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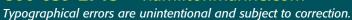


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GOOD OLD BOAT

THE SAILING MAGAZINE FOR THE REST OF US!



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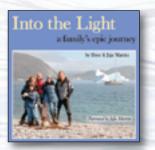


Legendary sailor John Guzzwell narrates the adventures he had while circumnavigating in *Trekka*, the 20-foot yawl he built. This is a must-have release for all who now follow in his wake and those who dream of doing so.

THE SOLITUDE OF THE OPEN SEA

In this series of narrative essays, Greg Newell Smith reflects upon the many adventures he had and discoveries he made during his world circumnavigation. The Solitude of the Open Sea takes you to the most unexpected places.

John Guzzwell: Trekka Round the World



Well-known circumnavigators, Dave and Jaja Martin possess the power to touch your heart and soul. The Martin family's true story of their travels in Iceland and Norway offers an honest look at life aboard in the best and in the worst of times.

Greg Newell Smith:
The Solitude of the Open Sea



A Year in a Yawl is a true tale of four young men traveling the Great Circle Route of the eastern United States over 100 years ago. Their youthful enthusiasm and resourcefulness make this a powerful and well-told classic.

Dave and Jaja Martin: Into the Light



These musings about sailing and boat ownership from the editorial pages of *Good Old Boat* will entertain you whenever you miss being near your sailboat, as well as any time you're aboard or driving to the marina.

Russell Doubleday: A Year in a Yawl



In 1895 at the age of 51,
Joshua Slocum began a threeyear circumnavigation aboard
Spray. The first man to ever
successfully complete a solo
circumnavigation, he recounted
the adventures he had along the
way in this classic tale.

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Joshua Slocum: Sailing Alone Around the World

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About the cover ...

David Wade captured this photo of daughters Morgan and Molly fishing for crabs in the Bohemia River, Maryland, after a day spent sailing on Zephyr, a 1978 Cape Dory 28. Zephyr has been part of David and Terry Wade's family for 15 years.

Read Me a Story Bedtime Stories for Young Sailors



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and Ginger Beer

Join Sally, Peter, and Andy Grant as they sail their way through the unpredictable waters of childhood.

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John Vigor: Sally Steals an Elephant



John Vigor: So Long, Foxtrot Charlie

Foxtrot Charlie just
wants to get along with
his foster family. But
sometimes being an
ordinary 13-year-old boy
gets him into trouble
— messes, explosions,

accidents — the harder he tries, the more he fails. Just when he thought things couldn't possibly get any worse, Foxtrot is lost at sea with his foster father, foster sister, and a friend. With the lives of three other people in the balance, Fox is faced with a challenge that helps him understand what's really important.

Russell Doubleday: A Year in a Yawl

Not long after Joshua
Slocum completed his
historic circumnavigation,
four young men from
Michigan set out on
another adventure that
had never been done



before: the Great Circle Route of the eastern U.S. They built a boat and traveled down the Mississippi, around Florida, up the Eastern Seaboard, back through the Erie Canal, and home to the Great Lakes. Their youthful enthusiasm and resourcefulness make this classic true story of a century ago a powerful influence on youngsters today.

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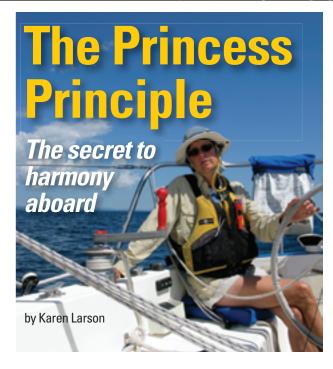
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here is aboard some couples' sailboats a phenomenon known aboard our boat as "the Princess Principle." This is a condition in which the guy (usually) tries extra hard at all times to make sure his sailing partner will always want to continue sailing with him. The last words any gung-ho sailor — take



my husband, Jerry, for example — ever wants to hear are: "You know, honey, I'd be a lot more comfortable, and probably happier, at home."

I have heard that the secret to marital bliss — on land anyway — is a 60/40 arrangement in which each partner gives 60 percent. The 60/40 ratio theoretically applies everywhere that couple goes, including aboard their boat. But in practice, for many couples, once aboard, one partner consistently gives 60 percent while the other gives 40 percent.

Jerry and I each do our own parts at home and our marriage is strong for it. I like to think I do my part aboard also, but we both know the ratio is somewhat skewed on the water. If it needs superior strength, Jerry does it. If the conditions are miserable and longer endurance is required, Jerry does it. Our boat doesn't have any canvas protection for the cockpit, for example. A dodger can't be fitted beneath our very low boom. Most of the time, we like the improved visibility and increased freedom of movement on deck. But when it's raining, the *fellow* at *Mystic*'s helm is rained upon. (*Fellow*, you notice; I take shorter watches at the helm and longer watches at the navigation station below in our dry cabin.)

