers, and a proper bridge deck helps keep it out of the cabin. Two seat lockers provide stowage as well as access to many of the boat's systems. The aft end of the engine, the stuffing box, the aluminum fuel tank, and the batteries can be reached from the port locker. The starboard locker is primarily for stowage but also houses the polyethylene water tank.

While wheel steering was an option, most Aloha 8.5s came with the standard tiller steering. Rather than extending over the transom, the relatively short tiller enters the cockpit through a slot in the transom and angles slightly upward. This arrangement does not allow the tiller to be swung out of the way and somewhat complicates the removal of the rudder from the boat.

Construction

The hull is solid hand-laid fiberglass and was molded in two halves port and starboard. The halves were bolted together and the centerline was sealed and glassed over. Once the hull was complete, lead ballast was lowered into the keel cavity and encapsulated.

The deck is a sandwich comprised of fiberglass skins on either side of a core of end-grain balsa. Stress points are reinforced with plywood. The hull-to-deck joint is chemically bonded and through-

bolted to incorporate a blackanodized aluminum toerail. All deck hardware is through-bolted to proper backing plates.

The 8.5's mast, chainplates, and backstay are all electrically grounded for lightning protection. The chainplates are located outboard and bolted to solid mahogany knees glassed to the hull.

Ouyang Boat Works milled all its lumber at the factory, and the woodworking crew carefully matched the teak used in each boat for uniformity.

To form some interior components, as well as to add some structural support, a partial fiberglass pan was bonded inside the hull.

Review boat

Belowdecks

The V-berth with insert measures 6 feet 2 inches long and is of reasonable size, particularly at its head end. The forward cabin has plenty of stowage with lockers outboard port and starboard, a forward locker, and bin stowage beneath the berth. Other amenities include a pair of opening portlights, the forward hatch, and a pair of reading lamps.

Aft of the forward cabin and to port is the head compartment, which is a molded fiberglass unit heavily accented and trimmed with teak. It contains a toilet and a single stainless-steel sink with a cold-water hand pump but no shower. The holding tank is situated beneath the V-berth. For illumination and ventilation there's a single opening portlight. The door provides doubleduty privacy — for the head or for the V-berth.

Across from the head are three stowage bins and a hanging locker. The hanging locker lacks a door because an opening portlight is located inside.

The saloon is traditional in layout with facing settee berths measuring 6 feet 3 inches in length. The port settee converts to a pullout double, bringing the total number of berths to five. The starboard settee is shorter than the port settee but a foot cubby located aft beneath the galley counter extends its sleeping length.

Two lockers are separated by an open shelf above each settee back. Like those in the forward cabin, each has a louvered teak door and the shelf is fiddled. The bulkhead-mounted table is to port and, when lowered, exposes a shallow spirits cabinet. Additional stowage is beneath the settees and behind the seatbacks. The lockers beneath the settees have drawer openings in the front and can be accessed from the top as well.

In addition to the companionway, six opening portlights and two Dorade vents provide the main cabin with light and airflow. For safety, a pair of teak handrails is mounted overhead.

The athwartships galley is basic but functional. To starboard is an

alcohol cooktop, a single stainless-steel sink with foot pump, bins for dishes, and bins and lockers for provisions. The rather large icebox is on the port side, along with additional stowage cubbies. The icebox drains to the galley sink via a hand pump. Since the galley spans the width of the boat, the wood-grain-pattern plastic countertop also functions as one of the four companionway steps.

The electrical panel is located beneath the companionway opening. Access to the bilge is at the foot of the companionway ladder. The forward portion of the engine can be reached by removing the companionway ladder and a panel behind it.

The teak-and-holly sole, oiled-teak interior, and the attractively patterned vinyl headliner with teak battens make

> for a very positive overall impression. With 6 feet of headroom, a folding table, and the six opening portlights, the main cabin is bright and roomy.

The rig

The Aloha 8.5 is rigged as a masthead sloop, with a bridge clearance of 44 feet. The mast and boom are painted white with linear polyurethane. The mast is stepped on deck and fitted with a single set of airfoil spreaders. A pair of cap shrouds, dual lower



The cushions on the saloon settees are nicely rolled and pleated, at left, and the starboard settee extends beneath the galley to provide additional foot room. The table folds down from the bulkhead. The V-berth, at right, measures 6 feet 2 inches and is supported by the partial fiberglass interior liner. The galley, above, utilizes the space under the cockpit bridge deck, which also shelters the electrical panel.



Removing the companionway ladder and galley panel provides reasonable access to the front of the engine, at left. Access to the sides is gained through removable panels in the seat lockers. The head, center, is attractively finished with teak-veneered plywood bulkheads and cabinet trim. Opposite the head, at right, is a short hanging locker, with an opening port above it and stowage bins beside and beneath it.

shrouds, a headstay, and a split backstay support it.

The halyards, outhaul, and jiffyreefing lines are internal. All lines are led aft to line stoppers and a pair of Barient single-speed winches mounted on the cabintop. The mainsheet is attached to the end of the boom and leads aft to a traveler mounted at the transom. Headsail sheets are led through snatch blocks shackled to the slotted toerail and run aft to a pair of Barlow #19 single-speed primaries.

The 8.5 originally came with a mainsail, a 150 percent genoa, and a working jib.

Under way

Our test boat, *Tal Vez*, owned by Bob Gloman, is a 1980 model, sail number 173. Although we had little wind on the day we tried her out, she seemed to be well balanced, very stable, and easy for two people to sail.

Reports from owners indicate that the Aloha 8.5 is dry under sail and, when set up right, it will almost sail itself.

The PHRF rating is 189 seconds per mile. This compares favorably with the Cape Dory 28 at 228 and a Pearson 28 at 192.

Two auxiliary power options were offered, depending on the year of production: an 11-hp Universal diesel or a 13-hp Westerbeke diesel. A standard 12-gallon aluminum fuel tank was also offered. Earlier engines were raw-watercooled, but later ones incorporated a



Aloha 8.5

Designer: Ted Brewer & Robert Wallstrom LOA: 28 feet 0 inches LWL: 24 feet 6 inches Beam: 9 feet 5 inches Draft: 4 feet 4 inches Displacement: 6,750 pounds Ballast: 2,750 pounds Sail area: 394 square feet Disp./LWL ratio: 205 Sail area/disp. ratio: 17.7 Fuel: 12 gallons Water: 30 gallons Holding tank: 24 gallons heat exchanger and were freshwater cooled. Access to the engine is average, and is obtained through removable side panels inside the cockpit lockers as well as the usual panel behind the companionway ladder.

Things to check

As you would with any boat of this vintage, sound out the deck, especially around deck fittings and the mast step. Delamination of balsa-cored decks is a common problem and, if extensive, can be a deal breaker. The fiberglass interiors of many of the lockers may be quite rough and have the potential to snag items such as clothing stowed in them . . . and flesh too. To get the most out of the large icebox, it will be necessary to increase its insulation all around — there is little to none.

Conclusion

The Aloha 8.5 is an attractive boat with graceful lines designed and equipped for safe, comfortable cruising. Overall, the quality of the workmanship is above average. At less than 30 feet, an Aloha 8.5 represents a good value. Expect to pay \$18,000 to \$25,000, depending upon age, condition, and equipment.

Gregg Nestor, a contributing editor with Good Old Boat, has had a lifelong interest in all things aquatic. He and his wife, Joyce, are currently refitting, upgrading, and sailing a 1994 Caliber 35.

Sailboats 101

Measuring Boat Speed 101

Steps in the process of measuring progress

by Don Launer



On ships, the reel of line on a chip log was immense, about 3 feet across, and was held by two men, one holding the handle on each side of the reel.

> S peed on the water is measured worldwide in knots. A knot is a speed of one nautical mile per hour and is abbreviated as kn or kt. A nautical mile is the length of one minute of latitude. It is defined by international agreement as 1.852 kilometers, approximately 1.151 statute miles.

It begins with a log

In the early days of exploration, the most common method of measuring speed, and consequently distance, was called the Dutchman's Log.

On the sailing ships of that period, a large supply of firewood was carried aboard to fuel the galley stove. To determine how fast a ship was sailing, sailors threw a firewood log into the water at the bow of the ship and counted the time it took to reach the stern. Since speed is distance divided by time, and the distance was known (the length of the ship), the boat's speed could be calculated.

A chip off the old log

By 1600, speed through the water was measured more accurately with a device known as a chip log. It consisted of a piece of wood, usually in the shape of a quarter circle or half circle, weighted on the curved side so it floated vertically to create the greatest resistance to the water. A string bridle fastened at three points was led to a single line that had knots tied into it at equal intervals.

To measure speed, the chip was thrown into the water and the line allowed to run out through a sailor's hand. The sailor counted the number of knots that passed through his hand during the period measured by a sand timer. Each knot tied in the line represented 1 nautical mile per hour. Thus, when the sailor called out, "Eight knots," the ship was traveling 8 nautical miles per hour. Eventually the term "knots" (the actual knots on the chip log's line) became synonymous with a boat's speed through the water.

Revolutionary counter

In the late 1700s, more accurate measurement of speed and distance was obtained by use of the Walker, patent, or taffrail log (the taffrail is the stern rail on a boat). This was a spinner that was towed behind the boat. It measured distance traveled by counting revolutions of the spinner, either directly

This 100-year-old taffrail log has a spinner with a weight a few inches up the line that keeps the spinner below the surface of the water. The spinner and weight are always painted a dull black to reduce the likelihood they will attract fish. The rotating line is attached to the rear of the distance-measuring device that is fastened to the stern rail of a boat. The dials on the meter measure the distance in nautical miles traveled — hundreds, tens, singles, and fractions.

on the spinner itself or on a gauge fastened to the taffrail. To make it less attractive to fish, the spinner was painted a dull black.

Electronic logs

A method of measuring speed through the water that has become common in modern times employs a small paddle wheel that projects from the bottom of the boat's hull. Magnets on the blades of the paddle wheel pass a coil of wire inside the hub of the device, inducing a voltage that depends on the rotational speed of the paddle wheel. For many years, the voltage was registered by an analog-meter display calibrated in knots. These days, the displays are almost exclusively digital.

A diversity of devices

Many other methods are used for measuring speed through the water. One type of speed sensor uses ultrasonic sound and measures the Doppler shift in frequency resulting from the speed of the passing water. Other devices measure the resistance of an object that's towed through the water, usually using a spring.

The Pitot tube, invented by French engineer Henri Pitot in the early 1700s, uses the pressure of the water arising from the boat's forward motion to measure speed. It is widely used on airplanes to measure airspeed.

Speed over ground

All of the methods described above measure the boat's speed through the water, which is not necessarily its speed over the surface of the earth, also called speed over ground (SOG).

If a boat were heading south through the Florida Straits between Florida and the Bahamas, it might be doing 3 knots through the water, but due to the north-flowing Gulf Stream it could be going backward or standing still relative to the earth's surface.

It wasn't until the electronic age that speed across the face of the earth could be measured directly. Loran-C did this, and GPS still does, by determining a boat's terrestrial position at frequent intervals and calculating how fast the boat must have been traveling to get from one point to the next. This is the most commonly used means to determine speed on recreational sailboats today.

A Pitot speed-measuring system is comprised of the Pitot tube, the speedometer dial, and the pressure tube that connects the two together.

Don Launer, a Good Old Boat contributing editor, built his two-masted schooner, Delphinus, from a bare hull and has held a USCG captain's license for more than 36 years. He has written five books, including Navigation Through the Ages and frequently gives talks on the history of navigation.

A Mistral 33 rejuvenated

A Swedish classic is the retirement plan he can live on

hen Stephen Thompson reached 50, he didn't have a midlife crisis in the same way that most do. He didn't buy a red Corvette or a motorcycle. Let's just call it, instead, a *midlife moment*. A very active guy, he looked up one day and wondered what he could find to keep himself occupied in retirement.

"I wanted a retirement project that would be challenging mentally and physically and be somewhat active," Stephen says. The Cliff Notes version of the plan went something like this: "After I retire, I'm going to sail around the world." The *Vera May*, a Mistral 33, is a key part of that "retirement plan."

Stephen has not yet reached retirement age, but he has been following the plan for at least five years. He realized quickly that the longer version of this plan takes years of work and it starts with finding or building the boat.

Stephen says, "I figured I'd build a 44-footer. How do you build a 44-footer? You start developing your skills by building a 22-footer. How do you build a 22-footer? You build an 11-footer." So he built an 11-foot Winsom Wherry and sailed it on Lake Wabamun near Edmonton, Alberta, where he was working at the time. That boat taught him quite a bit, not just as a builder but also as a sailor.

"It was lightning quick to respond. You had to know what you were doing," Stephen says, then grins as he relates how he once spent most of an exhausting blustery afternoon righting the boat and bailing it out... only to be capsized again. When he noticed a fellow on a 23-footer having a much easier time of it, he knew he was ready for the next boat.

by Karen Larson

He did not build his 22-footer. Instead, he started casting about for plans for his ultimate cruising vessel. He was contemplating building a Sam Devlin design using a stitch-andglue method, but it occurred to him that it would be difficult to turn the boat over once the hull was completed. So before committing to a building project, he took a look at what was available on the used-boat market.

A simple search for a boat no less than 30 feet in length and priced at no more than \$15,000 brought a Mistral 33 to his attention. Perhaps he wouldn't have to build his cruising sailboat after all ... On choppy Galveston Bay, *Vera May*, a Mistral 33, struts her stuff for the cameras, facing page and at right. (The photo chase boat was *Amelie*, an Island Packet 29 owned and skippered by Nancy Ballard.) Her owner, Stephen Thompson, demonstrates the sail basket he designed and made to fit around the roller-reefing boom, below.

These days, Stephen, a very capable and creative Canadian, lives in Houston, Texas. The *Vera May* followed and, over time he has disassembled, rebuilt, upgraded, tested, and modified everything aboard. But that's the abridged version of their story.

A fiberglass wooden boat

The Mistral 33 was built by Harry Hallberg of Hallberg-Rassy fame before the two companies merged in 1972. Stephen had located hull #15, built in 1970. Harry Hallberg began his career building the Swedish Folkboat and the King's Cruiser, both of wood. (*Note:* For more on the Hallberg-Rassy company, see Good Old Boat's January 2003 issue. –**Eds.**)

The Mistral was the first Hallberg yacht to be introduced in the U.S. An early Olle Enderlein design, the Mistral bears a striking resemblance to Olle's personal boat at the time he designed the Mistral, but his boat was built of mahogany. Stephen points out that, due to the timing in the evolution of boat design from wood to fiberglass, the lines of the Mistral's fiberglass hull are very similar to those seen in the wooden boats of the late 1960s.

Stephen offered \$12,000 for his Mistral, which was located in Nova Scotia, a continent away from his home in Alberta. Relying only on photos and a survey, he made his offer and had his new baby shipped west. The survey said there was "some wood rot." As was the case with many early experiments in fiberglass boatbuilding, the hull was built of fiberglass but the trunk cabin was built entirely of wood, and some of that wood was beyond repair. Stephen figured, "Fine, I can do woodwork."

So the boat — that was to be named the *Vera May* after Stephen's mother — came west to Alberta leaking snow and water through the hatches until she arrived with a 2-inch-deep ice-skating rink in the cabin. The decks were cored with Divinycell, now super-saturated by water that had been soaking through the holes in the teak decking for years. And the wood rot? That was "as advertised." He could put his hand through parts of the cockpit coaming.

"What a disaster!" Stephen recalls. "But I didn't see the disaster. I saw the potential: a beautiful and sound hull and a full rig." A friend's son wondered about his sanity, Stephen says. It was going to take a long time before he could impress the youngster with the value of deferred gratification.

Dismantle, then rebuild

Before he could move into the *constructive* phase, he first had to spend two years in Alberta in the *destructive* mode. "I gutted the boat," he says. "This was a wooden boat with a fiberglass hull. I took the whole thing down to bare fiberglass and then sanded the interior of the hull." Stephen removed the upper layer and core of the soaked deck, the entire trunk cabin (leaving just the overhead beams), and all the interior furniture.

"The whole interior was a jigsaw puzzle with furniture built of stick-and-glue construction," he says, but adds that the furniture was very well made, so he cleaned, refinished, and rebuilt each piece. "The more I took it apart, the more I realized what a good pedigree I have here," he says. "She has good bones. These guys knew what they were doing. So I put the interior right back together again the way they had it."

Eventually, he reduced his new boat to a pile of small pieces. "I started to rebuild it," Stephen recalls," from the inside ... one step at a time."

At this point he learned one of the first big lessons of good old boats. "I realized you have to be careful when you read about what





Feature boat



The Mistral's mast is stepped on deck on a raised stiffener that spans two bulkheads, at left. Stephen surfaced the deck with TekDek. Stephen placed mounting pads for a multi-directional fan, at right, throughout *Vera May*'s cabin. The wooden deck beams are structural, not decorative.

you "should do" in most sailing magazines that are writing about good *new* boats, rather than good *old* boats. Based on something I read in a magazine, I lined the inside of the hull with Kevlar from the bow to the companionway entrance for puncture resistance." Later he realized the Mistral hull was plenty strong without the additional Kevlar layer.

An unexpected move

It was about this time that Stephen and his company's investors decided his company really should have a presence in Houston, Texas, and that he was the one who should relocate.

Texas?! The *Vera May* was not much more than a fiberglass swimming pool. Big lesson number two, he soon learned, is that "building a boat is like a dream ... as long as you don't have a deadline." But he was suddenly faced with a date for transporting his boat to Houston. Moving from one country to another is complicated enough. Moving your unfinished boat from one country to another takes it all to another level. The deck had a number of spongy spots, and the trunk cabin was open to the elements. These structural items had to be addressed before the boat could be moved.

"The hull is solid fiberglass," he says. "But the deck was cored with Divinycell. A previous owner had removed the teak deck surfacing but had not completely sealed all the screw holes. I didn't want a spongy deck. So the upper fiberglass surface of the deck had to be cut away and the saturated core material had to be removed. I then epoxied new Divinycell material into the core and rebuilt the upper layer with multiple layers of fiberglass cloth and woven roving." He rebuilt the trunk cabin using the original pieces as templates and mating everything to the existing fiberglass flanges of the deck and interior bulkheads. Then he covered the framed structure with two layers of plywood to seal it for transport. Fiberglass and other finishing work would have to wait until she was settled in Houston.

In spite of the complications in need of creative solutions, Stephen got the boat sealed in time for her second cross-continent ride in less than a decade. The *Vera May* is one very well traveled boat. Once she was settled in a warehouse in Texas, the rebuilding of the *Vera May* resumed.

Decisions made, and made again

As typically happens when rebuilding a sailboat, there was an unforeseen battle. Stephen's was with the flat portlights that didn't conform to the curve of the *Vera May*'s trunk cabin. He had a choice: build up the surface at the ends to shim the portlights, or recess the middle portions of the portlight frames into the sides of the cabin trunk. After a great deal of head scratching, Stephen chose the second alternative, and installed the ports so you'll never notice they don't fit exactly flush from middle to end.

Consider this: in a warehouse you are rebuilding a boat that you have yet to sail. You would like to launch this boat someday and soon afterward sail around the world. As a single fellow, you're likely to do your circumnavigation singlehanded, so all systems should be arranged for simplicity and convenient access. Before you even cruise short distances with this boat, your job is to figure out what to install and what is unnecessary for offshore cruising.

Sometimes Stephen installed something and then had second thoughts and removed or modified it. The most telling of these stories is the beautiful binnacle mount he built for the wheel. He wrote about this work of art in our July 2009 issue. Imagine our surprise when we learned that he'd removed the wheel altogether and replaced it with a tiller ... for perfectly logical reasons.

If the name Stephen Thompson rings a bell in your subconscious mind, it's because quite a few of his articles about the restoration of the Vera May have appeared in Good Old Boat. In addition to the article about the binnacle mount, he wrote: "Matching New Wood to Old," in March 2008, about a cool process to match stain; "Some Like it Hot," September 2008, telling how a heated chisel can ease the removal of sealant; Adapting Flanged Seacocks," in November 2009, about replacing bronze gate valves; "A New Classic Toerail," in March 2011, about replacing the rotten toerail; and "Classy Cable Clamps," in May 2011, about easily manufactured wooden clamps to keep wires in place.

A lifetime of skills

"I spent 40 years of my life learning skills that I never realized would apply in my boatbuilding," Stephen says. "This is the culmination of all those skills: design, project planning, woodworking, working with epoxy and fiberglass, sewing, painting, installing mechanical and electrical systems, not to mention marching ahead in blind faith!"

"It was a very enjoyable time. I spent weeknights researching," Stephen says, "and weekends building." And he would do it all over again in a heartbeat. "It's much more fun doing it yourself," he reports, "than buying a new boat."

The following is just a short list of the things Stephen has done for the Vera May in five years. He has sewn a new mainsail, 135 genoa, and storm trysail, modified two existing sails for roller furling, and built new Sunbrella bags and covers to go with them. He's about to re-cover the interior cushions with a fabric selected by "the ladies of pier 18 at Waterford Harbor," as he refers to boat neighbors Nancy and Kelly. He rebuilt the deck, toerails, and trunk cabin. He put an anchor locker in the bow, complete with electric winch, and reconfigured the plumbing and holding tanks. He rewired the boat. He replaced the Bimini covering with new Sunbrella using the original tattered pieces as templates, and will soon be modifying the design of the dodger to provide more shade from the Texas sun. He replaced the old 23-hp Volvo MD11C with a new 30-hp Volvo Penta D1-30. He resurfaced the entire deck and working areas of the cabintop with TekDek synthetic teak.

In addition, he is building a new 9-foot nesting dinghy using a stitch-andglue method. He upgraded the navigation station with a Garmin chart plotter, GPS, and XM weather equipment. He installed new standing rigging with heavier turnbuckles and added a new roller-furling unit for the jib. He added a Monitor windvane, customized just for the *Vera May* to preserve his mother's signature rabbit logo that he had already added on the transom. He's also considering a conversion from the original roller reefing to slab reefing and notes that modifying the mainsail is no big thing when you made it yourself in the first place. "That Sailrite Ultrafeed sewing machine has paid for itself a number of times!" Stephen says.

"Once you've done it, you're absolutely fearless about cutting holes in the boat. However, I don't want many of those below the waterline," he concludes, then adds with a wicked grin, "I'm going to *butcher* the V-berth next. I think I can tailor a twin-sized memoryfoam mattress from IKEA with an electric bread knife and make what was basically a sail storage area into a proper cabin, complete with a clothes dresser!"

A plan on track

In spite of the many tasks and occasional setbacks, the *Vera May* was not destined to be a 20-year-project. She was launched in August 2010.

Now that she's floating, Stephen is somewhat distracted by the fun he's having sailing, but the work continues apace. As a tinkerer who thinks outside the box, Stephen has replaced the vinyl-covered wire-cable lifelines with Endura 12 single-braid core protected by a Dyneema anti-chafing sleeve. Everywhere you look aboard are little



Stephen applied his boat's name by copying his mother's signature, complete with rabbit.

creative touches that come with time spent aboard: a multi-directional fan that has mounting spots all over the cabin, a clever magnetized light that can cling to the Bimini, a miniature tiller below the aft deck with lines to act as rudder stops, even a removable mainsail catch net (in lieu of lazy-jacks) to work with the boat's original rollerreefing system.

Retirement will come in another four years or so. Stephen is likely to do exactly what he planned at age 50. When that happens, we expect to receive articles about his creative innovations from far-flung destinations. \varDelta

Karen Larson is the editor and co-founder, with her husband, Jerry Powlas, of Good Old Boat. She is often amazed at the stories related by others similary afflicted with oldboatitis and hopes the magazine helps them recognize the condition as normal.



Among the many additions Stephen made to the Vera May was the anchor locker, at left. He also installed the windlass. He went his own way with the lifelines, at right, making them of high-tech synthetic fibers instead of the traditional stainless-steel wire cable.

The Mistral 33 shares numbers

... with two contemporary classic cruisers

by Ted Brewer

The Mistral 33, Ericson 35, and Seafarer 34 are classics by three top designers representing some of the best of a good era: the late 1960s and early 1970s. The boats are as alike as peas in a pod. A study of the numbers bears this out. It's almost as if the designers were told to develop a yacht with a 25- to 26-foot waterline, 10-foot beam, moderate draft, and husky displacement. The differences are very slight indeed.

The Seafarer 34 appears to be a newer, fin-keel development of the original 3-foot 9-inch draft, keel-centerboard Seafarer 34 we featured in May 2008. However, major changes in the deckhouse, displacement, waterline length, underbody, and sail area make this a different yacht.

Performance of the three will be very close, as they are within a few inches of the same waterline length and beam and within a few pounds of the same displacement. The Seafarer has the lowest sail area but her slightly deeper draft and lower wetted area might give her an edge over the Mistral in all but the lightest air. The Ericson's spade rudder helps reduce wetted area. She also sports a significant bustle that, combined with her good ballast ratio, could give her a slightly higher potential speed in a stiff breeze. It would be a close race. The final result would be decided, as it often is,

Mistral 33

by the the skipper, sails, weather conditions, and luck of the draw! Still, any of the three could provide a lot of fun in club competitions and also perform well as a comfortable and fast cruising yacht.

The droopy boom on the Ericson was not a slip of the drawing pen. It is a strange quirk of the old IOR rule that was, fortunately, amended a year or two later, so there's no reason not to have the sail re-cut to normal proportions. The Seafarer and Mistral were both designed with singlespreader, deck-stepped spars with double lowers, and the Ericson with a deck-stepped, double-spreader rig with inboard shrouds and a single lower. Being old-fashioned, I prefer double lowers for cruising and a keel-stepped mast for bluewater voyaging. The latter has nothing to do with strength, as a properly designed deck-stepped spar is just as strong as a

AAA

Ericson 35	Seafarer 34

	Mistral 33	Ericson 35	Seafarer 34
LOA	33' 5"	34' 8"	33' 9"
LWL	25' 1"	25' 10"	25' 6"
Beam	9' 11"	10' 0"	10' 0"
Draft	4' 10"	4' 11"	5' 3"
Disp.	11,600 lb	11,600 lb	11,700 lb
Ballast	5,300 lb	5,000 lb	4,760 lb
LOA/LWL	1.33	1.34	1.32
Beam/LWL	0.395	0.387	0.392
Disp./LWL	328	300	315
Bal./Disp.	0.457	0.43	0.407
Sail area	538 sq ft	533 sq ft	502 sq ft
SA/Disp.	16.8	16.6	15.6
Capsize no.	1.75	1.77	1.76
Comfort ratio	30.3	29.1	29.9
Year introduced	1967	1970	1974
Designer	Olle Enderlein	Bruce King	McCurdy & Rhodes

to a rigging failure, the keel-stepped spar usually will have a stub left from which an emergency rig can be set. In the same situation, there is little hope of saving the deck-stepped mast before it beats a hole through the fiberglass. It must be cut away, leaving you with a low-speed motorboat. That said, Marvin Creamer's *Globe Star*, one of my

keel-stepped spar. My reasoning is that, if the mast is lost due

Huromic 35s with a deck-stepped mast, was rolled 360 degrees in fierce seas between Tasmania and New Zealand and came upright with her mast and rig intact. She went on to round the Horn and complete her historic circumnavigation without the use of instruments. A sister ship rounded the Horn in both directions, solo, with no problems. So a yacht with a deck-stepped spar can be a true bluewater vessel, provided the designer did his job. I have no qualms in saying that the designers of these three boats produced strong masts and rigs. Given good workmanship and proper maintenance, these yachts will take you anywhere you want to cruise.

Their moderate draft and strong ballast ratios denote stiff hulls. Their capsize numbers of 1.75 to 1.77 indicate they will recover in good order from a knockdown and bring you home

safely. They are a far cry from the capsize numbers of 2.0 to 2.10 and above of many modern, super-beamy, light-displacement yachts. Their comfort ratios are also reassuring. Modest beam and good displacement combine to produce a yacht that will have an easy motion in heavy weather. They'll sail at a greater angle of heel than today's chubby cruisers but they'll scend more slowly in big seas and will not be as bouncy in beam seas or a steep chop.

These are three good old boats that combine performance, comfort, and safety in one package and their classic designs will bring approving nods from knowing sailors wherever they drop their hooks.

Ted Brewer is a contributing editor with Good Old Boat and a wellpracticed and respected authority on the art of yacht design.

Zero-discharge solution

A cruising family installs the Air Head

by Connie McBride

hile debating a return to the continent after nearly six years in the Caribbean, we tried to imagine the changes that would force us to make in our lives. Since our first stop was to be a few months in Marathon, Florida, we narrowed our Internet search to the Florida Keys, and that's where we first learned of their no-discharge laws.

No-discharge laws have been in place in the Great Lakes for years and many states are implementing similar laws. We recently read that North Carolina boaters are required to maintain a pump-out log, documenting timely pump-outs depending on the amount of time spent on board.

To ease (and verify) compliance in Marathon's Boot Key Harbor, a pump-out boat makes its rounds and each boat is expected to give an appropriate donation from its holding tank. Boaters who fail to do so on a weekly basis are fined and can be expelled from the harbor. With the increase in regulations and enforcement, it was time for us to find a legal replacement for our bucket.

Aboard our 34-foot Creekmore, *Eurisko*, we had been using a bucket for five years, ever since we removed the marine head, holding tank, Y-valve, various hoses, fittings, and through-hulls, and fiberglassed over the two holes in the hull that had been left behind. Unwilling to lose all we had gained by such a change, we searched for an alternative. (A bucket has its advantages: less space required, no hoses to leak or smell, no through-hulls, no sharp hose clamps to scrape against as you clean, and, best of all, it needs no periodic rebuild.)

Our best alternative was an Air Head dry toilet. It meets all no-discharge laws without the space demands and fuss of holding tanks and pumpouts. We had investigated the Air Head when we switched to a bucket, but there were five of us on board at the time and we were told it would not compost as quickly as we could fill it. Now, with two boys in college, the Air Head was a more viable option.

Physical fit

Before ordering the toilet, we had to be sure it would fit in the designated space. On the company's website, the Air Head toilet is shown to be 17½ inches fore and aft, a bit less than 18½ inches from side to side including the crank handle, and 19¼ inches tall. These dimensions do not tell the whole story, however. The crank handle (used to stir the compost) must have room for a complete revolution, the household-sized toilet seat sticks out the back an additional 2 inches, and there must be room for a fitting to attach the ventilation hose to the unit. Since space was an issue for us, we ordered



The Air Head is bulkier than a standard marine toilet and a close fit in *Eurisko*, but it eliminates the need for a holding tank.

(free) a handle that accommodates a %-inch-drive ratcheting wrench handle, so very little room is required to "stir" a complete revolution.

We also requested a marine-sized toilet seat (free) to save the 2 inches in the back. When ordering, you must specify a right- or left-hand crank — that's your right or left hand as you stand facing the Air Head. The exhaust hose will be on the side of the unit near the back, making it another variable to consider. The most difficult part of the entire process was paying for it: \$1,100 with tax and shipping, including 5 extra feet of exhaust hose. But with so few moving parts and a 2-year warranty, we hope this is the last time we have to invest in a marine sanitation device.

The Air Head arrived complete with the wrench-handle adapter and the marine-sized seat we had requested (including rubber gaskets on the seat and lid to decrease odor in the boat), 10 feet of exhaust hose, a rubber hose fitting, a 12-volt fan in a shroud, a removable liquids tank with cover, a lid for use when transporting the solids tank, mounting hardware, one block of coconut-fiber starter peat, a few tablespoons of enzymes, 50 bowl liners (we call these

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Useful modifications



One Air Head kit complete, some assembly required, above left. It included the vent hose, various fittings and consumables, and the cover for transporting the compost tank. The inverted bowl component, above right, shows the liquids conduit, at the left, and the trapdoor (its lever is at the lower right). Venting is aided by a 12-volt fan in a shroud, which Dave mounted beneath a Dorade, bottom of page.

"deposit slips"), and instructions. I was disappointed by the fact that the exterior of the unit is textured, making it harder to clean. The folks at Air Head redeemed themselves, though, by making the inside of the bowl exceptionally smooth and very easy to keep clean.

Installation and priming

The Air Head can be installed easily in a few hours. The base is attached to two brackets that are screwed onto the platform where the head will sit. The rubber hose fitting attaches to the base of the head at one end and the exhaust fan at the other. We chose to attach the fan under the Dorade vent to avoid drilling another hole in the deck. My husband, Dave, connected the hose to the shroud around the fan and then attached the shroud to the headliner under the Dorade vent already in place.

If no Dorade is available, some sort of exterior vent or cover must be installed. The folks at Air Head recommend a passive vent, though you could also use a Nicro solar vent. So far, our installation in the Dorade has been sufficient. We keep the vent facing away from the wind so it does easy to stir with the crank handle. We learned to be sure to close the trapdoor to the solids tank (we call it the "deposit box") because the stirring can fling the contents around a bit. Next, we stirred in the package of enzymes, also included. Additional enzymes must be added after each emptying of the tank. They are the same enzymes used for maintaining septic-system health and can be bought at hardware stores. One brand is Drain Care. The liquids tank is prepared for use after each emptying by pouring in $\frac{1}{2}$ to $\frac{3}{4}$ cup of sugar. This reduces the odor released during emptying.

Operating protocol

As with any marine head, when we have guests aboard we run a brief "toilet etiquette" class. Because the system works best when as little liquid as possible is put in the solids tank, we recommend that everyone sit. This has always been our rule offshore anyway; it is safest, cleanest, and ensures that liquids are kept separate.

When making a deposit, place a "deposit slip" (coffee filter) over the trapdoor, provide donation, depress the lever for the trapdoor, and the deposit falls in. Close the trapdoor

not counteract the fan. Total installation time was 8 hours, including two trips to the hardware store for parts that added \$40 to the cost of the head.

We were then ready to prepare our Air Head for use. Following the instructions, we placed in the solids tank the coconut-fiber brick (as an alternative to peat moss) that had been provided, added 2 quarts of water, and let it sit overnight.

After it had absorbed the water, the coconut fiber was



and turn the handle to stir and bury the deposit in the compost. Alternatively, you can make a direct deposit with the trapdoor open, in which case no deposit slip is necessary. This is not recommended for liveaboards or for rough weather usage because it leaves the deposit box open too long. For weekend-only

Resources Air Head toilet www.airheadtoilet.com use, Air Head says toilet paper may be placed in the solids tank as the unit will have more time to compost. This is not recommended for liveaboards.

After a few days of use, or before leaving your boat for any length of time, empty the liquids bottle. A clear hose allows you to see the liquid level and gives you an idea of when it needs to be emptied. Unscrew the two attachments, slide the bottle out the front, attach the lid, and take it to any toilet to empty. The bottle is discreet and weighs only 12 pounds when full. Before reattaching it to the tank, rinse it with a little vinegar and hot water, then add the sugar.

Since the solids shrink as they decompose, the longer the contents stay in the deposit box the more times the head can be used before it needs to be emptied. Weekenders can make about 80 deposits, liveaboards about 60.

When the time comes to empty the tank, you have a few options. If the contents have been sitting for a minimum of three months, they will have completely composted and can be trenched into soil in most areas (but check local regulations). Otherwise, it's perfectly legal to empty the contents into a trash bag and throw it away. It is also legal to empty the solids tank into a composting toilet, such as those often found at national parks. Offshore, the tank can be dumped over the side.

For liveaboards, whose tank contents will not be completely composted by the time the tank is full, a second solids tank is a good idea. Simply cap the full one and store it until everything has composted. It is 12 inches in diameter and 11 inches high.

Maintenance and recharging

After emptying the solids tank, don't clean it. In the presence of the peat and with the airflow through the deposit box, non-odorous aerobic bacteria have grown and some of them will still be present in what remains in the tank. These are the good bacteria, as opposed to the stinky anaerobic bacteria. Urine inhibits all bacterial growth — another reason to be careful to keep it separate.

The bowl itself can be cleaned with any non-abrasive, nonchlorine, hard-surface cleaner. To ensure we do not introduce any cleaner into the deposit box and disrupt the growth of the good bacteria, we use cleaning wipes.

It is recommended that you clean the screen on the fan every few months. We have simply eliminated the screen since its purpose is to keep out bugs and we don't have screens in our Dorades anyway. Removing it may also increase the airflow through the tank.

Other users of composting toilets have warned us that getting them "primed" is tricky, so we were not surprised by the smell wafting from the Dorade by day three. We thought maybe our "good" bacteria needed more time to grow, so we waited. Finally, after a week, I reread the instructions to see what we had done wrong.

"The more you use the unit the more moisture is in the solids tank," they read. "Adding peat has a surprising drying effect. When in doubt, add more peat moss."

As it turned out, although we had been provided with only one brick of peat, Air Head recommends liveaboards start with two. We purchased another brick, and within hours of adding it to the tank the smell was mostly eliminated. Peat can be purchased at most garden centers, but we prefer the coconut fibers from Air Head.

For weekenders, I would recommend the Air Head composting toilet without reservation. Liveaboards, however, must consider several factors before deciding if it is right for them.

How many people are on board? The folks at Air Head do not recommend full-time use for more than three people.

How strict are the laws where you sail? With the increase in regulations and their enforcement, a composting toilet may soon be the only option in some areas.

For the price, ease of installation, and peace of mind (being certain we are legal even in no-discharge zones), the Air Head composting toilet is, for us, the next best thing to a bucket. \varDelta

Connie McBride, her husband, Dave, and their three sons set off on Eurisko, their 34-foot Creekmore cutter, in 2002 and have since spent most of their time cruising the Caribbean. Connie's book, Simply Sailing: A Different Approach to a Life of Adventure, is available through Amazon.



When the Air Head is used as recommended, all urine is directed into the liquids tank mounted on the front of the solids tank, at left. It has a handle for carrying it ashore for emptying. The "deposit slip" covers most of the bowl's surface, at right, and disappears into the compost tank at the touch of a lever.

Sailing life

Mexico-bound in company

Rallying to the call of the Baja Ha-Ha

ichard Spindler, founding editor of California's regional sailing magazine, *Latitude 38*, has led his annual Baja Ha-Ha rally from San Diego to Cabo San Lucas since 1994. The Grand Poobah, as he is called. has tweaked and refined the rally over 17 years to make it the premier event for West Coast cruisers headed south. They experience coastal and bluewater sailing on the first leg to Turtle Bay, an easy anchorage where fuel and some supplies are available. Then the Poobah ratchets it up on leg two, where the anchorage at isolated Bahia Maria is windy and the surf is rough. By leg three, cruisers are ready to handle the Sea of Cortez eastern capes or mainland Mexico.

Although the Ha-Ha is not as challenging as some East Coast rallies, applicant skippers are expected to have well-found boats and some overnight ocean voyages under their belts. Liability waivers and the notice of race make a clear statement: "Anyone not seeking a high-risk activity or not willing to accept full responsibility for injury and/or death - no matter what the cause — is not eligible for entry." Strong words. However, it's good to know that the U.S. Coast Guard keeps track of the fleet to the U.S. border, from where the USCG-trained Mexican Pacific Navy maintains a presence down the full 750-mile length of the barren Baja coast.

Last October, after two years of preparation and boat upgrades, I sailed my 1980 C&C 34, *Legacy*, with a crew of two from San Francisco to San Diego to join the fleet. There we found about 140 boats that had sailed from Canada, Washington, Oregon, and California to join Baja Ha-Ha XVII. Along with Assistant Poobah Andy Turpin, and skipper Dona de Mallorca, Richard was once again on hand to shepherd the flock of monohulls, multihulls, and powerboats from the mother ship, his 63-foot catamaran, *Profligate*.

The 2010 event started in San Diego on October 24. After the captains' meeting and a detailed orientation, I donned my costume and stepped into the traditional send-off party in

the West Marine parking lot. My \$300 entry fee (\$350 for larger boats) included food, fun, and a Ha-Ha ditty bag full of swag from the various sponsors: cap, T-shirts, and loads of other stuff, plus a large Ha-Ha flag to fly proudly.

The Baja Ha-Ha fleet departs Turtle Bay at the start of the second leg of the rally, at top. Lewis lets *Legacy*'s autopilot do the work while he catches some shade, at right.

Sunny start to leg one

On October 25, all the boats — with most skippers and crew in costume streamed into formation for a parade past TV crews near the police dock and out to the starting line. The post-El Niño weather had given us uncharacteristically wet weather and lumpy seas with mixed NW and SW swells. But, that day, we saw sunny skies with wind that took us past the Coronado Islands and across the Mexican border on our three-night first leg past Cedros Island to Turtle Bay. We chose to sail leg one about 30 miles offshore, where there was more wind.

by Lewis Keizer

The morning radio routine while under way included the Poobah's 0700 SSB net followed at 0900 by a VHF weather broadcast and



announcements. Cruisers reported their 0600 positions on SSB by rally divisions, which are based on size and rating. The many boats without SSB were able to relay their positions via VHF to other boats that had SSB. Procedures were well organized. It took about an hour for 140 boats to report in and get questions or issues addressed.