Speaking of the helm, Jerry's on it at least 60 percent to my 40 percent, rain or shine. Perhaps I have a shorter attention span, but I eventually find a reason to turn on the autopilot and maintain a watch without the continued drudgery of hand steering.

Further proof of the Princess Principle in operation on our boat is that, over the years, my every wish has been Jerry's command and every complaint thoughtfully received to the point that I have to be careful what I wish for. This is not necessarily true at home. Early in our sailing days, I complained that our personal hygiene was not up to basic standards. I told him I would prefer to shower more often than every three to five days when we finally arrived at a marina for fuel or a pumpout. As a result, we soon had novel and ever-improving methods for showering aboard.

Jerry also made sure I was satisfied with our ability to store food and eat well aboard. Another part of his philosophy is not to let me feel overburdened with the planning, provisioning, cooking, and cleaning up. Ditto for the laundry that accumulates while we're cruising. He does his part in the galley and laundry room once we're home (or aboard with the bucket and plunger when the cruise is a long one).

And he bought me the best foul weather gear we could find. Never let the Princess get hungry or cold and wet. That's his motto. I think of it as the Princess Principle. It's a good gig, as long as I get to be the princess. \mathcal{A}

Teak alternatives, flat-felled

Another alternative to teak

I read with great interest the article by Tim Nye about making new handrails out of Trex decking to replace the teak handrails on his boat ("Forever handrails," November 2010). I began a similar project last summer to replace our exterior teak with a similar product. The brand I chose is Timbertech. website < www.timbertech.com >. The company has a product line called Earthwoods and specifically a color called Pacific Teak, which had the warmest color tones and matches my idea of what nicely varnished exterior teak should look like. It also has a nice wood-grain, non-skid

pattern. I used this to replace the decorative teak toerail caps on our O'Day 35.

Unlike Tim, I did plug the screw holes with bungs made from the Timbertech. As he stated, it added quite a bit of work, but I'm quite happy with the results. The part that made this process slow was that, unlike teak bungs that you glue or varnish in place, trim, and sand flush, the Timbertech bungs have a color and wood-grain surface that you need to preserve to match the surrounding material. I did this by cutting the bungs with my bung cutter in my drill press, then trimming and sanding each bung from the underside until it was the correct thickness and did not stand proud of the surrounding material. Before I pressed it into place, I sanded the top edge of the bung and the top inside edge of the screw hole to give each a slight bevel. Once I'd pressed the bung into place, I smeared a bit of brown exterior caulk into the bevel to make it watertight. So far, this has worked guite well.

Tim also points out that these products are easily worked with regular woodworking tools, but the worked surfaces are "whitish looking." He alleviates this by flame-polishing the edges. I took a different tack. I used a product called Penofin penetrating wood oil (left over from a cedar deck project) to darken the worked edges of the caps. I know people might think, "Why bother with this project if you still need to oil the faux teak?"



My argument is that I am not using this to preserve and protect the "wood" but only as a color match to make it appear indistinguishable from real teak. I expect to do this only every other year at most, but time will tell. The color match was perfect. The photo (at the bottom of the page) should give you an idea of what you can expect from your own project.

Either way you go, with Tim's technique or mine, I agree with Tim that we have a winner here.

-Danny Saathoff, Robbinsdale, Minn. We'd like a report from you about how it held up after a few years, Danny. We'll be interested in whether you felt the need to continue with the wood

oil treatment, how often that was necessary, and whether you're still satisfied with the product. So please let us hear from you. We have an update from Tim Nye (read below).

-Editors

Tim reports

Danny, that looks great! I wouldn't have expected the oil to come up nearly so nice on the composite wood. Now I'm thinking of maybe trying some myself.

I can report after two seasons that the sun has bleached the color slightly. You only really notice this on the hatchboards where the edges are not exposed. The bigger issue is that the coarse belt-sanded finish (to give it some "grain") holds dirt. We share a harbor with two steel mills, each with coke ovens. The black fallout tends to catch in the texture. Although noticeable, it hasn't bothered me enough to try washing it out. I do need to get some tackle off the boat, so maybe I could try giving my hatchboards a scrub and see

what happens.

-Tim Nye, Hamilton, Ontario

Composite decking

Thanks for the article by Tim Nye ("Forever handrails," November 2010) on using composite decking on a good old boat. I have an O'Day 28 ("A tale of two O'Day 28s," January 2009) on which I am replacing all of the exterior wood with composite decking. When I replaced the handrails, I was concerned about the strength of the composite decking, so I made my handrails about



seams, and Rhodes' legacy

one-third larger than the original teak ones. Thanks to Tim's testing, I feel confident that my replacements will be adequate. I have replaced my rubber and plastic rubrails with composite decking and it is wonderful. Like Tim, "I've found it to be strong enough for me."