At the end of the first leg, we anchored for two nights in Turtle Bay. The water was 73 degrees — 22 degrees warmer than in San Francisco! I dove in wearing nothing but my Speedo to cut crab pot lines that had fouled *Legacy*'s propeller. From here on, everyone wore shorts and wide-brimmed hats.

Pangas refueled us with clean diesel at Mexican Pemex prices. Boaters who didn't want to risk their dinghies in the surf used air horns to hail pangas for a ride to the beach party (\$2) and back (\$3). Other Ha-Ha boats shared the fish they had caught along the way.

The party moves on

Leg two was a three-day sail to Bahia Santa Maria, just north of Magdalena Bay. This remote fishing village puts on a beach dinner each year for the Ha-Ha. Because there are no roads much of the way, the rock band drives overland from La Paz in off-road vehicles. They plug into their own generator and play for tips. The village makes half its annual income on the Ha-Ha dinner and the band makes a lot of money too.

While the fleet was in Bahia Santa Maria, a southbound singlehander, who was not in the Ha-Ha, fell asleep and his boat, on autopilot, went ashore on the wreck-strewn coast outside the Bahia. The Grand Poobah and some 50 Ha-Ha boaters helped the skipper salvage everything from the boat, which was too far into the shallows for the Mexican Navy cruiser to be of assistance.

Leg three to Cabo, where we arrived November 4, was an overnight sail. There was no wind close in or far out, so most of the fleet motorsailed 5 to 10 miles offshore over gentle seas. But we were hit with 25- to 30-knot headwinds as we rounded the cape. The unusual east wind off Cabo was forecast to moderate, so many boats anchored on the lee shore.

At the Ha-Ha's first stop, Turtle Bay, rally participants gather for the shore party, top of page. A less fortunate non-participant's cruise ended on the beach off Bahia Santa Maria, at right.



Bad idea. They rocked and rolled until most finally surrendered and sought shelter in Cabo Marina, where most of the Ha-Ha boats were accommodated. My boat was rafted up three deep with six others on an end tie, but even with the Ha-Ha discount I paid about \$90 per night.

My crew vacated to land accommodations as soon as we arrived. The next day, I paid an agent to do the entire captain's port check-in for me. The final day's beach party ended late Friday night. Hundreds of people from the rally attended the traditional Ha-Ha award ceremony Saturday night in the parking lot of Cabo Marina.

Our passage from San Diego to Cabo, including the stops at Turtle Bay and Bahia Santa Maria, took 11 days. Over my entire 4-week, 1,500-mile voyage from San Francisco, where I started, to La Paz (I singlehanded after Cabo), my good old C&C 34 proved to be strong and seaworthy. \varDelta

Lewis Keizer began sailing in 1980 and is a licensed captain and an officer in Capitola USCG Auxiliary 6-10. He sold his C&C 34 in La Paz after sailing it there from San Francisco, and now owns a good old Ranger 29 that he singlehands in and around San Francisco Bay.

Resources

Ha-Ha history, application forms, waivers, rally schedule, "First Timer's Guide to Cruising Mexico," and other links: www.baja-haha.com



Review boat

ave Gow's Ranger 26, *Bandit*, was built in 1973 and he's owned her since 2006. Over the years, the boat's several skippers have won a lot of races and the plaques are there to prove it, proudly displayed on her main bulkhead. As well as keeping to an active racing schedule, Dave and his wife, Roberta, together with daughters Kathy and Becky, Becky's husband, Josh, and their two small children, take turns forming various crews to cruise Puget Sound and the island groups beyond.

Design

Gary Mull was an exceptionally prolific, able, and successful designer of outstanding sailboats, including the Santana 22, 27, and 37; the Ranger 22, 23, 26, 29, 32, 33; and the SORC-winning Ranger 37. Gary also designed the Newport 30 and 33; the Kalik 44; the Freedom Independence 28, 30, 36, 42, and 45; the successful Half Ton, Hotflash, and the 12 Meter, USA. He also designed several 6 Meter match racers, including Ranger, raced by Ted Turner. The list continued until Gary's death in 1994 at the age of 55. For an extended article on his life and legacy see "Gary Mull in Retrospect" in the November 2002 issue of Good Old Boat.

The Ranger 26 is sometimes confused with another boat of the same name. Our review boat, built in Costa Mesa, California, is sometimes called the California Ranger 26 to distinguish it from the Ray Richardsdesigned Kent Ranger, built in Kent, Washington. Ray Richards' boat is a more traditional design with a clipper bow and a very shippy sheer.

Gary Mull's Ranger 26 was conceived as the ideal compromise between racer and small family cruiser. Two long portlights along the cabin side light the saloon while a smaller port forward marks the location of the head and hanging locker; they are purposely placed and well proportioned. There is neither too much nor too little freeboard and the proportion of cabintop to foredeck and cockpit coamings seems right. There is nothing about the profile that seems forced or otherwise contrived to achieve headroom or a more modern appearance.

Ranger 26

A swift, sweet, and well-mannered all-rounder

by Richard Smith



66 The Ranger 26 is undeniably fast and looks it. In 1970, one of these boats won the North American IOR Half Ton Cup. **99**

Whereas today underwater appendages are generally vertical, the thinking in the late 1960s and early '70s was to rake them aft, as seen in the Ranger 26's "swept back" keel and rudder. Looking at the Ranger 26 in profile, the canoe body is relatively shallow. The displacement/length ratio, at 254, and the sail area/displacement ratio, at 15.9, are moderate.

The Ranger 26 is undeniably fast and looks it. In 1970, one of these boats won the North American IOR Half Ton Cup.

Construction

Construction of the Ranger 26 employed technology common in the 1970s. The hull is hand-laid fiberglass with an inward-turning flange along the sheer. The solid edge of the balsacored deck laps the hull flange. Both are topped by an extruded aluminum toerail and mechanically fastened by bolts at 6-inch centers.

The Ranger 26 incorporates an interior fiberglass pan molding that simplifies the construction of furniture. Horizontal surfaces of the pan, such as the settee and forward-cabin berth supports, are reinforced with a plywood core. A padded-vinyl headliner covers the overhead and continues down to cover the cabin sides.

Deck hardware is fastened conspicuously through the headliner and finished off with washers and cap nuts that, however convenient, could result in some scraped heads. A larger concern is the suitability of the washers as backing plates. Dave lost the bow pulpit in a racing accident. The nuts and washers securing the bolts that held down the base fittings tore through the deck, indicating the need for better backing. He replaced the washers with stainlesssteel backing plates. It's good practice to reinforce through-bolted hardware with proper backing plates or larger diameter washers. (See "Better Backing Blocks" in the March 2010 issue.)

The 1-ton iron keel is bolted to the hull and requires periodic inspection and maintenance. Recently, all 10 of *Bandit*'s ½-inch galvanized bolts were found to be badly corroded and were replaced. At the same time, Dave had the keel sandblasted to bare metal. He filled pits and faired surfaces with an epoxy filler, painted it with coal-tar epoxy, and added a barrier coat before applying antifouling bottom paint. The hull is free of blisters.

On deck

Sidedecks on the Ranger 26 average about 12 inches wide and hardware

such as chainplates, genoa tracks, and blocks can be obstacles to crew moving forward. Lifeline stanchions are angled outboard, which helps a little, and the aluminum toerail is an advantage in a seaway, but with a sea hood, raised forward hatch, and sundry other protuberances, the deck must be negotiated carefully to avoid tripping or rolling a foot over the various items of running rigging.

Dave stows the anchor in the forepeak with the anchor rode, which is led there through a hinged deck pipe. He carries the anchor on deck when cruising and plans to add a bow roller. A hatch is located just forward of the mast on the cabintop. The non-skid pattern molded into the deck is about average in effectiveness.

A close inspection of the deck moldings revealed a large amount of crazing in the gelcoat, especially at tight radiuses. These cracks are usually more of a cosmetic than structural problem and often result when the builder sprays the gelcoat too thickly. The small stress patterns arise as a result of expansion and contraction with temperature changes. Repairs can be made, but after almost 40 years of hard use, a good old boat is entitled to show a few wrinkles here and there.



The companionway has a low sill for easy ingress and egress, at left, but in rough conditions the bottom weather board should be locked in place. The red lines running along the cabin sides are part of Dave Gow's boom vang/preventer system. The cockpit has high coamings for comfortable backrests, at right. Dave says the 8-hp outboard has always been more than adequate power, even against Puget Sound's notorious currents.

Review boat



The galley in the Ranger 26 is quite minimal. The small sink is hard against the aft bulkhead on the port side, at left, and the stove is opposite on the starboard side, at right. The starboard settee extends under the stove, and shelves above it provide storage for sundry items.

The cockpit

Seating along the full length of the large 7-foot 2-inch cockpit makes for smooth crew movement when tacking and jibing and a creates a spacious area for dockside socializing and comfortable cruising. The width between the benches seems about right for leg bracing when heeled, but the seats may feel a little low for long-legged crew. Rather than quarter berths, Gary Mull designed generous stowage areas under both cockpit seats. The starboard seat locker is large enough to fit an outboard and one or two 6-gallon gasoline cans. The port-side locker is identical, and the locker covers are secured by lines leading below and forward to jam cleats in the galley.

The outboard motor is mounted in a transom notch, and a low bulkhead forward of it helps keep the cockpit dry. The traveler is just forward of the engine where it's handy to the helmsman and the mainsheet is out of the way of the crew. A long tiller provides good leverage and helps locate crew weight forward and nearer the boat's center of gravity (weight in the ends of a boat induces hobby horsing). A compass, knotmeter, and depth sounder are located on the after bulkhead. Dave has a GPS chart plotter on a hinged mount in the galley (that he swings out for cockpit viewing) and an Autohelm tiller autopilot.

The rig

The Ranger 26 is a masthead sloop with an aluminum mast stepped on deck and supported by a headstay, a backstay (with a tensioning bridle), two upper shrouds, and four lowers. A topping lift supports the boom. In addition to the mainsail, *Bandit* sails with a 130 percent genoa on a Harken furler. Dave plans to replace the primary winches, currently two-speed Barient 21s, with Harken 32 self-tailing two-speed winches. The main and spinnaker halyards are handled by two Lewmar 6 winches.

Belowdecks

A small bulkhead with an opening separates the forepeak and its anchor rode from the forward cabin V-berth. The berth, which is 6 feet 6 inches long by 6 feet wide at the head (and narrow at the foot, as always with such berths), provides adequate room for a couple. Shelves run the full length along either side. There is considerable storage below the mattress supports and a convenient access drawer pulls out into the adjacent area to the rear



Bandit's racing honors, garnered under several owners, adorn the main bulkhead, at left. Forward is the small head compartment and spacious (for this size boat) V-berth. The dinette in the saloon, at right, is well lit by the fixed ports in the cabin trunk and converts to a double berth.

of the berths. This space also houses a portable toilet to port and a storage locker to starboard. A well-placed deck hatch provides light over the berth and the toilet area, and a door in the main bulkhead provides privacy.

Aft of the main bulkhead, on the port side, is a dinette that converts into a small double berth. Stowage areas are located below the benches and behind sliding doors outboard of the table. Opposite to starboard, a settee provides a berth (larger than a single but smaller than a double) with shelves along its length and good stowage below.

The boat has 5 feet of headroom throughout and a generous 3 feet 4 inches of headroom over the seats. The idea is to get below and sit down right away trying to move around in most 26 footers is hard on the back.

Bulkheads are plywood finished with teak veneer and the trim is solid teak. The plywood sole lifts to reveal the keel bolts. The bilge under the cabin sole is too shallow for a bilge pump but Dave reports that the only water that gets below comes from the little spray she takes aboard when hard pressed — and perhaps a little condensation — which he takes care of with a sponge. A large diaphragm bilge pump removes water from the space below the cockpit.

A two-burner Dickinson propane stove is located to starboard aft of the settee, with a VHF radio mounted directly overhead. A hinged counter, about the same size as the stove, can be used for additional space at mealtime. A sink and small counter are opposite to port with the swing-out GPS chart plotter above.

A low threshold separates the cockpit from the cabin, and a box, which also serves as an icebox and is conveniently located between the sink and stove, provides a step. Companionway dropboards are stowed on either side of this niche, held in place with bungee cords. A fire extinguisher is mounted in one corner. Forward of the step and just above floor level is an electrical panel on one side and the sink's foot pump on the other — it's a good place for the pump; for the electrical panel, not so much.

Accommodations in the Ranger 26 are minimal but well thought out and practical, with priority given to a crew lounging below with coffee and sandwiches rather than sitting down to formal meals. The galley is about as small as it could be but there is good specialized stowage. Additional stores may be kept in the copious cockpit lockers. Provisioning for three or four over a weekend or more may prove a challenge, but not beyond the means of a well-organized crew.

The engine

Dave says that in several years of racing and cruising in the tidal waters of the Pacific Northwest, with its narrow passages and swift-running currents, Bandit's Yamaha 8-hp four-stroke outboard with 6-amp alternator is up to the task. Dave and Josh reckon they average about 51/2 knots cruising while consuming a half gallon of gasoline per hour. Fuel is carried in two 61/2-gallon tanks stowed in the starboard cockpit locker. It's a quiet engine, convenient to use and to remove for servicing. The throttle and gear shift are on the handle along with a power-tilt lever to get its 25-inch shaft down deep where



Ranger 26

Designer: Gary Mull Builder: Ranger Yachts LOA: 26 feet 3 inches LWL: 21 feet 9 inches Beam: 8 feet 8 inches Draft: 4 feet 4 inches Displacement: 5,860 pounds Ballast: 2,050 pounds Sail area: 322 square feet Disp./LWL ratio: 254 SA/disp. ratio: 15.9 Ballast/disp. ratio: .35 the prop is less likely to be lifted out of the water by following seas.

Under way

Dave started the engine before lifting and swinging the tiller 180 degrees. This reversed the rudder direction fore and aft, allowing precise maneuvering as we backed out of the slip. With the rudder back in its normal position, Josh hoisted the mainsail, shut down the engine, and we sailed away in 8 to 10 knots of wind into Puget Sound. *Bandit* handled very well under the main alone, pointing relatively high and moving in a lively manner.

When Becky rolled out the genoa, we heeled slightly and quickly picked up speed. The overriding sensation was one of a boat much heavier than 5,860 pounds but very responsive to the tiller. We made about 5 knots closehauled in the light wind; a little faster when reaching. The Ranger was beautifully balanced with just a small amount of weather helm on various points of sail on the wind. She came about surely and settled nicely into the other tack.

Under the PHRF formula, the standard boat with spinnaker and 150 percent genoa is given 207 seconds per mile; *Bandit* sails with a spinnaker and 130 percent genoa and rates 213. The Southern California fleet races at 198. Other hot boats of that era, the Cal 25 and Pearson 26, rate 222 and 216 respectively.

Conclusion

The Ranger 26 is a well-built, stable, and forgiving boat that shows a good turn of speed when sailed well. After 38 years of hard use, including an enviable racing record, *Bandit* is as sound and agile as when she was new, attesting to continuous and careful maintenance by her several owners. All that and she's very pretty to look at too.

A check with Google shows several 1972 to 1976 Ranger 26s with asking prices from \$3,000 to \$5,800, which suggests that a boat as good as *Bandit* should be a very good buy indeed.

Richard Smith, a contributing editor with Good Old Boat, is an architect. He specializes in designing and building very small houses and has built, restored, and maintained a wide variety of boats. These days, he and his wife, Beth, sail their Ericson Cruising 31, Kuma, on the reaches of Puget Sound.

refloat a boat

Lake Tahoe never freezes but it has been known to get enough snow to sink a boat.

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y friend Tony, who owns a nice Ranger 23, called one day last spring to say he had a problem with his boat. He asked if I would please come down to the marina and have a look. A really sad sight greeted me on my arrival.

As we chatted, he told me he had docked the boat where we sail on Lake Tahoe the previous fall and had not revisited it until April 14. In the meantime, Lake Tahoe experienced one of the 10 most severe winters on record. Apparently, snow piled up on the boat until its weight forced the cockpit scuppers to work in reverse and fill the boat with water.

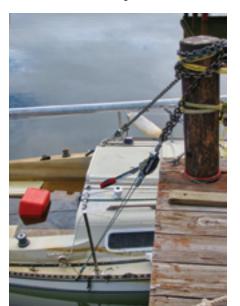
"OK," we asked each other, "What do we do *now*? Give up and call in the pros to put airbags under it and send you a bill for two grand?" That was not an option for these two sailors, one old geezer and one younger guy. Instead, I went home and loaded up the truck with equipment.

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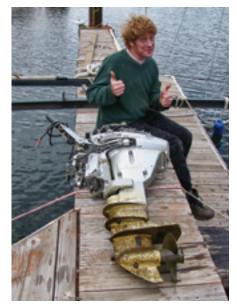
by Jim Hildinger

nune.

We were fortunate that the boat was right next to a pier with substantial 12-inch posts that could be used as anchors. We attached a pair of comealongs to one of these posts and hooked them onto the toerails close to the primary winches, where the fastenings *continued on page 76*







Rather than call in a salvage team with airbags, Jim and Tony chose ingenuity. A pair of come-alongs hooked into the toerails provided lift aft, at left. Once the cockpit coamings were clear of the water, Tony set to with a bucket, center. The outboard needed a little drying out, at right.

Clever cleaning

A long-term cruising sailor comes clean

by Connie McBride

hen we made our escape from the house, careers, and land nine years ago, certain domestic chores followed us on board our Creekmore, Eurisko. We still had to feed, educate, clean up after, and clothe our three growing boys. Since we were cruising on a budget and working only a few months a year, we found inexpensive (though frequently time-consuming) ways to meet these basic needs: we bake our own bread, home-school the children, and avoid Laundromats by washing our clothes on board.

There are many methods of doing laundry on a boat. The most ridiculous one I have seen is a full-sized household washer on the deck of a 48-foot sailboat.



On laundry day aboard *Eurisko*, the tools and supplies are easy to assemble.

This was not just a floating home; this couple regularly traveled a thousand miles a year in the Caribbean with their washing machine tied to the mast.

Only slightly more practical are combination washer/dryers designed for use in a boat or RV. Innovative Washing sells a variety of these machines, starting at around \$1,000. They operate on 110 volts and require more than 10 gallons of water per load. The smallest one is 34 x 24 x 22 inches

and takes 1 hour and 45 minutes to wash and 1 hour and 25 minutes to dry a 3¹/₂-pound load. (For reference, a full-sized washer load is 22 pounds.) Even if these appliances were free, we could not afford the space, electricity, or water to use one.

A more sensible option for sailors on our end of the spectrum is the Wonder Wash plastic hand-powered washer sold at Cleanairgardening.com for \$50. We have a friend who uses his often



Connie measures a laundry load by filling the bucket with dry clothes, at left. She then adds detergent and dissolves it in water (pre-warmed, if needed, by the sun), center. The wash cycle then commences with the plunger, at right.

Clever cleaning



Connie uses an old-fashioned wringer, at left, to wring out the soapy water before rinsing, then again to remove the rinse water. To ensure the clothes can resist the trade winds, Connie uses their buttons and cords to back up the clothespins holding them on the lifelines, at right.

and with great results. It is an 11-inch diameter barrel on a 14 x 17-inch stand. Add detergent, 5 pounds of clothes, and $1\frac{1}{2}$ gallons of warm water. Close the lid and use the handle to spin the barrel at a rate of 1 revolution per second for 2 minutes. The agitation and warm water create pressure which is said to help remove dirt. Drain, repeat with rinse water, drain, wring, and hang clothes to dry.

This method requires a bit of labor, but the washer is small, portable, requires no electricity and, with no metal parts, should last a lifetime.

"Small" and "portable" are relative. What was great for our singlehanding friend on a 50-foot catamaran was not practical for the five of us on a 34-foot monohull. We needed a different solution.

During our first few years of cruising, we endured the expense and hassle of lugging dry bags of laundry to shore, finding a coin laundry, getting correct change in the local currency, and wasting hours watching the clothes wash and dry. Then we remembered an elderly gentleman whom Dave befriended 15 years earlier. Over iced tea during one of their afternoon visits, Mr. Carney finished washing his laundry — with a bucket and a toilet plunger. From these memories, trial and error, and with improvements over the subsequent years, we reached our current laundry routine.

Wash and rinse

I start by filling our 3-gallon bucket with dry clothes. This determines a load. Seven T-shirts is an average-sized load. (The one pictured is three T-shirts, three tank tops, three pairs of shorts, and three swimsuits.)

After removing the clothes, I add water — including a teapot of boiling water if I want a hot-water wash. For a warm wash or rinse cycle in the tropics, I leave the water jugs or the bucket of soaking laundry in the sun.

Next I add detergent and bleach, if desired. A word of warning about detergent: add only enough to make the clothes feel a bit slippery. If you see suds or the water feels soapy, you have added too much and it will require more water to rinse them. Adding bleach seems to lessen the amount of detergent you need. When available, we use a powder detergent made specifically for hand washing clothes in cold water. We have only found this in Central America, but it may be available elsewhere.

I use the plunger to stir and dissolve the detergent, then add clothes and more water until the bucket is full. Be sure not to overload the bucket with clothes leave room for the plunger and for the clothes to be agitated in the water.

I "plunge" the clothes while making sure the load gets adequate circulation — so the shirt on the bottom doesn't stay on the bottom, for example. The agitation and the suction of the plunger force dirt out of the clothes.

I have seen people wash clothes in a bucket using their hands instead of a plunger. Neither my back, from the bending, nor my hands, from being in soapy water for that long, would tolerate this method. After five minutes of plunging, I inspect the clothes for remaining dirt and stains, using a laundry brush on the bigger messes (such as the boys' shorts) and a toothbrush on more delicate fabrics. After spot cleaning them, I plunge the clothes for an additional 5 minutes.

If there is room on the line for this load, I rinse it immediately. Otherwise, I have left clothes to soak for as long as overnight.

To remove rust stains, I make a paste of Bar Keepers Friend (oxalic acid), rub it on the stain, leave it overnight, and then wash as normal.

Wring, rinse, wring again

Until quite recently, our wringing method was hands-on. We wrapped the clothes around the tiller and twisted. While this did remove most of the water, it also occasionally distorted the shape of the clothes, and after a few loads it irritated an old injury in my finger.

In defiance of our "keep it simple rule," we bought an old-fashioned hand-cranked clothes wringer. (This act of rebellion was only made possible by the empty locker we have not yet filled since the older two boys went off to college.) Not only does the wringer not stretch out clothes, it also removes much more water (and, consequently, dirt as well). Our clothes are cleaner now and require half the time to dry.

Our first method of rinsing clothes was to return them to the bucket after wringing out the wash water, fill the bucket with rinse water, and plunge again. The water was cloudy with soap, the clothes were slippery, and

66 After years of living in the trade winds, we have learned a few tricks for keeping clothes from blowing away. 99

they never fully dried. As a result, they often mildewed in the lockers. We now rinse each piece individually with only as much water as necessary, pouring out the water and using fresh water after each one. We have found that the clothes feel cleaner and dry completely and we actually use less water this way.

A note on water conservation: we have read and heard about a clotheswashing method touted as requiring less fresh water - washing in salt water, then rinsing in fresh. Some people use a bucket, others drag their clothes behind them as they sail. The first flaw with this idea is that detergent is not as effective in salt water. Secondly, rinsing all the salt out of clothes requires more fresh water than both washing and rinsing in fresh. We strongly discourage the use of this method.

Trade-wind dry

Once the clothes have been rinsed and wrung again, we hang them to dry. After years of living in the trade winds, we have learned a few tricks for keeping clothes from blowing away.

We attach small items to our lifelines using any tie or strap available (such as those on our boys' board shorts) as well as clothespins. Swimsuits and underwear we cow hitch around the lifeline (pull it through itself). I have sewn strings on the short edges of bath towels so we can tie them with a clove hitch in addition to using clothespins (see article in the September 2008 issue). For anything that hangs down very far (towels and shirts), I pin the front two edges together to prevent them from flipping up in the wind and possibly popping off the clothespins holding them to the lifelines. We secure shirts or shorts around the lifeline with any available buttons or snaps as added windproofing.

For drying sheets or more laundry than will fit on the lifelines, we tie a line from the mast to the cutter stay at eye level and use it as an additional clothesline. We have seen boaters string a similar line athwartships from shroud to shroud. At anchor, this gives the clothes the full power of the wind

head on. Beware, though: if it is very windy, lots of clothes forward of the mast will cause the boat to yaw at anchor. When lying beam to the wind because of current or gusts, this added windage may even cause you to drag anchor, as we can attest.

Inclement weather or overzealous washing late in the afternoon occasionally leaves me with clothes that are not dry by sunset. I do not leave laundry on the line overnight: it gets wetter with the dew, it's noisy, it adds windage, and makes dealing with anchors during a midnight squall much more difficult. After one smelly incident, however, I no longer simply make a pile of damp clothes; they will sour overnight. Instead, I hang them under the awning or in the cabin below, draped or hanging anywhere that allows them to air out.

Tea and laundry

Like most of our money-saving efforts, bucket washing laundry is time-consuming. We choose a sunny, dry, breezy day when we would normally be lounging in the cockpit anyway. Over a cup of tea, while enjoying the scenery and each other's company, we plunge, wring, and hang. As our reward, our clothes are cleaner, smell better, and do not wear out as quickly as they would if they were subjected to washing machines and dryers. Best of all, we can do laundry wherever we may be without ever leaving home. \varDelta

Connie McBride posts her news and views on her website, <www. simplysailingonline.com>.

Resources **Innovative Washing** www.washerdryercombo.com

Wonder Wash hand-powered washer www.cleanairgardening.com

Hand wringers www.dynajet.com www.wringerhand.com



www.fiberglasssupply.com Or call: 509-493-3464 Located in Bingen, WA

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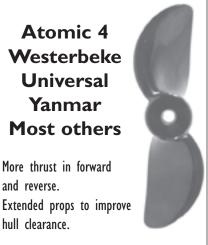
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Restoring luster to a





Maya obediently stays off *La Vita*'s shiny new cabin sole, at top. Temporary plywood floorboards provided something to walk on while Stephanie did the refinishing, above. She protected the adjacent lacquered surfaces with two layers of masking tape. Stephanie took on the project because the sole was showing its 27 years of use, facing page.

A liveaboard steps up to a major project

by Stephanie Concelman

y ears burned and my pride smarted when I heard the old sailor's words: "Some people are too worn out from all the prep work," he said. "They don't take the time they should when they get to application of the finish."

Although his barb was not aimed directly at me it was just a general comment made while we were sitting around a friend's cockpit — I knew he was right. The varnish I had recently applied to my caprail was ragged in places, with runs and voids. I could have done a much better job, but I was so tired from all the sanding and taping that I hurried the application process and did not do my best.

More than 20 years have passed. The old sailor has long since left the marina and I have perfected my varnishing technique, but his words came back to me as I built up the courage to refurbish our cabin sole. This was a huge project that had to be completed quickly. Was I setting myself up for failure?

My husband, Drew, and I live aboard our 1983 Tayana 42, *La Vita*, in Kemah, Texas, with a fuzzy, longhaired dog named Maya who sheds constantly. Keeping the daily accumulation of dog hair at an acceptable level — much less keeping it out of newly applied varnish — is a challenge. But for several years I had wanted to refinish the cabin sole and an unexpected break in employment gave me the opportunity to do so.

First, though, I had to properly set my expectations. *La Vita*'s cabin sole is 27 years old. It was dull, lifeless, and scarred. Even with my best efforts, it was not going to look brand-new, but I could make it look *much* better.

Logistics when living aboard

One of the many challenges of living aboard a boat is the lack of space for large projects. Although it added several hundred dollars to the project cost, I rented a storage shed with electrical power where I could refinish the removable pieces of the sole. This reduced the clutter in and around *La Vita* during the project but accounted for almost a quarter of the overall cost. Anyone who doesn't live aboard or has access to a garage could avoid this expense.

After removing the floorboards, we covered the openings with plywood (cut into manageable sizes)

cabin sole

to reduce the amount of sawdust getting into the bilge and ensure that no one accidently stepped into an opening. I did not put handles on these temporary boards, but if I use them again I certainly will. A loop of rope tied through two simple holes would make removing and transporting the boards much easier.

No one likes to live in chaos, and I was concerned about the effect living in a construction zone for several weeks would have on our morale. To improve this situation, I developed a protocol that allowed us to keep our evenings and weekends as close to normal as possible.

First thing in the morning, I would sand, clean, and varnish the sole inside the boat while Maya stayed on deck. Maya and I then left for the workshop, where I repeated those tasks on the removable floorboards I had taken there. When we returned to the boat in the afternoon, I stored my work materials in the aft stateroom, leaving the rest of the boat free of clutter.

The varnish I had applied to the sole first thing in the morning was dry to the touch by mid-afternoon, and I could cover it with throws in the evening to protect it from dog claws and dropped items. Also, I only varnished Monday through Thursday. This let us enjoy our weekends while allowing the varnish to dry intermittently between coats, dramatically reducing the final curing time.

Tape and strip

The last thing I wanted to do was damage the nearby furniture while redoing the sole, so before doing anything else, I had to protect the surrounding surfaces (bulkheads, table legs, and so on).

The yard in Taiwan where *La Vita* was built had used a spray-on lacquer finish. I was concerned that tape might lift the lacquer from adjacent surfaces, so I taped first with ScotchBlue Painter's Tape for Delicate Surfaces, then covered this blue tape with 3M Scotch green masking tape 233+, which is more resistant to sandpaper. As an added benefit, anytime I was overenthusiastic in my sanding, I would see blue peeking through the green tape, and knew to reapply green tape over the spot before varnishing.

I don't know if the double-tape procedure was worth the extra expense and prep time, but when the tape was removed there was absolutely no damage.

Once the area was taped and I had my plan, the next step was to remove the old finish. There are three general ways to do this: heavy sanding, heat, and chemicals. To choose the best method for your sole, you need to know how it's constructed. Most soles in older boats are made of plywood with a layer of teak-and-holly veneer. The thickness of this



veneer varies from extremely thin to, in *La Vita*'s case, ¹/₄ inch. With a thick veneer, I had more options, but even so I was not comfortable using heavy sanding. It generates a good deal of heat and I was afraid the old finish might burn and darken the sole. I also worried about containing the large amount of sanding dust that would be produced.

I have had good luck removing exterior varnish with a heat gun, but the old finish on *La Vita*'s sole was hardened, discolored 27-year-old lacquer. After testing a small area using a heat gun and a 1-inch steel furniture scraper with unsatisfactory results, I chose the chemical removal method, followed by a light finish sanding.

I couldn't always guarantee I'd be able to keep the hatches open for ventilation, so I needed a chemical removal agent that was safe to use indoors. I chose Citristrip Safer Paint & Varnish Stripping Gel. However, Citristrip is not as potent as traditional varnish strippers

COSIS IOI TETUIDISITING CADIN SOLE			
Rent for workshop	\$ 312.00		
Brushes and rollers	204.16		
Defthane polyurethane varnish	150.00		
Porter Cable sander	150.00		
Sandpaper	130.46		
Sawhorses	100.24		
Таре	90.23		
Scraper tool and blades	78.66		
Heat gun	50.00		
Small Shop-Vac	50.00		
Wood for temporary floorboards	47.88		
Miscellaneous supplies	45.45		
Chemical stripper	40.00		
Paint for backs of floorboards	32.86		
TOTAL	\$1,481.94		
Total work hours spent on refurbishing cabin sole:	300 hours		

Costs for refurbishing cabin sole

and required at least two applications to remove the old lacquer, with each application remaining on the wood for 12 to 24 hours for maximum effect.

Inside the boat, I worked in sections of the sole no larger than 3 square feet; that way, the entire sole was not covered in stripper at the same time.

I preferred to apply the stripper to an area first thing in the morning and scrape it off after dinner. This was not exactly the setting for romantic evenings but it gave the stripper about 12 hours to work. Also, because the stripper dries to the touch in about 6 hours, I had the option of covering the area with a drop cloth overnight and scraping off the old finish the next morning.





The first step in the refinishing process was to strip the original coating from the cabin sole, at top. Stephanie applied stripper in the mornings, then scraped it after dinner. When it came time to use the sander, Drew hooked it up to a Shop-Vac to control the dust, above. Stripping the floorboards in the workshop was much simpler; I applied the stripper one day and removed it the next.

The entire stripping process took approximately 30 hours of grueling work on my hands and knees, and I strongly recommend a quality pair of knee pads.

A sharp scraper is invaluable. After some experimentation, I settled on the ProPrep 1-inch flat-blade scraper made by Spectrum Razor Tools. The Spectrum blades seem to hold their edge well, can be sharpened, and were the right size for my purposes. Using the scraper effectively takes close concentration; always pull the scraper toward you and with the grain while being careful to keep the blade level with the sole. If you accidently dip a corner of the blade, it will make a nasty gouge in the wood.

Repair dings and scratches

After I had removed the old lacquer, I inspected the sole for damaged areas. I was able to sand out most of the blemishes. I filled the deeper dings and scratches that remained with Minwax sandable wood filler. I learned to get the type that hardens after I once used the other kind and had to dig it out and start again.

Some floorboards showed their age with chips and small voids on their undersides, so I repaired these spots first. I taped around the voids and filled them with epoxy resin, let it dry overnight, and sanded it smooth. Luckily, the bottoms of most of the floorboards needed only a couple of coats of paint. I roughed up the old paint with 150-grit sandpaper, cleaned the surface, wiped it with a cheap generalpurpose thinner, and applied two coats of white Interlux Brightside polyurethane. The edges of the floorboards were still in good shape and didn't need painting. I also inspected the edges of the sole in the cabin for damage. Since plywood absorbs moisture much faster through the edges than through a top or bottom surface, damaged edges must be repaired. If moisture gets under newly-applied varnish, it will create bubbles and yellowing on the surface. It can also cause the wood to swell, making it difficult to remove the floorboards.

Sand and clean

Once I had stripped and scraped the majority of the old lacquer from the sole, it was time for sanding.

A high-quality variable-speed random-orbit sander with a vacuum attachment is imperative for this work, but it's important to know the thickness of the teakand-holly veneer before getting to work. The thinner the veneer, the finer grit sandpaper you need to use. With the thick veneer on my Tayana, I was able to use 120-grit sandpaper for the first pass to quickly remove any remaining lacquer and smooth out most dents and scratches. On thinner veneer, I would have started with 150- or even 180-grit paper to avoid sanding through it to the underlying plywood.

I started with the orbital sander on a very low speed setting until I became comfortable with the

sander and the veneer. For tight areas the orbital sander could not reach, I sanded by hand, always with the grain. I finished up with 220-grit paper to prepare a smooth surface for the new varnish.

Initially, I planned to remove all the cushions every day and tape plastic sheets over the lockers and exposed surfaces to keep the dust out, but my ingenious husband connected the orbital sander to a small shop vacuum for me, using a short piece of bilge hose. The reduction of dust in the boat was amazing.

Sanding in the workshop was much simpler. With the help of a long extension cord, I was able to work outside, keeping the varnish area fairly dust-free. On rainy days when I couldn't sand outside, I carted the vacuum setup to the workshop.

After sanding, I thoroughly cleaned everything by vacuuming and dusting the sole and surrounding areas. I then wiped the sole with general-purpose thinner, and got in the habit of wiping in the direction of the grain to ensure that I was actually removing the sanding dust, not just stirring it around on the surface.

This was a good time to look for residual varnish or lacquer I might have missed, as it shows up well. I reapplied tape to the surrounding surfaces where necessary and let the wood dry at least overnight before proceeding with the refinishing. If a cabin sole has any water damage, this would be the time to consult the varnish supplier about achieving a moisture content suitable for applying varnish.

After the sole was sanded to naked wood, I discovered the builder had applied stain to disguise all the color differences, knots, and patterns in the teak. Suddenly I was looking at *La Vita*'s sole for the first time in its true form. I did not hesitate — there was no way I would cover all that character with stain.

Apply the varnish

Finally, it was time to start coating the sole. I chose Defthane polyurethane varnish because the local

varnish professionals recommended it highly. They found it easy to use and forgiving in its application, but advised me to be sure to thoroughly stir (not shake) the varnish in the container before using it.

"Ease of use" sealed the deal; I bought stirring sticks and was off to the races. Strictly out of personal preference, I chose the semi-gloss finish (Defthane is also available in satin and high-gloss). I wanted some shine but was concerned that a highgloss finish would amplify any imperfections. We all know that compromises sometimes disappoint, but I was very pleased with the results.

Before the first coat of varnish is applied, the sole must be sealed to ensure good adhesion for the build-up and finishing coats. The choice is between thinned-out varnish and a product specifically designed as a sanding sealer. The references I consulted were split on the issue. I chose to go with thinned-out varnish.

Thinned 50/50 with Interlux 333 Brushing Liquid, the Defthane semi-gloss varnish easily soaked into the veneer. Using a 2-inch foam brush, I applied the liquid across the grain in an area of about 2 square feet. Then, without adding more varnish to the brush, I smoothed out the brush marks with long non-overlapping strokes parallel with the grain, just touching the varnish with the tip of the brush (this is called the "tipping stroke").

I repeated this for the rest of the sole by moving another couple of feet down, applying the varnish against the grain and smoothing out the brush marks with tipping strokes that ran with the grain. I worked toward the wet edge with my tipping strokes by laying the brush into an uncoated area and brushing back to the coated area, just

touching the brush to the wet edge. I learned to avoid overbrushing when tipping, as this will increase the likelihood



To coat the floorboards she had taken to the workshop and the large accessible areas of sole inside the boat, Stephanie used a roll-and-tip technique. She began by applying the varnish across the grain with a roller. FRITZ SEEGERS

of brush strokes showing in the dry varnish. This technique requires some practice and I began on the loose floorboards before tackling the strange angles inside the boat.

I applied one coat of thinned-out varnish and let it dry overnight. The next morning, without sanding between coats, I used a tack rag to make sure there was no dirt or hair on the surface and applied a second coat of equally thin varnish. I allowed this second coat to dry thoroughly overnight, after which I lightly sanded it with 400-grit sandpaper, using a sanding block to ensure I applied even pressure.

There are many opinions on the appropriate number of varnish coats for a cabin sole. First, the choice of finish influences this, since getting to a high-gloss finish requires more coats than a satin or semi-gloss finish. Another factor is the type of varnish you choose, as polyurethane-based products provide the same protection with fewer coats than traditional varnish. And the amount of thinner you use affects the rate of build-up: thinner coats require more applications to achieve sufficient thickness.

I settled on 12 coats: two of thinned-out varnish to act as a sanding sealer, five build-up coats, and five finish coats. For the build-up and finish coats, I used the roll-and-tip method to apply the varnish wherever possible as it saved time. This method is similar to the brush-on method. The tipping strokes are made with a brush but the product is applied with a roller.

The amount of thinner to use depends on the varnish you use and the weather. The rule of thumb is to use only as much thinner as necessary to allow

Resources

3M Scotch Performance Masking Tape 233+ Green www.shop3m.com/70006246493.html

Citristrip Safer Paint & Varnish Stripping Gel by W.M. Barr & Co. www.citristrip.com

Corona Brushes Glasskoter R-101F rollers www.coronabrushes.com

Defthane polyurethane varnish www.deftfinishes.com

Interlux Brightside polyurethane paint Interlux 333 brushing liquid www.yachtpaint.com/usa

Minwax wood filler www.minwax.com

ScotchBlue Painter's Tape for Delicate Surfaces www.scotchblue.com

Spectrum Razor Tools ProPrep 1-inch no longer available

the varnish to be applied smoothly. Too much thinner requires extra coats; thinned too little, the varnish shows brush marks and can sag.

I prepared my varnish by thinning it up to 10 percent with Interlux 333 Brushing Liquid in a small plastic tub. Immediately before varnishing, I wiped any errant dust or hair from the sole with a tack rag and poured the varnish into a roller tray with a disposable lining.

I used 3-inch and 7-inch Glasskoter R-101F rollers made by Corona Brushes to roll the varnish onto the sole, but any good-quality roller with a tight nap (½-inch is good) should be fine. Lots of bubbles appear after the varnish is applied across the grain with the roller, but these disappear with the tipping strokes. I tipped the varnish using a 2-inch foam brush, brushing with the grain, working from a dry area to the wet edge as before.

It was especially easy to use this method on the floorboards, rolling varnish over the entire floorboard (across the grain) and then tipping the full length with the grain. Inside the boat, I could not use the roller in some areas and had to use a brush for both application and tipping, but the roll-and-tip method sped up my application time.

Large sections of sole inside the boat presented some challenges. Sometimes the varnish, even when thinned, dried too quickly, leaving brush marks. For the last two finish coats, I divided the large areas of sole into smaller, more easily worked sections using tape.