-David Lucas, Fairhope, Ala.

A Singer and a flat-felled seam

My sailing buddy, knowing my interest in repairing sails and canvas and also having worked in a sail loft, dropped off your magazine article titled, "Sewing machine surprise" by Don Casey (November 2010). As I own a commercial Singer machine, I was surprised to read that a flat-felled seam contains 12 layers of fabric. If you look at your own jeans, you can see that the two pieces of fabric holding your jeans together with a flat-felled seam amounts to four layers. This is a basic seam I learned over 50 years ago. Was there a need to show the erroneous photo — twice?

I am sure Don's aware that the seam holding a dodger together at the port and starboard points does contain nine to 12 layers of fabric and a commercial machine is needed for this project. Was his photo of a dodger project overlooked?

-Mary Pazourek, Annapolis, Md.

Don answers

You are exactly right that a flat-felled seam is just four layers, but what the article says is: "Twelve layers is what you get when you hem the end of a flat-felled seam." If you do a single hem at the end of a flat-felled seam, the thickness is doubled to eight layers. However, we don't do a single hem on any canvas item where the underside will be visible because this leaves a cut edge exposed. Instead, we double hem the edge, which triples the thickness of the fabric. That creates a 12-layer spot at the flat-felled seam. The fabric in all of the photos is indeed 12 layers thick at the seam and both machines successfully sewed across the pictured spot.

My hope for this article is that it will remove one of the barriers that keep many sailors from discovering what you and I already know: that doing your own canvaswork delivers pleasure, pride, and significant cost savings. Thank you for taking the time to comment.

-Don Casey, Hialeah, Fla.

The sailing bug bit him on a Bounty

Reading the Robert Perry column on Phil Rhodes designs (January 2011) reminded me of the seminal reason I am now the owner of a good old boat. Back in about 1965, I participated in a college sailing club spring-break cruise from

Chicago boater Dean Raffaelli took this photo. Take your boat between these two aids to navigation and you'll head west for the Chicago Harbor Lock and onward toward the Mississippi River, just 350 miles downstream. Send a high-res photo of your favorite aid to navigation and, if it's printed, we'll send you a good old cap or T-shirt.

Ft. Lauderdale to West End and Freeport, Grand Bahama. We sailed over in a very fresh northeast wind that had built up rollers that were at least half the mast height. One other guy and I were the only two among 10 on board who didn't succumb to seasickness, so I got to spend a lot of time at the helm. The return trip was flat calm and we motored home — hard to believe it was the same ocean. The boat we chartered, a Bounty yawl, gave me my first experience on a large sailboat in big waters. I had no idea how significant that boat was in the evolution of yacht design. I only knew that I was hooked on cruising and would someday own a big boat. It took 35 years, but now I sail my Coronado 35 on Lake Superior.

-Mike Montesinos, Burnsville, Minn.

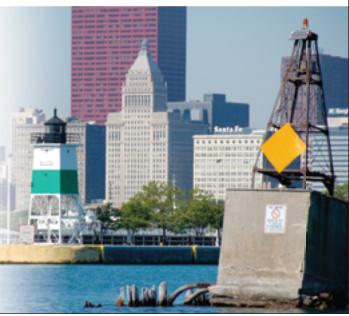
Kirawan II on hard times

A few years back, I had the pleasure of visiting *Kirawan II* (*Hother*) in Fort Myers, Florida. Unfortunately, she has come upon hard times. The present owner was midrestoration when he became disabled. Fortunately, he had stripped the hull, splined it with softwood, and epoxied the entire hull in preparation to cold molding over it with cedar veneers. The deck and house are badly rotted but much of the interior is good. The spars have disintegrated but almost all the hardware is there except for the engine and centerboard. To this day, the hull is so beautiful it takes your breath away. I truly believe her beauty and pedigree warrant the \$500,000 to \$1 million restoration required.

-M. Wnorowski, Palm Harbor, Fla.

An alumnus remembers Phil Rhodes

I enjoyed your January 2011 issue and, in particular, Bob Perry's fine article on Phil Rhodes.



I'm a touch older than Bob and also grew up poring over the published drawings of the great designers of the day, in particular those of Sparkman & Stephens and Rhodes. On graduating from the university in 1968, with a business degree no less, I applied for a job as a designer at the Rhodes office in Manhattan. It was my very good fortune that Jim McCurdy and Phil's son, Bodie (Philip H. Rhodes), had just decamped to Cold Spring Harbor to start their own firm, McCurdy & Rhodes.

I was swept into the vacuum left in their wake and worked directly under the tutelage of Mr. Rhodes. (I would never have called him Phil to his face!) Timing is indeed everything. I was involved mainly in work on three designs, two 67-foot ketches and a 98-foot ketch, that were building at Krogerwerft on the Kiel Canal in Germany. I traveled to that yard (at age 23!) several times as Mr. Rhodes' representative. Phil Rhodes was a pleasure to work for and was most generous in teaching me a great deal. My salary was small, even for that day and in New York, but there is no question that I was given far more than my work was worth.

I also had fun seeing the article on overhauling an Atomic 4 by my good friend (and former employee) Rob Mazza.

Keep up the great work of *Good Old Boat*.

-Mark Ellis, Oakville, Ontario

"Can't take much more excitement"

The Nonsuch 26 on the November 2010 cover is *Luff Affair* owned by Jim Avery. The photo was taken off New London, Connecticut, during the annual 2008 Maritime Cup Regatta.

Jim placed third out of eight boats in the race.

After seeing the cover, Jim said, "It was Saturday evening, October 23, at the Thames Yacht Club Octoberfest. Club member Lisa Good came in saying, 'Look, Jim's on the cover of Good Old Boat magazine!'

"It was the buzz of the evening. Everyone looked at the picture and congratulated me on the notoriety of being



on the cover of a national boating magazine. At 80, I can't take much more excitement!"

Jim joined the Thames Yacht Club in 1957 and has been actively racing ever since. A true devotee of anything that floats, he worked as senior mechanical designer at Electric Boat Corporation for more than 50 years, playing an instrumental role in submarine design arrangements. His career spanned many classes, including notables such as the NR-1 and Ohio Class.

Locally, Jim is the "Pied Piper of sailing," always on the lookout for able-bodied and adept young kids to introduce to the sport of sailing. Before the New London Community Sailing program, any kid who wanted to sail simply had to sign on as crew for Jim.

-Ted Paulsen, Thames Yacht Club member, West Hartford, Conn.

Wild goose chase?

This may be a wild goose chase, but my search here at the home front came up empty. My dad saw an ad in a sailing magazine about a gas-like product that, when sprayed into an open can, keeps paint or varnish from going bad. Apparently, the gas was heavier than air and would displace all oxygen from contacting the paint or varnish and would not affect the paint or varnish in any way. The only name I ever heard was "No-Ox." My dad thought it sounded like something that commercial painters might use. However, our paint stores have never heard of such a thing. Have you heard about a product like this and where I might find it? Perhaps it's a big waste of money?

-Chris Dimmitt, Lincoln, Neb.

Jerry Powlas responds

The product is named BlO₂xygen (pronounced bloxygen). Their website is <www.bloxygen.com>. I have bought and used the product but do not have a good test to prove it works. However, others have said that it does work.

-Jerry Powlas, Technical Editor

Web-based cruising and boating classes

Good Old Boat readers might be interested in two new Internet-based sources for boating and cruising information. Within the past two years, the Great Lakes Cruising Club, an organization of more than 2,500 U.S. and Canadian cruisers,







John Marsh sent in this photo of *Angelina*, a Doughdish, built by Wm. Harding and Edey & Duff in Marion, Mass., on a broad reach on Redfish Lake in the Sawtooth Mountains, central Idaho. Send your sailboat photos to jstearns@goodoldboat.com and we'll post them on our website. If we publish yours here, we'll send you a Good Old Boat T-shirt or cap.

and the Seven Seas Cruising Association, the oldest and largest worldwide organization supporting the liveaboard cruising lifestyle, have each launched schools to provide live, affordable, cruising-oriented classes online. Each organization makes its courses available to non-members as well as members.

To take webinars from either organization, all you need is a computer with a browser, access to the Internet, and the desire to learn. At <www.GLCCSchool.com>, the Great Lakes Cruising Club School offers an extensive list of webinars on cruising destinations across the Great Lakes and its tributaries as well as topics such as Great Lakes weather, currents, locking procedures, and more.

The Seven Seas Cruising Association's SevenSeasU, at <www.SevenSeasU.com>, also provides a wide array of webinars on offshore cruising destinations and related topics.

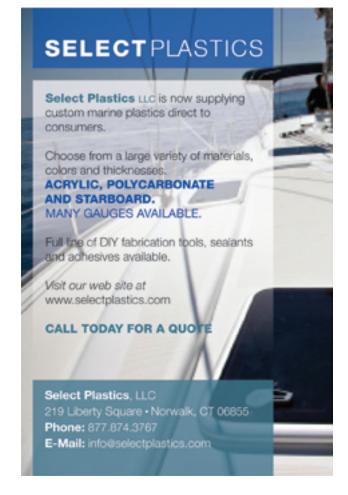
GLCCSchool and SevenSeasU webinars, combined with ongoing *Good Old Boat* articles, might be just the ticket for North American boaters patiently awaiting warmer temperatures to return to their own good old boats this summer.

-Bill Rohde, GLCC School Coordinator, Minneapolis, Minn.