I used the delicate-surfaces tape for this; I had no desire to pull up my newly applied varnish. I ran the tape down the middle of a holly strip and coated the adjoining sections at separate times. After coating a taped-off area and letting it dry thoroughly, I removed the tape and reapplied it over the coated area, carefully lining up its edge along the varnish line in

the middle of the holly strip. The slight raised line this left where the two applications met disappeared after a few days. This step may not be necessary in a drier cooler environment or on smaller cabin soles.



After applying the varnish to a workable area, Stephanie "tipped" it by brushing it in the direction of the wood grain, working from the dry side toward the wet edge. Some products don't require sanding between each coat, but I chose to take this extra step. I always waited at least 24 hours before sanding. For the five build-up coats, I sanded between each coat with 220-grit paper, using the orbital sander attached to the vacuum. Between the fifth and sixth coats, I sanded moderately heavily with 150-grit paper to remove any grain in the finish, yielding a very smooth surface for the finish coats. I was careful at corners and edges at this point so as not to remove the base layer.

For the finish coats, I switched to a sanding block and wet sanding with wet/dry 400-grit sandpaper between each coat. Wet sanding yields a very smooth surface but adds some time to the project. It's a good idea to wet sand only between the last couple of coats. I wiped the surface with thinner between each of the final coats and was diligent in my cleaning and use of a tack rag prior to recoating. Tack rags are inexpensive; change them often. After every two or three coats, I also removed and replaced the protective tape on the surrounding surfaces. If varnish is allowed to build up on the tape, it will tear or lift when the tape is removed. This step seems like overkill, but there were a couple of areas (such as under the saloon table) where I did not follow this protocol and had a very difficult time removing the tape cleanly from the varnish when the project was over.

Once the final coat has been completed, the varnish will take a period of time to dry before you should walk on it even barefoot. We left the plywood fillers in place and walked on those as much as possible for two weeks after the last coat. Sailors in northern climates or who use a traditional varnish may want to wait up to a month before walking on the sole. This might not be possible for liveaboards. They may have to take an extended vacation away from the boat or make other compromises.

With the total hours expended in refinishing the sole of a Tayana 42 approaching 300, and a cost of almost \$1,500, this is not a project to be taken lightly. But now, two months later, as I pour myself a glass of wine and sit down for dinner, I openly admire *La Vita*'s beautifully refinished cabin sole. I catch myself smiling and thinking back to how much I have learned during this project, and I tip my glass in a silent toast to the old sailor from so many years ago. This time, he would have loved the final product. \varDelta

Stephanie Concelman met her husband, Drew, in 1987, when she owned and lived aboard a Tayana 52 and he owned an Alberg 37. They have lived aboard and sailed together ever since. Both licensed captains, Stephanie and Drew currently sail the Texas coast on their Tayana 42 cutter, La Vita, with their dog, Maya, and look forward to cruising to further destinations after retirement.

Top 10 lessons learned

10 A cabin sole on a larger boat can be refinished in stages. Main cabin sole first, for example, and the aft stateroom and nav station later.

9 Allowing the sole to dry thoroughly between every few coats greatly reduces the time at the end of the project before the varnish can be walked on.

Vacuum and clean the surrounding surfaces and furnishings often, so sanding dust or pet hairs don't drift off them and into wet varnish.

Z Large areas of the sole can be taped off into smaller sections. This makes the varnish application easier and allows problems in a specific area to be fixed without recoating the entire sole.

6 When floorboards are removed, cover the openings with temporary boards to prevent accidents.

5 When masking surrounding varnished surfaces, use tape made for delicate surfaces first, then cover it with more-adhesive thicker tape that holds up well to sanding.

Remove and replace the masking tape every few coats to avoid build-up on the tape.

When hand sanding, avoid injury to fingertips by taping them with green painter's tape.

2 Before beginning the project, determine the thickness of the teak-and-holly veneer to avoid accidently sanding through the teak into the plywood below.

This is absolutely a project that a boatowner can do; don't be afraid, just jump in and get started.

FRITZ SEEGERS

Galley improvisations



ometimes, being realistic about your boat's limitations and embracing them with wholehearted and simple adjustments can reap a host of benefits. We have a short list of modifications that have worked for us.

Better dishpan plan

The galley sink on our boat, a 30-foot Albin Ballad built in 1973, is an optimistic notion at best. Like the sink on many smallish production boats, its diminutive size limits its usefulness to dispensing drinking water, hand washing, brushing teeth, and serving as a general catch-all for loose items while under way.

Full-scale dishwashing for our family of four is out of the question given the limitations of the sink and the surrounding area. We've found that a plastic dishpan, half again as big as our sink, carried into the cockpit works much better. Dirty dishes accumulate there and eventually get washed right out in the open.

If we are tied up at a marina, we use water from a dockside faucet to conserve our limited supply. With luck, it has already been preheated by the sun, something that our onboard water supply never is.

When we are at anchor in relatively pristine surroundings, we wash with salt water and rinse sparingly with fresh water from a 5-gallon Coleman jug stored in our lazarette. Dirty water is discretely drained into the cockpit scuppers and chased with a couple of extra buckets to sluice things down, thus cleaning the boat and the dishes in the same operation.

Doing dishes in the cockpit may raise a few eyebrows on neighboring boats, but it gives us the elbow room and surface area to set up an efficient The trash door on the Allports' Albin Ballad is handy to the galley and its mini sink, at left. Clockwise from top left on the facing page are Tony's permafrost mold, the galley countertop in place, then suspended above the starboard settee next to the stove to provide workspace while the stove is in use, the batten above the starboard berth the countertop rests on, and the trash receptacle in the cockpit locker.

production line that is a stunning achievement in family cooperation in this day and age.

Icebox drain diversion

The dollhouse-sized sink in the galley, now relieved of any serious scullery duty, was nonetheless originally fitted with a saltwater spigot activated by a foot pump in addition to a similar freshwater spigot. We don't have any need now for saltwater in the galley, so I reassigned the plumbing to make improvements on two other fronts.

Any day I can eliminate a hole in the bottom of my boat is a good day. I have removed the saltwater intake seacock and capped the through-hull fitting, reducing our operational through-hull fittings to two, a raw-water intake for the engine and a drain for the galley sink. That's one less thing to worry about.

I connected our icebox drain, that originally ran into the bilge, to the old saltwater foot pump. We can now pump melted ice water into the sink from where it drains overboard. If I am feeling unusually frugal and conscientious, I rinse my hands with it in the process.

No longer is there anything normal about having water in my bilge. And no longer are there slimy gelatinous globules of liquid lettuce lurking beneath my floorboards. As one of my mentors in the field of marine survey is fond of saying, "Nothing good ever came from having water inside your boat."

Ice enhancement

With our icebox runoff beneficially redirected, I turned my attention to making the most of the ice. We are always amazed at the variability of the price of a block



of ice in the Salish Sea of Puget Sound. It can range from \$2 to \$5 a block from one port to the next. Our opinion of each port is tempered by this cold hard fact.

One solution that gives us a leg up at the beginning of each cruise has been to make customized ice blocks molded to perfectly fill the bottom of our icebox. I fashioned a rough plywood box that replicates the bottom 6 inches of our icebox, lined it with plastic, and placed it, filled to within an inch of the rim with water, in our chest freezer at home. The resulting block of ice is like permafrost. It routinely lasts five or six days, whereas the blocks from the store typically last two to three days at best. Extra insulation is also on my to-do list, but this article is about simple changes that spring from reorienting and adapting to existing features of the boat.

Additional counter space

We have about three square feet of countertop in the galley ... as long as we're not cooking. The stove resides under this precious surface, and when we want to use it, the countertop must be removed.

To preserve this work surface, I rigged up a way to hang it from the overhead grabrail with one end secured to the pilot berth bulkhead next to the galley. I cut three inconspicuous slots in the removable countertop and fastened a short rabbeted batten above the back of the starboard settee. With the addition of a nylon cord looped over the overhead grabrail and knotted at each end, the transition is complete.

While this is not quite as good as the original standard-height solid work surface, it restores most of what was otherwise lost. This modification took less than an hour to accomplish. There was minimal impact to the boat and practically no investment.

Trash can storage mod

Trash management is another area where the token galley often falls short. Everyone needs a trash can. It should be large, easy to access, and out of the way.

We have a sliding access panel in the aft galley bulkhead that communicates with the starboard cockpit locker. When we bought the boat, there was no evidence that this had been used as a trash *continued on page 74*









When Bruce acquired *Nikki*, her galley was functional for weekending, below. On the starboard side, at right, he rebuilt the icebox and utilized dead spaces for storage. He even converted a molded box that once housed instruments into a condiment locker, bottom right.



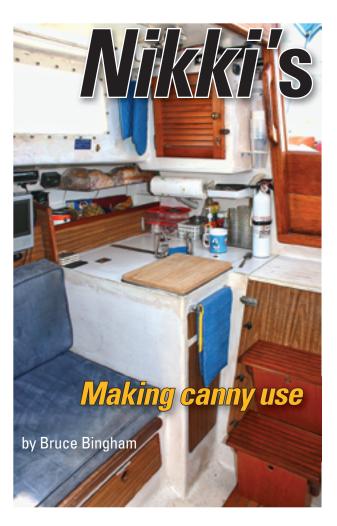
y 37-year-old Cape Dory 28, *Nikki*, has been my home for five years. We swing on a mooring in Boca Ciega Bay near Gulfport on the midwestern coast of Florida. In 24 years (not consecutive) of living aboard boats, I've learned that I always have too much stuff and too little storage space, but I've always dealt with it with discipline and ingenuity.

The Cape Dory 28 was not intended to be a liveaboard nor ocean passagemaker; there was (and still is) very little market for such boats. *Nikki* was designed as a weekender for a couple with two kids . . . and that she did superbly. She also turned out to be an outstanding performer, winning West Florida's Cruising Boat of the Year for 2010 in a 16-race series, including first overall in the prestigious Michelob Cup in the Tampa Bay area. But as a floating home, she was severely lacking in storage space and other amenities.

My work to improve *Nikki*'s galley began immediately after I acquired her. As a retired yacht designer, I was aware that a major failing in stock boats is the poor use, or no use, of upper portions of potential storage spaces. That's much like having a home clothes closet without a top shelf. This was an obvious starting point. Another shortfall is the lack of use of oddly shaped spaces. As these would be extremely costly to improve on the production line, their use would result in pricing increases. *Nikki* suffered from both maladies.

The port cavern

Beneath the countertop stove, her port galley counter enclosed a huge storage space 20 inches wide by 32 inches long by 30 inches high. A very small door facing inboard made it impossible to reach fully into the compartment. By some careful surgery with a right-angle cutoff tool, I was able to almost double the size of the door. I had

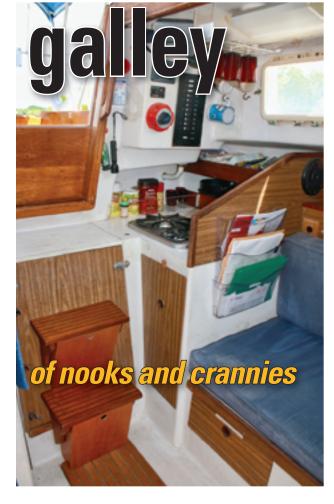


some matching material to fabricate a new door, and in less than a day I had full access to an otherwise largely useless cavern. I was actually able to crawl fully inside the space to sand and paint. The next job was to design and construct shelving that virtually doubled the utility of this precious asset.

New stove, counters, and bins

Nikki's ancient, inefficient, and rusty original stove was an alcohol two-burner, countertop style. I replaced it with a new stainless-steel





Bruce's improvements to the port side of the galley, above, included gaining access to the "cavern" under the counter, below left, fitting a new LPG stove, upper right below, and making polycarbonate bins for utensils and other odds and ends, lower right below. LPG double-burner stove purchased from an online RV accessories dealer for less than \$200. This required reshaping the countertop cutout to receive the stove and installing the LPG tank and its plumbing.

While I was at it, I realized there was a lot of unused upper interior counter space. I designed and installed several countertop bins with finger-lift covers for cooking utensils and silverware. Since the builder had made no provision for galley drawers, the new bins more than made up for this lack of space. I based the new bins on boxes made of thin, but very strong, polycarbonate plastic (Lexan is the best-known brand) suspended from beneath the countertop, each with covers to match the Formica counter surface. To avoid complicated, spacesacrificing construction, I made the boxes by bending the polycarbonate with a special heat strip. These bins have vastly changed my life aboard.

I enjoy working with sheet plastics, so I also made several small shelves and brackets to occupy oddly shaped spaces that were left totally unused. One bracket accommodates the signal horn that is now conveniently accessible from the helm. Another bracket holds plastic and paper cups just over the galley sink. Above that is a small polycarbonate shelf to hold an alarm clock, racing timer, and another small timer that awakens me when I have fallen asleep while watching television. Another little shelf is home to my collection of sun and reading glasses. I replaced a gaudy and space-gobbling teak paper-towel holder with a compact and nicer-looking clear-acrylic one.

A major improvement came from an unexpected place: the interior molded-fiberglass enclosure for the backs of no-longer-used electronic sailing instruments. I patched the holes in the aft side of the cabin







Bruce laid new Formica on his countertop, above. He fitted a shelf in the front to hold pots and pans, at right, and a space-saving towel rack on the face, at far right.

trunk, lined the interior of the space with mahogany, and installed a louvered teak door. The space is now a large and attractive food and condiment cabinet.

lcebox

Nikki's original icebox was pathetically inefficient with a melt rate of almost one pound of cube ice per hour. In a grueling month of messy and complicated work, I added a lot of closed-cell polyurethane insulation (plank and two-part poured) and a new Formica-lined interior. This increased the box's efficiency by a factor of five. In some places, the insulation thickness now measures 9 inches and the average thickness overall is 5 inches. I gained the first 2 inches by reducing the box interior by installing plank "space foam" that's available at large home-improvement chain stores. It's the same stuff used to insulate the International Space Station. Even though adding insulation resulted in a loss of icebox volume, it more than makes up for it with the need for less ice. I replaced the original solid-teak box lid (teak is not an insulator) with a highly efficient closed-cell space-foam lid, covered it with fiberglass, and finished the countertop to match. In addition, I installed a drain loop to prevent cold air from escaping through the icebox water drain.

Nikki now has a 12-volt condenser/evaporatortype refrigeration system capable of making ice and freezing food, something I only rarely do. I would not have considered installing a refrigerator without first improving the efficiency of the box. I also fitted



the new icebox with polycarbonate divisions and a removable food tray.

During the icebox rebuilding project, I was able to fashion a very handy, shelved counter cabinet to store pans, coffee makers, and a Thermos jug. The cabinet is also home to the depth-sounder transducer.

Retention fiddles

Two relatively unused countertop spaces on each side of the galley became valuable and accessible simply by installing ¹/4-inch clear-polycarbonate fiddles to prevent dish detergent, hand soap, small storage containers, and my instant coffee from moving around when the boat is under way. I then added another longitudinal polycarb fiddle extension to a fixed teak fiddle to prevent my dishes from "jumping the fence" when we're sailing to windward in heavy weather. This extension can be put in place and removed when not needed in only a second.

When *Nikki* is sailing to weather or dealing with big seas, I keep pots and pans in place on the stove by using small C-clamps as adjustable fiddles.

Companionway steps

The companionway steps provided more unused spaces. I hate hanging garbage bags in my boat, so I fabricated a teak-faced plywood trash can that fits perfectly under the lower step without interfering with foot room. Under the upper step, I installed a retractable teak bin as the storage space for the



On both sides of the galley, Bruce fenced off counter space to hold items he uses often, by the stove, at left, and near the sink, center. A removable fiddle extension, at right, keeps utensils from jumping out when the boat is sailing hard.

plastic shopping bags I use for transporting garbage. Small strips of stick-on Velcro keep the bin and trash cans securely in place.

Further storage

When I bought *Nikki* she was like an uncut gem. Her previous owners had made little attempt to improve anything. There was no means for storing cups and mugs. I solved that by installing brass hooks over the port galley counter at a cost of about \$2. I have added custom-made clear-acrylic glass holders to the cabin overhead for storing the French ruby glass tumblers and wine glasses I've been sailing with for more than three decades.

On the starboard side, over the icebox, I made and installed a clear polycarbonate drop shelf, where I keep breakfast cereal, cookies and munchies, rolls, and other bread products. It contains food that I access every day in more than 1½ cubic feet of otherwise unusable space.

I bought a bamboo cutting board. It doesn't warp like the more common edge-glued hardwood boards. This cutting board adds work surface by fitting securely over the galley sink. It also serves as a cockpit jump seat that allows me to turn my legs and torso forward when I'm at the tiller, rather than twisting my body for long periods.

I fastened to the starboard inboard face of the galley a very small but tidy dishtowel rack, homemade of ¼-inch polycarbonate scrap. Any purchased towel rack would have been more than twice as large.

Sink and cooking improvements

Finally, I tapped into the freshwater piping and installed a countertop dish sprayer in addition to the galley water faucet. Then I installed a small tap for dispensing ice water produced in the refrigerated icebox. This eliminated the need to buy and store bottled water that took up valuable space in the icebox. It also ended the practice of keeping and refilling empty water bottles.

When laying down the new Formica on the galley countertops, I had to remove the original teak fiddles. Their replacements will be removable so I'll gain some working surface when not under way.

Nikki has a small 1,000-watt microwave oven suspended under the port sidedeck in the saloon.



The trash container and liners occupy spaces under the companionway steps, at left. Hooks and acrylic racks hold mugs and glasses, at right.

My 12 VDC to120 VAC inverter is able to run the microwave and my large hand tools, but I nevertheless run the engine for the short periods when the microwave is in use to support the battery load. I also have a small crockpot that plugs into *Nikki*'s AC system and is powered by the inverter or dockside connection.

A dollhouse

When planning your own galley improvements, imagine that your boat is a child's miniature house like those you've seen in backyards. You don't necessarily have to eliminate interior features, but scaling down the size of furnishings is very practical.

Production-boat manufacturers were usually forced by the marketplace to deliver the bare necessities in order to keep their prices competitive. But you don't have to leave it at that. Your own time and ingenuity will be well spent when improving your galley's utility. Each improvement will add to the convenience and enjoyment of your days aboard. *A*

Bruce Bingham began sailing before he could walk. As well as being a prolific sailing writer, illustrator, and photographer, he has designed more than 40 boats, the Flicka and the Fantasia among them. Although no longer in print, his book, Sailor's Sketchbook, has been selling for 30 years. Bruce lives aboard his Cape Dory 28, Nikki, moored near Gulfport, Florida.



In the unused space above the galley storage, Bruce fitted a fiddled shelf, at left, that hinges down to give access to its contents, center. His cutting board fits over the galley sink and doubles as a seat that lets him face forward while steering, at right

Rigging matters

Where there is no rigger

Replacing standing rigging, step by step

by Leslie Linkkila and Philip DiNuovo

hen our headstay almost parted in Panama, where there is no professional rigging service, we had to replace it ourselves. Since the standing rigging on our Mason 33, *Carina*, had been installed with Sta-Lok mechanical terminals, we used the same terminals on our new headstay. We found

them easy to assemble using common hand tools, and that gave us the confidence to go ahead later and replace all the standing rigging, which we did while at anchor in Vava'u, Tonga. We hope our experience will be helpful to others who might wish or need to do the same.

One stay at a time

Plan on replacing only one wire rope at a time and make sure that throughout the rerigging procedure your mast is well braced with spare halyards.

When replacing an upper shroud, ease the tension on the port and starboard

shrouds uniformly to avoid bending the mast. Although the mast should remain standing securely with just the lower shrouds, we always used halyards as guy lines for added security. Lubricate turnbuckle threads to avoid galling or other damage. We used Tri-Flow, which contains P.T.F.E. and is available as a liquid, since it leaves little residue that can later collect dirt.

Loosen the turnbuckle on the stay that is to be replaced until the stay is loose, but do not disconnect it completely. This will stabilize the bottom of the stay while you disconnect the top and lower the stay.

At the top of the stay, before removing

the cotter and clevis pins, tie a line securely to the wire below the terminal using a rolling hitch (see Part One, in the July issue). Then slowly lower the stay to the deck.

At deck level, tie a line between the stay and the boat before detaching the lower end of the stay. This will prevent the stay from "snaking" over the side and into the deep blue while you're manipulating it. If you're at a dock, move the stay to the dock and lay it flat. If at anchor, bring both ends of the stay to your work area; we used our cockpit.

Removing an installed terminal

Our standing rigging was assembled with Sta-Lok terminals. The steps that follow will be similar in principle with other brands of mechanical terminals.