Send questions and comments to *Good Old Boat*, 7340 Niagara Lane North, Maple Grove, MN 55311-2655, or by email to jerry@goodoldboat.com.







n Rathbun Lake in Iowa, a single lightning strike in 2007 severely damaged a Bristol 29.9. She was declared a total loss, but that didn't deter local boat maintenance and repair expert Larry Wilkinson from purchasing the boat at a bargain price. He brought her all the way back, restoring her faithfully to original condition inside and out. She is literally *and* figuratively in Bristol fashion.

When Larry put the boat on the market, she caught the eye of two Burlington, Iowa, river rats, Gary Smith and Bryan Schulte. They owned and sailed a Venture Newport 23 and a Catalina 25 on the Mississippi River, but the newly restored Bristol 29.9 was too alluring to resist. They became her new owners and named her *Rozinante*.

In July of 2010, my wife and I joined Bryan and Gary for a test sail on Rathbun Lake. The very active Rathbun Yacht Club includes members with a wide variety of cruisers and racers. RYC commodore, Karl Fenton, skippered his Catalina 28, Second Wind, as the photo chase boat. Bryan's fiancée, Jane Wilson, helmed Rozinante.

History and design

In 1956, cousins Everett and Clint Pearson founded Pearson Yachts. Grumman Allied Industries gained a controlling interest in Pearson Yachts in 1961, and Clint stepped away in 1964, eventually forming his own company — Bristol Yachts, in Bristol, Rhode Island. The new company's first production boat was a Carl Alberg design. Bristol models followed from the boards of John Alden, Ted Hood, Dieter Empacher, and Halsey Herreshoff. The company built a long line of quality boats until the business closed in 1997.

The Bristol 29.9 is one of the last of several models designed for the company by Halsey Herreshoff. It has a conservative profile and hull form with a fairly high cabin trunk, moderate freeboard and a nearly plumb counter transom. The company offered two keel configurations. The standard keel was a low-aspect-ratio fin with a draft of 4 feet 4 inches and the centerboard model had a board-up draft of 3 feet 6 inches, which seems curious since the board-up draft offered only minimally better gunkholing capability than the standard keel.





Part of the Bristol 29.9's appeal is its uncluttered deck, at left. The cockpit, above, is conventional, with seats just over 6 feet long and teak coamings that provide decent back support forward.

The rudder is protected by a skeg, with the propeller turning in a skeg aperture. The boat has a relatively small single-spreader rig and displaces 8,650 pounds. The resulting displacement/LWL ratio of 279 and sail area/displacement ratio of 14.8 position the boat as a moderate-displacement cruiser.

Between 1977 and 1986, 216 boats were produced.

Construction

The Bristol 29.9 has a sturdy hull of solid hand-laid fiberglass and balsa-cored decks. A modern builder would likely reduce the hull thickness to save weight and cost, but Bristol was committed to building boats that would last. The hull and deck are joined on an inward-turned hull flange. The joint is sealed with a butyl strip and through-bolted vertically. The bolts are closely spaced, resulting in a strong and secure joint. Except for some cutouts to clear backing plates for stanchions, I found no variance along the length of the joint.

The keel is molded integrally with the hull. The lead ballast is placed within it and contained by glassing over from the inside. This has some advantages during construction and eliminates the hull-tokeel joint problem found on many boats.

Unlike many builders, Bristol did not use molded-fiberglass hull liners for the interiors. A built-up plywood interior is generally stronger, quieter, and drier ... but more expensive. Bulkheads are securely tabbed to the hull. Their location and spacing provides for a very stiff overall structure. A benefit

of this method of construction is that most of the inner hull surface is readily accessible.

At first, Bristol Yachts used luan mahogany plywood for the interior joinerwork in the 29.9 but switched to teak in later production years.

On deck

The deck plan is practical and provides adequate sidedeck access for crew going forward. The chainplates for the dual lower shrouds and the cap shrouds are mounted at the rail, attached to knees that are built into the hull-to-deck joint. The chainplates and the stanchions are just inboard of the substantial teak toerail. Scuppers are cut into the toerail but they appear small and sidedeck drainage rates may be less than optimal.

There's a covered anchor well forward and large aluminum cleats mounted well back from the stem fitting along the insides of the toerails, which terminate at aluminum chocks. Port and starboard navigation lights on *Rozinante* are mounted atop neatly formed bulges in the toerails aft of the chocks. While this is an attractive installation, a higher mounting on the beefy stainless-steel bow pulpit would offer better visibility. Bristol recognized this and moved the navigation lights to the higher position later in the production run.

Single lifelines with gates were standard, but most boats were finished with dual lifelines, as on *Rozinante*.