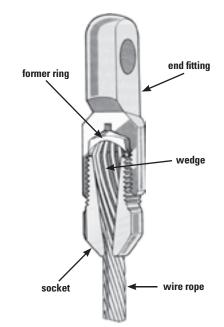
Unscrew the female portion of the terminal by holding the male portion with a box wrench and using a large



The first step in disassembling a terminal is to unscrew the two parts.



Inspect the female thread for signs of rust and traces of thread sealant.



This cutaway diagram shows the component parts of a Sta-Lok terminal



Clean the threads inside the fitting. A strand of wire works well for this.



In this article, the second of two, Leslie Linkkila and Philip DiNuovo describe the step-by-step process by which to renew stays and shrouds while the mast is in the boat. In the July issue, they described how they removed and replaced their headstay while at anchor in Panama.



If sealant was used in assembling the terminal, soften it with a little heat.



Select a long socket that will just fit over the end of the terminal.



The socket should rest up against the hex end of the terminal socket.



Tap the end of the socket with a hammer to loosen it from the wedge.



The terminal socket slides up the wire revealing the sealant inside.

screwdriver (for an eye) or second box wrench (for a stud).

Inside the female half of the Sta-Lok is a "former," a dome-shaped part that can be re-used if undamaged. The former may be difficult or impossible to remove from a used fitting, and you might damage it in attempting to remove it, so be sure to have spares.

If the terminal was assembled using silicone sealant and a thread-locking compound, clean the fitting of the residual material. A single strand of 1 x 19 wire works well for removing residual sealant from the threads and former. Periodic spritzing with WD-40 and wiping by twisting a rag into the threads also helps to remove old thread compound and sealant.

Disassembing the socket (male section) takes a little bit more effort, but only if the terminal was assembled with sealant. To avoid damage to the threads during disassembly, we used a long socket from our socket-wrench set. The socket should have a diameter smaller than the terminal cap but just large enough to pass freely over the threads.

Secure the wire in a vise or clamp it with locking pliers, such as Vise-Grip. Next, heat the fitting with a heat gun or propane torch just long enough to soften the sealant (approximately 1 minute with a heat gun on low setting). Slip the socket over the threads and use a hammer to dislodge the fitting from the wire.

We found no rust inside our disassembled 11-year-old fittings, only silicone sealant and red thread-locking compound.

Once you have loosened the male terminal sections at both ends of the wire, and before cutting the old wire, measure for the new wire against the old wire. This is the time to consider whether the new wire should be a trifle longer or shorter than the old wire.

To measure accurately, tape the old and new wires together every few feet along their lengths to prevent the two wires from "walking." Bracket, with duct tape, the location on the new wire where it will be cut, and carefully cut the end as square as possible.

This can be done with a cable cutter, hacksaw (tape either side of the cut and secure the wire in a vise), or a high-speed rotary tool such as a Dremel.

Now remove the male Sta-Lok terminal section from the old wire.

Installing a terminal

Before reassembling the terminal on the new wire, clean the male and female parts thoroughly with WD-40 or a similar solvent and a synthetic scouring pad, such as Scotch-Brite.

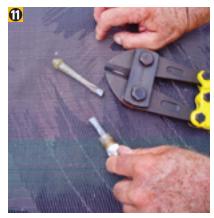
Ensure the threads are clean and that you can thread the terminal easily by hand. Inspect each piece carefully for corrosion or cracks.



Tape the old wire, with the wedge still in place, to the new wire.



At the other end, wrap tape around the new wire and mark for the cut.



To remove the terminal socket from the old stay, cut the wire.



Slide the terminal socket off the cut end of the old wire.

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Rigging matters



Clean both threaded parts of the terminal before reusing them.



Slip the socket over the end of the new wire and unlay the strands.



Slide the wedge over the wire core and carefully re-lay the strands.



In this poor assembly, a strand is lodged in the slit in the wedge.



Properly assembled, the strands lie uniformly around the wedge.

Inspect the cut end of the new wire. The cut should be reasonably clean and none of the individual wire strands should vary in length more than 1 mm. Use a wire snipper to trim individual wires if necessary.

Slide the male terminal piece (socket) over the new wire (an important step). Using a small slotted screwdriver, begin to uniformly unlay the wire approximately 2 to 4 inches from the end. If you want, you can apply a wrap of thread or tape a few inches from the end of the wire to prevent the wire from unlaying beyond this point and to prevent the socket from sliding down the wire.

Slide the new wedge over the seven core wires until 2 to 4 mm (about ½ inch) of wire extends beyond the wedge (this distance depends on the wire diameter and is specified in the Sta-Lok instructions). Do not reuse old wedges unless no other option exists.

Re-lay the wire. Push the male terminal fitting up the wire and rotate it with the lay of the wire to gently re-lay individual strands.

Take care that the wedge does not slide out of position (off the end of the wire), that strands are uniformly spaced around the wedge, and that no individual strand is lodged in the wedge slot. If the pre-assembly is poor, pull back the male terminal piece and use a small slotted screwdriver to gently push the wedge back into position and realign individual strands. A good tip for Sta-Lok fittings: hold the male terminal piece snugly against the wedge and rotate the male terminal in the direction of the lay of the wire rope as you align the individual strands. This helps to keep individual strands out of the wedge slot.

Once you have the wedge, wire strands, and male component assembled satisfactorily, thread the female terminal section on until you feel some resistance. Some riggers recommend using a thread-locking compound at this point to lubricate the threads and to avoid galling.

Using a vise and box wrench, or two box wrenches, slowly tighten the terminal, but just hand tight. You will hear a disconcerting "scritching" sound as the wires bend and lay with the former inside the terminal. Immediately disassemble the terminal fitting to check the quality of the assembly; the wire strands should be bent and lie neatly and uniformly around the end of the wedge.

Complete the assembly by applying a "grape-sized" dollop of sealant to the female terminal section. If you didn't do this during your test assembly, now's the time to apply Loctite or another thread-locking compound to the threads of the male terminal section.

Reassemble the terminal, tightening to hand tight with box wrenches. *Do not overtighten!*



Thread the female terminal end onto the socket and draw it up hand tight.



Unscrew the terminal end and examine the assembly for uniformity.



Make the final assembly with sealant and thread-locking compound.



The corroded wedge (left) indicates water ingress into a terminal.

To seal or not to seal?

There are arguments for and against applying sealant to mechanical terminals. Hi-Mod discourages the use of a sealant while Norseman endorses its use but advises against silicone sealants. Sta-Lok indicates sealant is not needed but, if used, it should be a polysulfide. Blue Wave recommends Sikaflex 221. Upon replacing our failing 11-year-old wire rope, every terminal we disassembled revealed a wedge that looked nearly perfect. These terminals had been sealed by our rigger with marine silicone sealant.

Alternative products

Norseman (Navtec) —

The Norseman system design has changed little with time. The company was purchased by Navtec, which is part of Lewmar. Lately, availability of Norseman fittings seems to be an

Resources

References

The Complete Rigger's Apprentice by Brion Toss; International Marine, 1998

Understanding Rigs and Rigging by Richard Henderson; International Marine, 1991

Rigging Services Guidelines published by Navtec Rigging Solutions

Inspection of Sail Rigging and Masts on Inspected Small Passenger Vessels, USCG Inspection Note #13, October 2008

"New Swageless Fitting Shows Promise" by Bill Sandifer; *Good Old Boat*, March 2000 issue with U.S. rigging suppliers. In our opinion, the industrial design of the Norseman is less refined and its finish compares poorly to the machining and brilliant polish of the other brands.

The wedge is similar in design to that in the Sta-Lok but a bit shorter and



Norseman terminals have similar components to Sta-Lok products but the threaded parts are reversed.

Manufacturers Blue Wave www.bluewave.dk

Hi-Mod www.petersen-stainless.co.uk

Norseman www.navtec.net

Quick Attach www.suncorstainless.com

Sta-Lok www.stalok.com

Tri-Flow Superior Lubricant www.triflowlubricants.com



Gemini Marine Products www.geminiproducts.net

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of slightly larger diameter. The wedge is inserted significantly deeper into the unlaid wire — 1.5 times the wire rope diameter — than with other designs. The terminal consists of three components: the body (female thread); the cone; and the end fitting (male thread) with its integral former machined to compress the end of the wire when the terminal is assembled.

Hi-Mod (Petersen Stainless) —

The Hi-Mod system is the latest introduction into the market and has little history yet, though its manufacturer has a reputation for high-quality products and these cleverly designed terminals are rapidly gaining in popularity.

The industrial design and finish quality seems superior to the Norseman, though the form is similar. The Hi-Mod design is differentiated by its aluminum-bronze crown ring that sits on the wedge. This ring keeps the individual wire strands evenly spaced around the wedge and prevents the outer wire strands from bending, making all system



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Rigging matters

components reusable. The crown and the end fitting also help to ensure a flawless assembly by holding the position of the wedge to a precise depth.

Blue Wave (Blue Wave A/S) — The design of the terminal body components of the Blue Wave are similar to those of the Norseman and Hi-Mod, though their terminology is slightly different. The key differentiating design element is a jaw (called by others a wedge or cone) that slides over and compresses onto the full diameter of the wire rope, making it universal for a given wire diameter



Hi-Mod terminals use a "crown ring," far left. An assembled Hi-Mod alongside a swaged fitting, at left. In the Quick Attach (and the similar Blue Wave) terminals, above, the wedge fits over the entire wire. irrespective of wire construction (7 x 7, 7 x 19, 1 x 19, or Dyform). In addition, the system includes a compression ring that slides onto the bitter end of the wire and a locknut on the head that secures the assembled terminal. The design and construction are of high quality but the product's popularity (at least in the U.S.) seems limited.

Quick Attach (Suncor Stainless) —

These terminals are of the same design as the Blue Wave terminals, although the installation instructions contain minor variations. They appear to be marketed primarily for lifeline applications by Suncor Stainless and for railings by Atlantis Rail.

Design note

Sta-Lok terminals have a design feature that distinguishes them from the other products listed above. In Sta-Lok fittings, the wedge is compressed inside the male-threaded socket and the female-threaded former. This doubles the wall thickness securing the wedge.



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Proactive with rigging

When we left our home port on our open-ended cruise, we didn't give much thought to replacing our standing rigging. Our rig was new when we launched *Carina*, we had sought advice from professional riggers just before departure, and we cleaned and inspected our rigging regularly. Though we were proficient at most maintenance tasks aboard *Carina*, we had not given enough thought to the possibility we would need to become do-it-yourself riggers.

Our experience taught us valuable lessons and we feel that others can benefit from them:

- Know your rig and how to service and install every component.
- Clean and inspect rigging at least annually but preferably more frequently. Inspect your rig before departing on any ocean passage.
- End-for-end stays and shrouds when they have reached approximately half their expected life.
- Don't neglect to inspect chainplates, as cracks are usually well hidden.
- Be comfortable in your bosun's chair or climbing harness. Work out safety procedures with your crew and always use a safety line.
- When cruising, carry spare wire rope in all sizes represented in your rig, of a length and diameter suitable for replacing any stay.
- When cruising aboard a vessel outfitted with swaged terminals, carry enough mechanical fittings and suitable extensions or long studs to permit any swage to be replaced using the existing wire. For rigs already fitted with mechanical terminals, carry at least one representation of each fitting and terminal in the rig and possibly a connector that could be used to repair a section of wire in situ.
- Replace any rigging component wire, terminal or chainplate — that shows any sign of degradation.

After learning by necessity while replacing first one part, and then all, of *Carina*'s rig without the help of professionals, we have become proponents of mechanical (compression or swageless) fittings. These systems are not difficult to master and working with them is certainly within the capabilities of most sailors. For offshore cruising, using them seems imperative, in case a rigging failure is discovered hundreds or thousands of miles from professional rigging services.

Philip DiNuovo and Leslie Linkkila came to cruising and boat ownership as adults and quickly developed a passion for small-boat travel. In 2003, they quit their professional jobs and left the Pacific Northwest behind. Now in the South Pacific, far from marine professionals, Philip and Leslie have had to learn to service nearly every system aboard Carina, their Mason 33.

Assembling a Sta-Lok terminal STEP 1

Slide the socket component over the wire. TIP: Wind tape around the wire approximately 12 inches from the end. This will prevent the socket from sliding down the wire.

STEP 2 Unravel the outer strands 2 to 3 inches to (a) expose the central core of the wire.

TIP: Use a screwdriver to pry initial strands out of position.



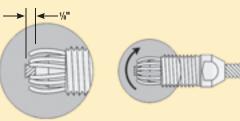
STEP 3 Slide the wedge component over the core.



STEP 4 Reposition the outer strands.

Turn the outer strands around the wedge, clockwise or counterclockwise according to the lay of the wire. Ensure approximately ½ inch of the core protrudes from the end of the wedge. Take care to ensure that a strand does not slip into the slit in the wedge.

TIP: While repositioning the outer strands, push the socket toward the end of the wire. This will help control them. When the wire strands are in position, push the socket firmly down to hold them in place.



STEP 5 Final assembly Place the former cup in the bottom of the end fitting. Screw the socket assembly into the end fitting and tighten it with wrenches. The assembly is now complete. TIP: Undue force is not necessary. Fitting instructions are supplied with each terminal.

Ground tackle

Anchor kellet: take 1

Taking comfort in a little

David uses an inexpensive plastic-coated mushroom anchor as a kellet, this page, and attaches it to his anchor rode (gold and white braid) with a large shackle, bottom of facing page. The kellet's control line passes over the same roller as the rode, far right on facing page.

added weight

by David VanDenburgh

hen sailors get together and talk boats, the topic invariably shifts to anchoring. What follows is a steady stream of stories about lousy anchorages, types of tackle, techniques, close calls, chain versus nylon, and so on.

Sailors live with the nagging fear that their best plans might not be good enough or, worse, will be undermined by someone else without the right gear or knowhow — or either of them. Too many times we have arrived early at an anchorage, sought out a secluded and secure spot, and dug in *Ariel's* anchor only to have some Johnny-come-lately zip into the harbor (often at hull speed) and drop his hook and a pile of rode on top of it, without bothering to consider scope, swing radius, or backing on the anchor.

In an attempt to do our part as responsible sailors, we experimented with a new technique during our month-long summer cruise of 2010. The technique, well-known in cruising circles, is an easy way to gain better holding and decrease the swing radius (to a point) without using an all-chain rode or a heavier anchor. The secret is a kellet, or sentinel. Whatever you want to call it, it's a heavy hunk of something — chain, lead, or steel — that rides down the rode controlled by its own messenger line.

Kellet math

The theory is that the kellet increases the catenary, or curve, of the rode. This decreases the upward pull on the anchor and increases the lateral pull, providing better holding. The effect is the same as if you increased the scope. The catenary effect is more pronounced in a heavy chain rode than a rope rode, which is why many sailors prefer chain (in addition to its abrasion resistance). The added strain on the back is also more evident with all-chain rode, especially if you don't have a windlass. The kellet mimics the characteristics of an all-chain rode but without requiring you to heave three times as much weight aboard. The handy messenger line allows quick retrieval of just the kellet. Once it's aboard, you then haul in the rode and anchor.

> There are several purpose-built kellets on the market. One is the Anchor Buddy, which is made in 20- and 30-pound weights and sells for \$280 to \$350. I have no experience with the system, but it appears to be well designed. Preferring a cheaper alternative, we picked up a 20-pound plastic-coated mushroom anchor from a local marine store for less

than \$20. With a couple of shackles and a length of line we had on board, we were ready to go.

Easy to use

Adding the kellet to your anchoring system doesn't require you to modify your standard anchoring technique, nor does it require any further specialized (or expensive) equipment. Simply anchor as usual, shackle the kellet to the rode, let it slide down the rode until it's halfway to the anchor, and cleat its retrieval line on deck.

A variation involves sliding the kellet down the rode only until it rests on the bottom, rather than sending it halfway to the anchor. In moderate conditions, this approach keeps the boat sitting over the kellet, further reducing swing radius. Once the wind picks up, however, the boat will stretch the rode and swing within her full radius. The kellet will dampen swinging and bouncing when wind and waves increase.

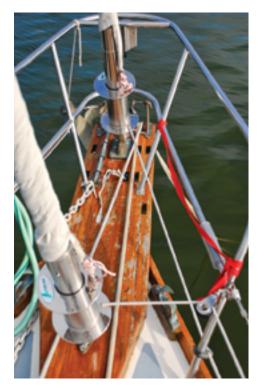
During our month-long summer cruise in 2010, we used the kellet every time we anchored. We also tried it in different configurations: located halfway along the rode; located 15 feet from the anchor; resting on the bottom at a distance roughly equal to the depth. We found that the most difficult configuration to handle was when the kellet was placed 15 feet from the anchor, because this required hauling up that much chain, the 20-pound kellet, and the 44-pound Bruce anchor together.

Although we've never had issues with the Bruce dragging, we certainly slept more soundly knowing that any movement would be more likely to dig the anchor in deeper than it might otherwise do without the addition of the kellet. It was a small price for a lot of peace of mind. \varDelta

David VanDenburgh started sailing with his parents at the age of three and has been afloat ever since. He's now introducing his young sons, Jakob and Joshua, to the world of sailing. A high school English teacher, he maintains and sails Ariel, his family's Cape Dory 36, on Lake Michigan.

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Ground tackle



nchoring is a lot like sailing: 95 percent relaxing and fun and 5 percent hassle, if not outright terror. At the end of the summer, the pleasant anchorages may blur together, but the nightmare anchorages never fade entirely away.

We've had our share of anchoring problems on *Catamount*, our Caliber 38. We carry a big anchor (44-pound Bruce) and all-chain rode (120 feet of $\frac{5}{16}$ -inch chain), but few things make us feel more secure than when we add our 16-pound kellet (or sentinel) to the ground tackle.

Forget about vectors and catenary curves. Here's all you need to know about a kellet: 16 pounds of lead in one spot is about the same weight as 20 feet of chain. When our chain starts to lift in strong winds, the first thing to absorb energy is the weight of the kellet.

We made our kellet ourselves, as the few commercial versions seemed expensive and awkward. We drilled a hole in the side of a Maxwell House coffee can (this seemed fitting since we have a Maxwell windlass) and inserted an eyebolt with the threaded end spanning the width of the can. To prevent it from slipping out, we added several washers and nuts to the eyebolt. A friend who had given up duck hunting donated a bag of old lead shot. Another friend with a small foundry (don't try this at home) melted the lead shot and poured it into the can, enveloping the sideways eyebolt. He then inserted another upright eyebolt in the pool of molten lead. Five minutes later, he peeled off the scorched can and the kellet was complete. Total cost: \$5 and a few beers shared with the foundry owner.

A sinker with hook and line

To deploy our kellet, we attach a large carabiner to the top eyebolt and a 40-foot line to the eyebolt on the side. We clip the carabiner hook over our chain and let it slide down the length of the chain while checking its depth with the attached line. Generally, we let out enough line to equal the depth of water we've anchored in plus 6 or 7 feet. We can do this as soon as we drop the anchor, or add it later.

It can be hard to slip a kellet down a taut rope rode, as there is too much friction from the line. If you need to add the kellet to an already deployed rope rode, you might have to move the boat forward and jostle the kellet down the slackened vertical rode to get sufficient depth. You could also attach the kellet directly to the junction of chain and rope when the anchor is first deployed. No matter how far down the rode you position it, any kellet is better than none.

We use our kellet in three situations. The first of these is when we want to reduce our swinging radius at anchor. Say we're in 15 feet of water and would ordinarily deploy 60 feet of chain for the wind and sea conditions. When the wind pipes up we may want to Fred took a bag of birdshot and a coffee can to his friendly neighborhood foundry and came home with his kellet, facing page. The kellet's retrieval line is attached to the eyebolt on the side, at right, and a large carabiner clips into the top eyebolt. The carabiner slides easily up and down a chain rode but needs some coaxing on a taut rope rode.

put out 20 more feet of chain, but if we increase our swinging room we'll be too close to the boat on our left or the shore on our right. Instead, we put down the kellet. The concentrated weight will reduce the amplitude of our swing and the kellet will drag across the bottom, slowing the rate of swing as well.

The second situation is when we need more scope. Say we're anchored in 30 feet of water and nearing the end of our chain, but we don't think we need to deploy our attached ⁵/₈-inch nylon rode. We will slide the kellet down first and see if that keeps us comfortable.

In the third situation, we'll use the kellet to dampen the rocking-horse motion of our bow in a heavy surge.