The cabin trunk is fairly high and rounded. Teak grabrails extend about

halfway forward from the aft end of the cabin but end before they can provide a foothold for crew working at the mast. The cabintop is uncluttered with just two Bomar hatches, one over the saloon and one over the forward cabin. There are no Dorade vents on *Rozinante*, although Bristol did offer them as an option.

The mast and boom are aluminum. The mast is keel-stepped and has a single halyard winch. At least one additional halyard winch — so halyards for the mainsail and headsail can be handled separately — would be desirable.

The reefing line for the mainsail clew leads from a block aft on the boom to a cleat well forward, near the ram's horn fitting at the gooseneck. Since this requires crew to go to the mast to adjust the reefing line, installing a single-line reefing system would be a good improvement project.

The attachment point for the mainsheet is mid-boom. The traveler is mounted across the aft end of a substantial sea hood that protects the companionway hatch. There is no cabintop coaming.

The companionway sides have only a slight taper and to go below you must step over a sill about half the height of the cockpit seat. This half step doesn't qualify as a full bridge deck. At a minimum, the lower dropboard should be left in place when the boat is under way in rough conditions.

The cockpit is fairly wide but somewhat short. It can comfortably seat four along with a fifth at the helm.

Review boat





Somewhat unusual in a 30-footer is the dedicated chart table, at left, which uses the head of the quarter berth for a seat. The drawers beneath the starboard settee and the cabinets outboard, at right, are typical of the handsome joiner work found on Bristol yachts.

The seats are just over 6 feet long. Vents along either side of the helm seat make it difficult to sit to one side when steering.

The rather small 22-inch wheel mounts on an Edson pedestal. A larger wheel might provide easier steering control but would restrict movement around the helm. Engine shift and throttle controls are mounted on the vertical face of the cockpit well to starboard of the pedestal.

There is a shallow cockpit locker to port over the interior quarter berth. Another locker beneath the helm seat offers stowage and access to the emergency tiller connection. Under the starboard seat is a deep sail locker. A removable panel inside this locker provides access to that side of the engine.

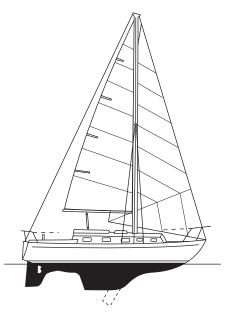
Accommodations

The cabin provides full standing headroom of more than 6 feet. *Rozinante*'s cabinetry and hull ceilings are mahogany and the joinerwork is above the quality seen on most production boats. A molded headliner brightens the interior.

Two cabin layouts were available with the primary difference being the configuration of the galley, which in both is on the starboard side. The initial design placed the galley sink forward of the two-burner stove with the icebox aft of the stove. The second layout was a modification that served to increase the length of the starboard settee by moving the galley sink aft and inboard of the icebox. To accommodate this change, the companionway steps were offset to port. The majority of Bristol 29.9s were ordered with this modification.

To port of the companionway ladder is a decent-sized chart table. It faces

forward, with the the navigator's seat at the head of a quarter berth. A locker extends forward along the port side from the chart table above the settee.



Bristol 29.9

Designer: Halsey C. Herreshoff **LOA:** 29 feet 11 inches

LWL: 24 feet 0 inches Beam: 10 feet 2 inches

Draft (standard keel): 4 feet 4 inches **Draft (centerboard):** 3 feet 6 inches/

7 feet 6 inches

Displacement: 8,650 pounds Ballast: 3,600 pounds Sail area: 391 square feet SA/Disp. ratio: 14.8

Disp./LWL ratio: 279 Fuel: 19 gallons Water: 63 gallons Holding: 25 gallons A double door above the chart table and sliding panels above the settee will retain stowed items in a seaway.

The saloon table stows against the forward bulkhead. It has a Formica top surface and is sized to provide dining space for four. The port settee extends slightly beneath the chart table, making it long enough to serve as a berth. When the saloon table is stowed, the seat slides out, over a track forward and a swing-out support aft, to form a double berth. In the aft-sink galley configuration, the starboard settee is long enough to serve as a single berth.

The cabin sole is teak-and-hollyveneer plywood from the companionway ladder to the forward saloon bulkhead. A door offset to starboard provides access to the head and forward cabin.

In the head compartment, which spans the boat, the marine toilet is to port on a raised wooden platform above a fiberglass sole insert that follows the hull contour. The stainless-steel sink is forward of the toilet on a cabinet with stowage beneath. Drawers and storage compartments with sliding doors are fitted along the hull. An ample hanging locker is to starboard. Its location and the fiberglass sole insert make it a suitable place to hang wet gear for drying. The standard holding tank is 25 gallons.

A second door provides privacy for the forward cabin. The V-berth is more than 6 feet long and nearly 7 feet wide at its aft end. With the center insert in place, it serves as a reasonable double berth. This cabin has the same finish as the other living areas. Stowage is provided along the sides, enclosed behind sliding doors.