It should be noted that the kellet can be a problem in some situations. If the kellet encounters a log and gets caught, it can be more problematic than if chain or rope slides over the log. Sometimes a harmonic can develop between the kellet bouncing up and down and our bow following suit. In that case, we just slide the kellet up or down a bit until the two motions cancel each other out. Also, if Catamount makes a few 360s at anchor, the kellet retrieval line will wrap around our chain. When that happens, we have to retrieve it with the anchor chain, rather than independently prior to raising the anchor.

These complications aside, you will find a kellet to be one of the most useful components of your anchoring system whether you make your own or purchase one. \varDelta

Fred Bagley and his wife, Jennifer, live in Vermont but sail the upper Great Lakes out of Penetanguishene, Ontario, in southern Georgian Bay. They primarily cruise Georgian Bay, the North Channel, and Lake Superior on their Caliber 38, Catamount.





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Cruising memories



A captain of fantasy puts to sea at last

by Roy Vestrich

n the summer of 2007, I would not have been able to tell you the difference between a bowline and a reef knot. Flash forward one year and I had tied my share of both knots while sailing about 1,800 miles in a 20-foot auxiliary inboard from Florida to my home port, about 50 miles shy of the Canadian border on Lake Champlain in Vermont.

Along the passage, I experienced my share of issues: fresh gales and hailstorms, seas that wanted to swallow the bow, groundings, dragging anchors, fuel leaks, engine failures, electrical problems, swimming sails, and even a galley fire. I found myself approaching a late-night anchoring routine when the transmission cable unexpectedly snapped and my boat throttled forward, edging dangerously close to a rocky shore and other anchored cruisers. I spent a few anxious moments one hazy afternoon frantically removing my autopilot (it was the first time I employed it) to avoid being crushed by the bow of a freighter that had suddenly turned hard to starboard and was blasting its horn in a Delaware Bay shipping channel.

But if you asked me then or now, I would do it all again in a heartbeat ... not just for those rare crossings of large bays under full main and jib at a steady 6 knots, nor for those profound sunsets or the soft sway of marshes at dawn, nor for those canals and inlets brimming with life ... but rather for all the little and no-so-little problems as well.

A lifelong dream

Since I was a boy, I had dreamed of owning a sailboat, of setting off across the oceans of the world, of palm-fringed lagoons, and of leisurely nights drinking rum with expatriate poets and girls lifted from Gauguin oils. For years, I satisfied my water passions with canoes, sea kayaks, and camping gear. Still, I knew that not one of the various kayaks I had paddled over two decades, however seaworthy, could get me to those distant shores without an accompanying ticket on an airplane or an ocean liner.

For the better part of five years, I devoured books about cruising boats, about living aboard, about surviving storms and pirates, and about the peculiarities of dealing with customs officials and harbormasters. I surfed the Internet and pored over dozens of magazines filled with information about sailing and sailboats, reading reviews and articles advising first this and then that.

The more I read, the more contradictions I encountered. Every type of rig, keel, engine, electronic device, paint, and polish ever invented had its advocates and detractors, often in equal number and with equally convincing arguments. It was enough to make a dreamer throw his hands up and look for a cozy cabin by a mountain stream.

While living in Vermont, I had already built that cozy cabin in the woods — I am sitting in it right now glancing at a river

66 Although I did not discount other small cruising sailboats, the Flicka became a passion. 99

swollen with rain as I write this article — but something about sailing, about coastal inlets and open horizons kept calling me. Among all the lines I read, one phrase had rooted deeply in my mind: "Go small, go simple, go now."

Like many other captains of fantasy, I went to a lot of boat shows. In Boston, New York, Maine, and Annapolis I drooled over craft I would never be able to afford on a public college professor's pay. The reality is that my job affords months of unstructured time per year — far more than most American workers — but between a Civil War era house (read: constant repairs), kids in college, an aging parent, and aging cars, that lovely Gozzard, classic Hinckley, or fine Morris would always be one lottery ticket away. My boat would have to be small and simple, and affordable.

The philosophy of small

It was not just price and the lower long-term upkeep costs that attracted me to pocket cruisers, there was also an aesthetic and philosophical aspect. In my fantasy, a cruising sailboat would be the modern floating equivalent of Thoreau's cabin on Walden Pond, not a fashionably overdressed condominium on pontoons. It would be a place to contemplate the world by wind speed and current flow, a place where my imagination could take flight by the glow of an oil lamp while I enjoyed the comforts of an uncomplicated berth. And it would be a place where my body would age by growing stronger and more agile with the tasks of tending tiller, sail, and anchor.

The more I read, the more I surfed the Internet, and the more I went to boat shows and drove around boatyards, the more convinced I was about small, simple, and now ... especially the "now."

Fortunately, my spouse, Dawn, shared much of my enthusiasm for this venture. She had already spent several months traveling around the world teaching for Semester at Sea, and she yearned for more adventures. Much

of our pillow-talk revolved around selling the house, buying a true liveaboard cruiser after the kids finish college, taking early retirement, and setting off for — well — wherever we so desire.

As good as this plan was on paper, there was a problem: neither of us knew how to sail. Well, I had been *on* sailboats, my father's (bought when I was already an adult living several states away) and a few times as crew (read: passenger) with friends, but I had never even raised a sail on my own. It was all just talk; good talk, but fantasy talk nontheless. I felt a little like a boy in high school boasting in the locker room with the voice of false experience.

Since we are both in our 50s and have long hoped to set off while we are still young enough to handle the day-to-day tasks and problems of

After falling in love with and buying his first sailboat, facing page, Roy, at right, had to learn how to sail so he could bring her from Florida to his home in Vermont. cruising, it was time to get a start on this dream. We assessed our finances to see what we could change in our lifestyle in order to afford a good seaworthy pocket cruiser and began our real search for a boat during the summer of 2007.

Drawn to the Flicka

A number of years earlier, I had read an article about a boat purchased by folk singer Burl Ives. He had sold his larger boat and purchased a little Pacific Seacraft Flicka. The boat is only 20 feet long, but people had crossed oceans in these craft and a number of people even lived aboard for long periods of time. I had fallen for the boat when I first read about it and saw the pictures. The research I did on the Internet convinced me this was the boat of my dreams. Granted, I'd never actually been aboard one.

Although I did not discount other small cruising sailboats, the Flicka became a passion. I knew this was a cult boat and priced well above most other boats of its size, class, and age, but that did not give me pause. I watched the Flicka website religiously for boats coming on the market, occasionally communicating with the sellers via email.

Attracted by a price that seemed below the market price, I drove to Maine and finally stepped aboard my first Flicka at her harbor mooring in early fall 2007. Though this boat was not in the best of condition — it would need substantial work, including major engine work — Dawn and I agreed that the Flicka design exceeded our expectations and felt "right." We spent the next few months looking at Flickas, some of which were priced well above our planned budget. We convinced ourselves that we could afford more, especially if we waited another year or two to buy one.

There's an old saying that good things come to people who wait, but sometimes not waiting can be a good thing. In November 2007, a Flicka came on the market at a price



Cruising memories

within our range. The owner — a professional delivery skipper — had recently restored the boat and was sailing it from Maine to Florida, so we assumed it was seaworthy. Personal circumstances had forced him to price the boat low for a quick sale. By December, the boat was docked just a town away from where my then 80-year-old mother lived in Florida. After a couple of phone conversations with the owner and some emailed pictures, Dawn and I flew down to take a look at the little green boat. I was armed with Don Casey's book on inspecting aging sailboats and several pounds of



literature on the Flicka. If the boat turned out to be more of a project than we were looking for, I rationalized that we would, at least, simply have made a long-overdue family visit.

Love at first sight

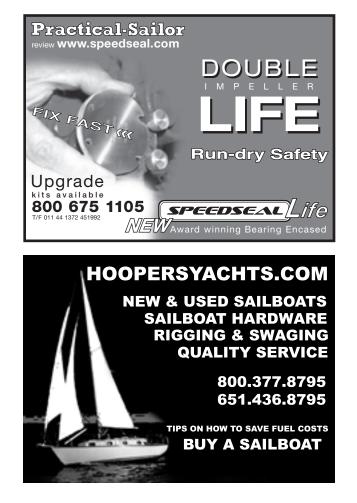
Almost as soon as we stepped aboard *Laughing Dolphin*, we knew we had found our boat. She had the enclosed-head layout we preferred, the interior teak was well restored, the inboard diesel was clean and sound, the sails and rigging were in good shape, and we were assured her bottom was blister free and freshly painted. Although some cosmetic work was in order, she was as near perfect for the price as we were likely to find.

A few days later, after an easygoing telephone negotiation with the owner (then off in Mexico delivering a 50-foot Beneteau), I arranged for a professional marine survey. The boat checked out as "above average." Within a matter of days, we became the proud owners of s/v *Laughing Dolphin*, a 1982 Pacific Seacraft Flicka, hull #218.

We took a few moments to toast our new boat and then reality hit us: how would we get her back to Vermont? I assumed we would hire a boat hauler. I got several estimates, but all amounted to a third or more of the price we had paid

Sailing against a background of fair-weather clouds, Roy's wife, Dawn Saunders, takes the helm of *Laughing Dolphin* on the final leg of the delivery, which took them up the Hudson River to Lake Champlain.





66... the dream managed to stay afloat and perhaps even surface stronger than ever. **99**

for the boat. Actually, that was probably reasonable, given fuel costs and the three-ton-plus heft of the Flicka. We considered buying a trailer, but the cost was also about one third our purchase price for the boat and would require us to rent a size-able vehicle (my Mini Cooper was hardly up to the task). Add in the fuel costs and tolls, and we were getting into substantial cash to tow her home ourselves.

At some moment along the way, I started thinking about just putting the boat on the hard for a few months and coming down in May at the end of the semester to sail her to Vermont via the Intracoastal Waterway, the Hudson River, and Lake Champlain Canal system. With Dawn's encouragement, I went from thinking about it to seriously planning it, even though my lack of sailing experience made the possibility seem daunting.

An education begins

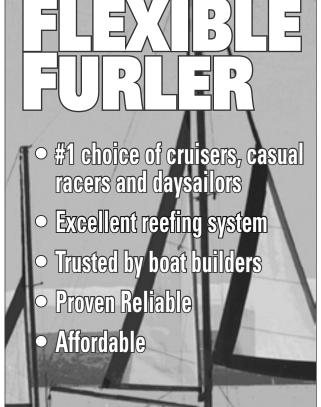
Experience be damned, I was committed (some of my friends and family certainly thought I should have been committed). I returned to Florida during my spring break, dry-docked *Laughing Dolphin*, and took a one-week ASA course in basic keelboat sailing and coastal cruising at the Chapman School of Seamanship. By the end of the week, I was more convinced then ever that I could, indeed, sail our boat to Vermont.

Sure, I was a novice, but I was a quick learner. Sure, I would have to teach my video-game-addicted son, who would crew with me from Florida to New York City, how to handle a boat in the real world. And sure, I would need to find a way to instruct and assign duties to my often headstrong wife, who would crew the final week of the journey north from New York City, without risking a marital mutiny. Ah, but it would all be one grand adventure.

And indeed an adventure it was, one in which the stuff of dreams met the reality of salt spray, the vagaries of too much or too little wind, the numbing hum of the diesel, the draining of the bank account, and the rise and fall of both the crew's and the skipper's spirits — and yet the dream managed to stay afloat and perhaps even surface stronger than ever.

I've always felt that the true sign of maturity is when you realize how little you really know, how much you have to learn, and how long it will take you. Well, I knew then, and still believe, that I have only scratched the surface of what I need to know to call myself "captain" with real confidence and authority. That is as it should be. I also know there is little substitute for experience, but sometimes you need to swallow your fears, face the horizon, and raise the sail.

When **Roy Vestrich** is not sailing and otherwise exploring the world, he teaches film studies and scriptwriting at Castleton State College in Vermont. In the summer of 2010, he and his wife, Dawn Saunders, cruised their Flicka from Vermont to New Bern, North Carolina. Sadly, a gale-force squall, a dragging anchor, and a derelict bridge conspired to cut short their winter 2011 cruise in the Florida Keys. And that's another story.



The Origina

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Simple solutions

Banish holding-tank odor

A homemade filter keeps the cabin sweet

by Bob Tigar

B oating equipment retailers offer dozens of chemicals to make your head smell fresh. We tried them all in our attempts to eliminate the smell generated by the holding tank on *Diversion*. I reviewed the entire system looking for defects to correct:

- The toilet didn't leak.
- Hoses were top-grade sanitation-type and in very good shape.
- The vent line ran as near vertical as possible and was clear of obstructions.
- Hose clamps were tight.
- The holding tank didn't leak.

I knew the smell was coming from the vent line. I learned there wasn't enough oxygen available to support the normal breakdown of waste in the tank. Flushing the holding tank provided only temporary relief. Enzymes meant to help activate the waste breakdown, as well as chemicals that are supposed to mask the smell, had very little effect. Nothing worked for very long.





Most of the parts needed to make a filter can be acquired at a wellstocked home-improvement store. Bob used hose adapters he found in his spare-parts bin, which is why one is brass and one PVC.

A friend suggested a carbon filter for the vent line. That seemed like my only option, yet it was a fairly expensive one. The cost of such a system is \$80 to \$100, and the replacement element (required at least yearly) is only a few dollars less. So I made one myself.

This turned out to be a very easy, inexpensive project. Once you acquire the parts (most are sold by your favorite hardware store), assembly takes less than an hour.

Component parts

- PVC pipe of any diameter and length suitable for your sailboat, e.g. a 6-inch length of 2-inch-diameter pipe
- Two PVC pipe sleeves of the same diameter as the pipe
- Two PVC reducing bushings; one end of each slides into the sleeve, the other is threaded to accept NPT pipe thread
- Two male pipe-to-hose adapters; the pipe thread matching the female end of the bushing; the hose barb matching the diameter of your vent hose, usually % inch
- Two foam discs; these fit inside the bushings to keep the filtering product in place
- Two hose clamps to attach the vent line to your filter
- PVC pipe glue
- Activated charcoal for the filter material

I found the pipe-to-hose adapters in my spare-parts bins and acquired all of the PVC fittings at my local hardware store for a little more than \$10. I found the activated charcoal (Aqua-Tech Activated Carbon) for a little over \$6 at Walmart in the tropical fish section of the pet department. I cut the foam discs from a fiberglass filter element used on a forcedair heating/cooling system. Almost anything can be used for these: a scrubbing pad or even a coarse sponge. It must be firm enough to hold the charcoal in place while allowing air to pass through.

Assembly

- Cut the PVC pipe to a suitable length for the space you have available.
- Glue the sleeves to the ends of the PVC pipe.
- Fit the foam discs into the bushings. A drop of glue will hold them in place.
- Glue one bushing into a sleeve. This is the bottom of the filter.
- Mark an arrow on the tube to indicate the direction the filter will be positioned.
- Hand press the top bushing into the other sleeve. Do *not* glue it.
- Screw the pipe threads of the hose adapters into the bushings.
- Remove the top bushing (you marked the unit with an arrow indicating the top).
- Fill the cylinder with the activated charcoal.
- Refit the top bushing.
- Cut an appropriate length out of your vent hose.



Assembling the filter is easy. The arrow points to the top bushing, which can be removed for recharging the filter.

• Install the filter by fitting the vent hose ends onto the hose barbs and clamping them with the hose clamps.

This did the trick. No odor escapes through the vent when the toilet is flushed.

The larger the PVC tube you can construct, the longer the filter will remain effective. Replace the charcoal when the odor returns. To do this, remove the filter from the vent line, pull out the top bushing, dispose of the charcoal, and refill your filter. The total cost of this project should be less than \$20 including sufficient activated carbon for 4 to 5 refills.

> Bob Tigar and his wife, Joyce, began sailing a board boat on small inland Midwest lakes, then progressed to larger sailboats on Lake Michigan. Since moving to southeast Florida 13 years ago, they sail their Morgan Out Island 33, Diversion, on weekend excursions near home, longer adventures in the Florida Keys, and annual trips to the Bahamas.



The space available around the holding-tank vent hose will probably determine the length of the filter as well as where it will fit. This is the vent hose in Bob's boat before he fitted the filter, at left. Dry fit the filter housing before adding the charcoal. It's easy enough to trim the PVC pipe to length. Cut into the vent line only after making the filter. Clamp the hose to the hose barbs. Secure the filter if necessary, at right.

Quick and easy







Divide the long axis into thirds with the middle section slightly larger than the outside sections, above at right. Depending upon what's on top, the first set of folds permit you to see all three vertical panels of the chart. Next, fold the short axis into fourths using an accordion fold.

How to fold a nautical chart

A system that simplifies storage and use

by Steve Christensen

veryone knows the importance of keeping paper charts aboard as backups for our electronics. But these things can be huge, so how do you store them? Rolling them might make sense if you had a full-sized chart table, but few sailors have that much space aboard. The other solution is to fold them.

Most folks fold their charts in half and then half again until the size is manageable. This works for storage but usually requires that you completely unfold the chart to find the part you need, then make new folds to reduce the size once more to what you can fit on your nav table.

There is a better way to fold charts that makes them handy to store while allowing you to access any part of the chart quickly without opening the entire



sheet. I learned this method from an orienteering book years ago as a way to fold topographical maps for use in the field.

Thirds, then fourths

First, divide the long axis of the chart into unequal thirds. Then fold the bottom third and the top third panels under the middle section. (*Note: This concept is similar to folding a letter to fit in a business envelope.* We used a world map to show how the technique makes every part of the map accessible. –*Eds.*) Make the center portion slightly bigger to allow both the top and bottom portions to fit behind the center section.

Next, make an accordion fold of the short axis of the chart by first folding it in half, then folding each leg back on itself outward. The result is a folded chart that is one-twelfth the original size with the printed chart number (if your chart is arranged this way) showing on the upper right corner.

Try this with a sheet of paper and you will quickly see the benefit of this approach. If the part of the chart you need is on the top third, you can open one fold in the middle. If you need more width, unfold one or the other side flap. If the part you need is in the middle third of the







The accordion fold allows you to use just a small section of each panel at a time. Using the 12 sections as smaller and more maneuverable charts, the variations are endless.

chart, flip it over as you unfold at the middle. And if the part you need is on the bottom third, open the accordion fold all the way, open the chart, and refold it with the top portion inside and the bottom portion showing. All this occurs without completely unfolding the chart or adding any new creases in the paper.

Fold for normal use

A couple of variations can be useful to keep in mind before you start to fold a chart. If, for example, your sailing area is near the main folds, or if you are mostly following an up-down route, you could find yourself frequently turning the chart over to see different thirds. A solution for this is to instead fold the chart into thirds across the short axis first and then add the accordion fold.

The other variation is that if you are primarily going to be using the middle third of the chart, it can be advantageous to install the accordion fold with the middle third, rather than the top third, facing up.

But don't worry too much about these subtleties. Whatever way you choose to do it will still be much easier on you and your charts than folding them into eighths the way most sailors do! Δ

Steve Christensen, a research chemist, sailed his Ericson 38, Rag Doll, for many years on Lake Huron and spent each August cruising the North Channel. He is between boats just now, but looks forward to owning another good old boat in retirement.



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Quick and easy

Instrument covers



Fabric scraps protect delicate displays

by Karen Larson

The sailing instruments in our cockpit are not the original units that came on our good old boat. The depth sounder and knot meter have both been replaced within the last six to eight years. I don't think of them as all that old, so when the little protective covers for these instrument displays disintegrated from UV exposure, I naturally assumed we could order more. Nope. When the instrument is no longer in production, the company apparently stops selling the accompanying covers.

Somewhat miffed, I began considering do-it-yourself alternatives. Make a mold of epoxy? Cover all three displays with one drop-down flap? Create something like a little shower cap for each unit? In the end, I created a little tailored Sunbrella cover for each one.



Making replacement instrument covers with fabric left over from other onboard projects ensures a good match with the boat's color scheme.

I measured each instrument box for the top of the cover. I added an extra ³/₄ inch for the side flaps. Then I cut out the corners, since the extra material at the corners would be cumbersome. Jerry cut out the pieces with a hotknife so there'd be no frayed edges at the hems. I sewed each side flap, then sewed another narrower hem to hold a bungee cord in place at the far edge of the hem.

I chose ¹/₈-inch bungee cord, since it had the amount of elasticity that seemed right for the project, and threaded a piece into the casing sewn for it. A square knot finished the project. I could have cut the knot ends shorter, but I find them helpful as little tabs to hold when covering the instruments.

I feel better keeping our instrument displays covered when they're not in use. After what the sunlight did to the previous caps, it makes sense to protect the displays from UV. After all, I can always make another set of covers from some scrap Sunbrella and bit of bungee cord in a few hours and at little expense.