The galley is compact, at left, but the essentials are here: two-burner stovetop, sink, and top-loading icebox. The V-berth is just over 6 feet long and nearly 7 feet wide at the head, at right. The mahogany ceilings are attractive and give the cabin a warm feeling.

There are opening portlights on both sides in the head compartment and in the forward cabin. Ventilation below is an issue, however, because the saloon has fixed portlights and just a single overhead hatch and there are no deck-mounted vents. The opening portlights in the head and V-berth areas may be adequate in combination with the forward hatch, but the narrow door between that area and the saloon restricts air flow. Mold and mildew may be difficult to control without ventilation improvements, and guests in the saloon berths might find a warm night uncomfortable. The addition of efficient fans would be a welcome upgrade.

Propulsion

The original engine for the Bristol 29.9 was the ubiquitous gasoline Atomic 4, but diesel engine options were quickly made available. Most of these boats are equipped with Yanmar or Universal diesels. Rozinante has a 2-cylinder 16-hp Universal diesel. It's beneath the cockpit sole and access is somewhat restricted. The top, center, and bottomstep panels of the companionway ladder must be removed to gain front access to the alternator and enginecoolant cap, and a door under the galley sink provides the only way to get to the seawater pump for an impeller change. Checking the oil requires the panel in

Resources

Bristol Owners Association website www.bristolowners.org

Bristol 29.9

www.employees.org/~b299/index.htm

the starboard cockpit sail locker to be removed, which means moving all the gear stowed in the locker.

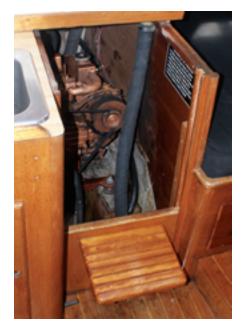
Access problems aside, Bryan and Gary report that the engine is reliable and able to move the boat at near hull speed in flat water. As we returned to port under power from our test sail, I thought the boat handled and tracked solidly and responded well to the throttle. I didn't have to pay constant attention to the helm to maintain a straight course.

Some prop walk is evident under power in reverse, but with sufficient sternway to make the rudder effective, along with judicious use of the throttle, the boat can be controlled well. Since the Bristol 29.9 displaces more than 8,600 pounds, an engine with slightly more horsepower would be better, especially in coastal areas where one frequently has to power into large seas and high winds.

Under sail

For our test sail, the wind blew a steady 10 to 12 knots. *Rozinante* tracked evenly and steadily on all points of sail. The fairly long fin keel and skeg-hung rudder provide very good directional stability. This configuration can sometimes result in a sluggish response to the helm, but I noticed no such tendency. While she did not spin in her

continued on page 63





Access to the engine is not very good. Removing the companionway steps reveals the alternator, at left, but the oil dipstick can only be reached through the starboard cockpit locker. As expected on a 30-footer, the head is small, at right, but it is well provided with storage spaces.

How a designer sees decks

There's more to their lines than meets the eye

by Robert Perry

A typical fleet of good old cruising boats will show tremendous variety in the design and layout of their decks. The typical fleet of modern raceboats will show a remarkable sameness and consistency in their deck designs and layouts.

A raceboat deck is relatively easy to design and lay out. The cabin trunk is narrow and very short and the cockpit is huge. There is a lot of room to lay out gear so the boat will operate at peak efficiency. The older cruiser most probably has a long and wide cabin trunk, a smallish cockpit, a plethora of hatches, and numerous other features designed to make cruising more comfortable. Unfortunately for this boat, the deck plan did not get much attention or priority in the design and development stages and the result can be a boat that is awkward to operate, uncomfortable, and not able to sail to its potential. In this article, I'll describe the process I use to design the deck of a cruising boat, working all the time to achieve a balance between aesthetics, safety, comfort, efficiency, and performance. My very first fiberglass molded deck was the Valiant 40, once called "a shoebox on a banana." Yes, it did not have the most graceful of cabin trunks, but I have learned.

Cruising boat design, for me, begins with the interior layout and a hull shape. Once the interior, the preliminary deck design, and the hull shape are nailed down, I can move on to designing the actual deck "lines." This drawing is similar to the hull-lines drawing in that it describes in great detail all the contours and dimensions needed for the builder to reproduce the shape I have drawn.

With a cruising boat, the deck design is largely controlled by the overall aesthetic goal for the boat and by the interior layout — where bulkheads are located will have a large effect on how the deck is laid out.

can get pretty hard to preserve. Toerails or bulwarks will take up space, stanchion bases take up space and, before you know it, you have lost substantial sidedeck. If you make the cabin trunk narrower, you may start losing headroom below where you need it for the accommodation plan to work. Some clients want a wide cabin trunk because it increases the feeling of spaciousness below. I like wide sidedecks and I do what I can to make them as wide as possible.