Karen Larson is the editor of Good Old Boat.



Replacing a lost halyard

A not-so-nutty way to send a messenger

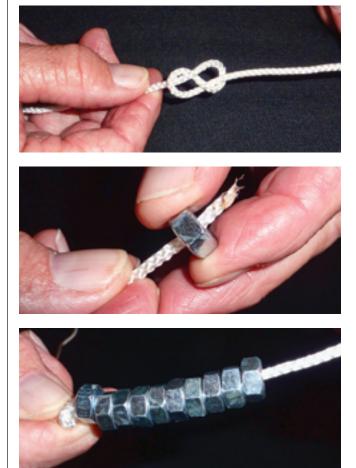
by Carl Hunt

You say you lost an internal halyard? You're scratching your head over how to reeve a messenger with which to pull through a replacement? Here's an easy way to do it.

Tie a stopper knot 7 or 8 inches from the end of a messenger line. Gather enough steel nuts to equal about 4 inches when strung together. These nuts should be somewhat smaller than the diameter of the halyard. Don't use stainless-steel nuts.

Thread the nuts onto the end of the messenger line with the stopper knot, then tie another knot to prevent them from falling off. (Alternatively, thread the nuts onto a short length of flexible wire and tape that to the messenger line.)

If you push on one end of the string of nuts, it will be stiff enough that you can push the nuts over the top of a sheave. Once you let go, the string of nuts will be flexible



Carl's weighted halyard messenger begins with a figure-eight knot tied several inches from the end of the line, at top. He then threads steel nuts onto the messenger line to create a weight flexible enough to pass over a sheave, at middle and above. Another knot tied at the end of the messenger keeps the nuts from falling off. enough to allow the weighted line to drop on the other side of the sheave. The nuts will help the messenger line drop down the mast to the halyard exit.

If, before sending it down the mast, you first hold the messenger line at the sheave box at the top of the mast and drop it outside the mast to the halyard exit, you can tie it off to mark the length from the mast top to the halyard exit. After you push the nuts over the sheave, the messenger will then pass down the mast until the nuts at the end stop close to the halyard exit.

Here's why it's good to use steel nuts: attach a thin magnet to a thin rod and use it to fish the messenger out through the halyard exit. Δ

Carl Hunt is a semi-retired economist. He has sailed for 30 years and cruised his own boats from British Columbia to Mexico. He has chartered and cruised other people's boats throughout the eastern U.S. and the Gulf of Mexico, the Caribbean, the Mediterranean, and other parts of the world. He lives in Colorado.

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Mail buoy

Continued from page 7

- c. Nobody is required on the helm, freeing up another hand.
- d. The boat heels over, lowering the leeward freeboard, making it less difficult to lift the victim on board.
- e. The Von Karman vortex street off the stalled keel and rudder calms the sea to windward.
- f. The boat is moving slowly (about 0.5 knots) and under full control.
- g. If it appears that you are going to miss the victim, now is the time to start the engine and apply forward or reverse as needed, without touching the helm.
- 7. If your GPS has a MOB function, use it. Factor in drift.
- 8. After a successful recovery, hypothermia and partial drowning remain a serious threat. Consider asking for outside assistance for dealing with both.

If you cannot pick up both a mooring and a MOB consistently under sail, practice until you can.

-Sigmund Baardsen, Vallejo, Calif.

Landlocked OK boy

I just wanted to reach out and let you know how much I enjoy *Good Old Boat*. I'm a landlocked Oklahoma boy so I'm always delighted to find a new issue! My two brothers and I just finished (for now) a restoration of our 1980 Catalina 25, *Genevieve*.



We kept a blog of all our work that you can check out if you're interested: <www.towindward.tumblr.com>.

Anyway, we were out for a sunset sail tonight and my wife snapped a quick shot of me reading my new favorite magazine!

-Josh McCullock, Oklahoma City, Okla.





My back-pocket copy

In response to how much I enjoy your magazine (I walk around with it in my back pocket practically everywhere), I used to reply, "I read each issue cover to cover and I don't even own a boat."

Not anymore! We are now the proud owners of a beautifully rundown classic Lido 14, hull #2211. Waaaaaaaaaaaoooooo!

We are now only three

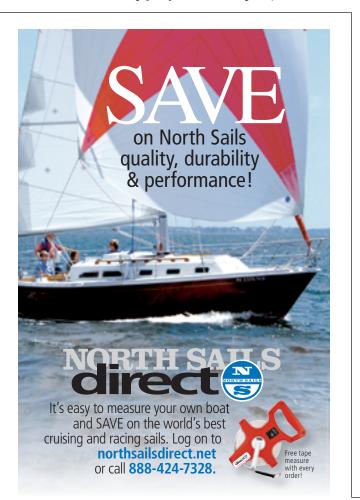
missing/obsolete parts and one torn mainsail away from putting her in the drink for our first sail in years. For our young son, it will be his first sail *ever*. We're stoked! -David McDaniel, Redondo Beach, Calif.

We're stoked too! Congratulations!

-Editors

Dorades and diesels

I'm enjoying the July issue as I do every issue. Don Launer made a beautiful sliding door system for his Dorades ("Dorade Draft Excluder"). I've always used a simpler system when I install Dorades. I simply buy a Nicro deckplate, which comes



with a cover for whenever you're not using whatever Nicro opening. I place that inside and it looks neat. I can pop the cover in whenever I want to stop the airflow. It doesn't have the beautiful craftsmanship that Don's does, but it's simple, quick, cheap, and comes in 3- or 4-inch sizes.

By the way, there should be no doubt that propane is much hotter than alcohol ("Cooking Without Pressure"). I cooked on pressurized alcohol for years, installed CNG (compressed natural gas) in one boat, and my current boat came with propane — scary but it works well. Have you ever thought about the irony? Before there were small diesels, all boats had gas engines and everyone was educated about the dangers of gas fumes and the need to run the blower and sniff the bilges. Then, when small diesels became available and we have safe, non-explosive diesel fuel, we ditched the relatively safe alcohol and demand (the dangerous-like-gasoline) propane.

Too bad CNG didn't take off.

-Len Lipton, Norwalk, Conn.

Nomadness Report

I thought I'd let you know about my new publication . . . a weekly PDF called the *Nomadness Report*. Parts of it are right down your alley.

There's a sample issue at <nomadness.com/ nomadness-report-subscriptions>.

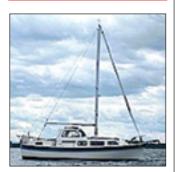
-Steven K. Roberts, Camano Island, Wash.



Terry Walkington took this scenic view of three good old Catalinas rafted together last summer in Croker Bay near the Benjamin Islands in the North Channel of Lake Huron. The boats, from left to right, are *Sweetwater, Island Time*, and subscriber Mark Haveman's boat, *Air Cooled*. Mark liked this photo so much he sent it to our webmaster, jstearns@goodoldboat.com, for posting on the Good Old Boat photos page, <www.goodoldboat.com/reader_services/reader_photos.php>.

Good old classifieds

Boats



Finnsailer 29

Very seaworthy and comfortable motorsailer. Hull, superstructure, deck solid fiberglass in accordance w/Lloyds. Updates include watermaker, on-demand hot water, Force 10 LPG stove, fridge. Very stout SS rigging and newer Harken RF. Reliable Perkins 4.108 diesel w/Borg Warner drive. Includes dinghy w/2.5-hp Yamaha 4-stroke OB. Mooring on Lake Champlain in Charlotte, VT. \$26,500.

Peter Geise 802-899-4210 gofans@aol.com



Ranger 33

Refitted to cruise. Bristol sailaway cond. Located in beautiful La Paz, Baja California Sur, Mexico, on Sea of Cortez. Possible owner finance w/good credit payback record and good work history. \$28,500.

Michael Sandusky 303-408-4696, 303-408-5604 svbrighid@gmail.com www.sailboatlistings.com/ view/23371



Stone Horse 23'4" 1974 Edey and Duff. Hull #53. Second owner. Twin RF headsail rig, custom furling staysail on club, Westerbeke 12B2 inboard w/built-in 10-gal tank. 365 hrs. Loaded w/usual gear. Spare marine battery and charger. Exc cond. In the water at the Great Lakes Naval Station, IL (Lake Michigan). \$21,000.

> Perry Walcott 847-295-7565 pwalcott@sbcglobal.net



Fabola Diva 45 1997 Swedish-built racer/cruiser. New sails, full Raymarine electronics w/AP. Yanmar saildrive w/ low hrs. Has bow thruster for tight maneuvering. Very fast, oceancapable, sailed over the pond on her own bottom. Semi-custom boat w/many unique features. Interior very nice. Fantastic Swedish craftsmanship. On the hard for too long. She needs to sail! Bayfield, WI. \$125,000.

Tim Edwards 715-779-3153 edgo@centurytel.net www.pikesbaymarina.com/ brokerage/Fabola/fabola_ index.htm



Soveral 28

1962 classic yawl. Comfortable sailing boat. Everything new or updated. 20-hp Westerbeke diesel, new mainsail, sailcovers, cockpit cushions. Sleeps 4, head, galley, good headroom in cabin. Lots of sails. Marine radio, AM/FM radio w/CD player. New carpeting and toilet. In the yard at Point Bay Marina, Charlotte, VT. Reduced price, \$6,000. Moving. Must sell. **Bill and Nancy Brogden 802-436-2785**

nancybrogden@vermontel.net



Paceship PY23

1974. Shoal-draft centerboard version trailersailer w/too many upgrades to list. New mainsail, assortment of headsails including spinnaker w/chute. Rebuilt roller/ bunk trailer, 6-hp Evinrude w/ charging circuit and solar panel. Sleeps 4 comfortably. Many teak upgrades. Ready for exploration! North Branch, MN. \$6,000. **Peter Hyslop 651-277-7126**

1boatnut@izoom.net



Nonsuch 36

1984 Hinterhoeller. Freshwater boat. Well-loved, cared for by proud owner. Single-sail rig w/ wishbone-type boom makes the Nonsuch 36 perhaps the easiest sailing boat ever built. Westerbeke 58 w/600 hrs. Many new features added since '02. Included, uninstalled: new propane cabin heater and new electric sail winch. Additional photos available by email. In Muskegon, MI. \$85,000. Timing is everything!

Edward Kress 231-766-2561 amyjohn1218@comcast.net



Blackwatch 23

1981 shoal-draft, cutter-rigged, trailerable pocket cruiser. *Moor Patience* draws 24". 22'7" LOA. Exhaustive restoration in '08/'09 from mast top to keel. Original gelcoat is magnificent. New RF jib and staysail, extensive canvas.

Most of our classified ads appear on the GOOD OLD BOAT website: www.goodoldboat.com/resources_for_sailors/sailing_classifieds/ Airy cabin sleeps 2. All new teak. Extensive restoration list available. Colorado. \$18,500. Mark Nash-Ford Allaboutfun@comcast.net www.youtube.com/ watch?v=a8VbahlCtjs



Solo II 17

1992. Large cabin and cockpit. Shallow winged keel w/400lb ballast. Rotating mast. Mercury 4-hp 4-stroke used approximately 15 hrs. New trailer suspension and wheels. Many other extras. Located in CT. \$3,600 OBO. Sal Esposito





Ranger 28

1977. Gilded Lily. Fully restored. Feature boat Sept. '06 issue. Many upgrades. Beautiful, fast, comfortable sailer. Enhanced A4. New bottom paint. Dinghy, davits. On the hard, Atlanta. \$12,500. **Walt Hodge 770-498-1678 walt@wingnwing.com www.wingnwing.com**

Cabo Rico 34

1989. Mostly fresh water on the Great Lakes. Used infrequently. In good cond. Rochester, NY. \$65,000. William Lutz 716-442-7556 William@williamjlutz.us

Boat Share



Allied Seawind 30

Looking for a partner to share a 1965 ketch. Share includes upkeep and dockage. A Thomas Gilmore design. A true classic, sought-after bluewater cruiser. Always in fresh water. She lies in a beautiful laidback slip in downtown Bayfield, WI, on Lake Superior, 1 block from Maggie's. In good solid cond. Price negotiable.

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Good old classifieds





Good old classifieds







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fleets.html#FleetGreatLakes





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- Column width is 1% inches.
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- Classified display advertisers are invoiced following publication of the issue containing their ads.

Interior improvements

Galley improvisations, continued from page 39

portal, but it defies my imagination that it could be intended for anything more useful. The trick is to make the most of it by fitting the biggest trash bin possible into that space.

After a couple of attempts at using commercially available plastic trash cans, I finally attached a light wooden framework that supports a 30-gallon plastic trash bag to the back of this bulkhead. It's easily accessible from the cabin and the cockpit,

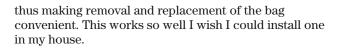
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Pragmatism rules

A common-sense approach to boating shouldn't be a radical concept, but as I look around at other boats — and as a marine surveyor I see a lot of them — I don't see much evidence of common sense. Perhaps most boats don't get lived in enough to force the issue, and the standard solution to any inconvenience while boating is often to buy a bigger boat. That is the easiest and most expensive option, but even taking that step doesn't necessarily solve the problems. I feel I have a better boat because I take a pragmatic approach and we have amazing adventures for a fraction of what some of our peers on the water have invested. Isn't that what sailing is about? *A*

Tony Allport is a SAMS marine surveyor. He lives on Anderson Island, in southern Puget Sound and sails extensively with his wife, Ann, and children, Alden and Claire, on their Swedish classic 30-foot Albin Ballad sloop, Pleiades. He is also known on the island as a skilled cabinetmaker and for his excellent pies. See <www. marinesurveyor.com/allport>.



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Nature-Zyme by BiOWiSH Technologies is a biocatalyst that is intended to rapidly accelerate the breakdown of waste and eliminate odors in your





pets, and that it will clean your tank and improve the operation of sensors and gauges. We have been testing this product in our boat for about a month and it's working.

Nature-Zyme is priced at \$11.99 for

holding tank. Its manufacturer claims it to be 100 percent natural and non-toxic, safe for

the environment, humans, and

– Michael Facius

12 tablets. Learn more at

<www.nature-zyme.com>.

Grey Beard low-capacity pump

The Grey Beard Pump is a multipurpose pump that can solve some problems on your boat or at home.

For instance, the bilge in our C&C 30 (like many, I suspect) is never as dry as we would like it to be. The backflow from the discharge hose when the bilge pump switches off can be upwards of a quart of water, and getting into the bilge to sponge it up is not easy. Grey Beard solved that problem on our boat.

This pump has its origins in the medical industry, where its many applications require it to be dependable, portable, self-priming, able to run dry, and to have parts that are easily exchanged. It transfers about a pint a minute of nonflammable liquid, which makes it handy for pumping oil from an engine or water from a bilge. The pump draws very little current and is available in versions that run on either AC or DC.

The Grey Beard Pump costs \$69.95 and is available on line at <www.greybeardpumps.com>.

– Michael Facius



To be featured on this page, items must be new products. If you would like to have your product featured here, please send an email to Michael Facius, michael@goodoldboat.com, or call him at 612-605-8319. By the way, readers, if you contact a marine supplier mentioned here or elsewhere in our magazine, please remember to tell the folks there that *Good Old Boat* sent you.

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How to refloat a boat, continued from page 28

were most likely to be the strongest. Next, we rigged a five-part block and tackle to the spinnaker halyard to provide forward lift, taking advantage of the leverage provided by the mast and the fact that the keel was resting on the bottom. Now came the part that required some critical judgment. We had to be sure we didn't allow the come-alongs to pull the toerails right out of the boat!

Up she rises

Knowing what forces can be expected when a spinnaker fills in a gust of wind, I was not particularly worried about my five-part block on that purchase. So with patience and perseverance, we slowly brought the stern up until the cockpit coamings were above the waterline. We then put two sump pumps (the type used in basements) to work in the forward cabin. It helped that the hatchboards were tight.

A 5-gallon bucket can move water a lot faster than a sump pump, so Tony went to work in the cockpit area, only to discover that the cockpit drains were allowing water to enter almost as fast as he could toss it overboard with a bucket. The solution to that problem was easy: two kitchen sponges weighted dow n with ingots of lead. Everybody has those items "at the ready," right?

With more patience and perseverance, and by taking up on the two come-alongs and the spinnaker rig as needed for this

66 The cockpit drains were allowing water to enter almost as fast as he could toss it overboard. **99**

balancing act, we had the boat floating within an hour. After a sinking, of course, that's not really the end of the story. First the engine required attention after being under water for about four months, and we needed a pressure pump to clean up the interior.

I left Tony (he's the younger guy) to take care of those jobs while I went sailing and contemplated what to do about the other Ranger 23 that sank 6 feet straight down nearby at the same dock.

All in all, this was a very satisfying project. \varDelta

Jim Hildinger has been sailing on Lake Tahoe for 51 years, first in an O'Day Tempest 23, Rubato, then on his Catalina 27, Cadenza. He was president of the International Catalina 27/270 Association for a few years and remains active in the national organization. Although technically, at 80, Jim's an old geezer, his passion for helping other sailors has not diminished.





Are you OK?

A sailboat sailing? ... What's the problem?

by Connie McBride

O ur sanity has been questioned on more than one occasion. If you pack three sons and two parents on a 34-foot boat and sail away, people are bound to shake their heads. After eight years, we have come to accept that. What continues to surprise us, though, is when it is the *sailing* of our sailboat that raises eyebrows, even among sailors.

We have a usually functioning 7-year-old motor in our Creekmore with a shameful 500 hours on it. We also have new standing rigging, good running rigging, and nine sails. It shouldn't be surprising then, that the vast majority of the 20,000 miles we have traveled in *Eurisko* have been under sail. The reaction we get sometimes when we *are* sailing, however, says otherwise.

We were in Chaguaramas, Trinidad, one November, preparing for a passage to St. Croix. As he frequently does when viewing tight anchorages, twisty channels, and other challenging situations, Dave asked, "Think we can sail out? I want to sail through Boca de Monos."

"Why?"

"To see if we can."

We spent the next 45 minutes on deck, watching other boats lay to the wind in a gust, then fall off to the current in a lull. This was not going to be easy. When we were confident of our plan, we raised sail and dropped the mooring. Maybe we looked uncoordinated, maybe we were closer to some hazards than we thought, or maybe the sight of someone sailing out of the harbor really *is* that unusual. For whatever reason, a French cruiser jumped in his dinghy and hurried to our rescue.

"S'OK?"

"Yup, it's OK."

"You no need help?"

"No, but thank you." I guess.

We sailed out of the harbor (albeit slowly), through Boca de Monos (I believe it took 16 tacks; Dave swears it was fewer), around the east end of St. Croix four days later, through the channel, and into Christiansted Harbor to log a successful 450-mile sail. Should that make someone wonder if we are OK?

Years later, we returned to the Chesapeake for a few months and were immediately reminded of the lack of wind there. We coasted as much as we sailed that summer, honing our light-wind sailing skills, which included judging how far 20,000 pounds will carry to windward in a channel too narrow for tacking. This time it was an American cruiser who shouted as he motored by, "Looks like you're not having a very good day."

Aboard the McBrides' 34-foot Creekmore, *Eurisko*, the sails are used for sailing, so it puzzles her crew when others see them as a distress signal.

"We are having an excellent day, just sailing," we answered. "But you're on the wrong side of that green."

As he motored aground outside the clearly marked channel, the wind shifted, our sails filled, and we sailed into the bay. (And people wonder if *we* are OK.)

We spent a year in Bocas del Toro, Panama, enjoying the consistent breeze and lack of seas. The first three months we were there, we went for 21 daysails, for a total of 220 miles, without ever starting the motor. While sailing through a crowded anchorage for the fourth time one afternoon, looking for a good spot to drop the anchor, we were greeted by a German sailor in his dinghy, "Are you OK?"

While we appreciate the concern of our fellow cruisers, it saddens me to realize that because so few of them sail, they assume we require assistance when we do.

Then one day it happened. We were buddy boating with a delivery crew of Californian sailors through the Colombian islands to Isla Mujeres, Mexico. After our last sail together, we were all relaxing on deck when one of their crew said, "We were raising anchors and sails. Things were flying and flapping and going to hell. We were all running around yelling and swearing and I looked over at you guys. You were leisurely pulling on halyards and sheets and rodes. Your cats were all sprawled out in the sun. And poof, you were off, sailing away. And I thought, 'I want to be on their boat!'"

I smiled and replied, "Well, we've done this once or twice before." If that makes people wonder if we're OK, I'm OK with that. ${\cal A}$

Connie McBride's bio is on pages 21 and 31.





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