Builders from time to time will take shortcuts with deck shapes and the result can have a profound effect on the overall look of the boat. When I did the Baba 40, I had nice wide sidedecks until a dealer convinced the yard to make the cabin trunk wider. As usual, I did not find out the change had been made until I saw the modified boat. They gained no headroom and lost sidedeck, all to make the boat feel roomier below. Today, drawing with the computer, I can design the deck lines and print them out full size on Mylar. This will greatly reduce the chance of the builder deviating from my plan.

Where to place hatches is always a challenge. I want a hatch over each living area and I want the hatch to be big enough for someone to crawl out of in case of emergency. I like a hatch directly over the galley for ventilation while cooking and I like a really big foredeck hatch that I can get sails in and out of easily. Hatch locations also have to take into account running-rigging leads so an open hatch does not lead to a broken hatch.

Cockpit

With the cabin trunk defined, I can move on to the cockpit design. It's amazing how much cockpit volume modern designs with extra-wide sterns can have. The boat from the 1960s or '70s is not so well endowed. Sterns were narrower then and this drove the cockpit design. The choice of wheel or tiller also has a big effect on the cockpit layout.

Sidedecks and cabin trunk

My first job on the deck is to see how much sidedeck I can get. I almost always try for at least 24 inches on boats under 50 feet, but I don't always get it. I also don't make the cabin trunk parallel with the sheer in plan view. That's boring. I like to have the cabin trunk taper in from the sheer as it goes forward. I like the sides of the cabin trunk to gently roll inward as they go forward and I always use a changing camber for the cabintop. But that ideal 24 inches of sidedeck

By using a rendering like this one early in the preliminary design process, Bob can give his client an opportunity to see the aesthetic approach he is using.





A rendering made at an early stage of the design of this 57-foot ketch helped Bob and his client visualize the interesting and unusual feature of the two cockpits.

Some of my clients demand a bridge deck for safety reasons. Other clients want no bridge deck so there are fewer steps to the companionway. I have no personal preference, although sometimes the bridge deck will provide some volume below that you can use. If a boat is to be built in (or sold into) Europe, ISO standards place limits on cockpit volume and therefore influence how cockpits are designed.

I think long bench seats, so you can nap in the cockpit on a nice day, are a must. But, if you have a wheel, you may need a T-shaped cockpit well for wheel clearance and that can cut into the length of the cockpit seats. If you have a tiller, you can have your long seat but how wide should the cockpit well be? I think 22 inches is the best width for the well — it allows you to sit to weather and brace your feet on the edge of the leeward seat. But 22 inches is too narrow for most other cockpit functions, so here a compromise must be made.

Cockpit seatback or coaming height is almost always a problem. A client once asked for 15-inch-high seatbacks. I told him that was too high but, in the end, I had to admit they were very comfortable. But you now have a 15-inch-high step to get over when you leave the cockpit, and that's not very safe. I often try to carve away the coaming thickness in way of the access forward to make the step-over easier.

Aesthetics can also play a role in seatback height. A low coaming can be attractive but, if it gives you an 8-inch-high seatback, you will not be comfortable when that edge digs into your kidneys. In the end, I usually shoot for 12 to 14 inches but I will go no lower than 10 inches.

Sometimes, I stop the coaming short of the wheel or tiller so the helmsman will have no seatback and will essentially be sitting on the deck. I like this arrangement as it gives the helmsman the greatest number of options for sitting.

The designer must also take into account how the accommodations are spread aft under the cockpit and cockpit seats. This will impose headroom and clearance issues that may affect the heights of the cockpit sole and seats.

I usually make the cockpit well 17 inches deep and I like the seat tops to be 22 inches wide. I know that sounds like a lot but trust me on this one.

Cockpit-locker hatches have to be as big as practical so you can get large cruising items, like a deflated inflatable dinghy, in and out without too much effort. I also like a cockpit hatch with a false bottom so it's just a shallow pan for lines and winch handles.

Rigging and headsail sheeting

At this point the deck "blank" is pretty much finished. House contours have been defined, hatches laid out, and the

Virtual models

mong the many tools the computer has given us, 3D modeling is of special value. I often use 3D models of the deck in the preliminary stages of the design to make sure I am getting the look I want. If I have an unusual shape or feature, the 3D model can verify that my eye had it right. The 3D model also allows the client, who may have some difficulty reading a complex 2D drawing, to see a virtual photo of the boat. With an accurate 3D model, the file can be sent to a CNC machine where the patterns for the deck can be computer cut. Or the file can be sent to a shop where a giant milling machine will essentially carve the deck mold or plug out of a solid piece of foam.



Bob used this rendering of a close-up of the cockpit to help the client understand the geometry of the house overhang on the 57-foot ketch shown above.

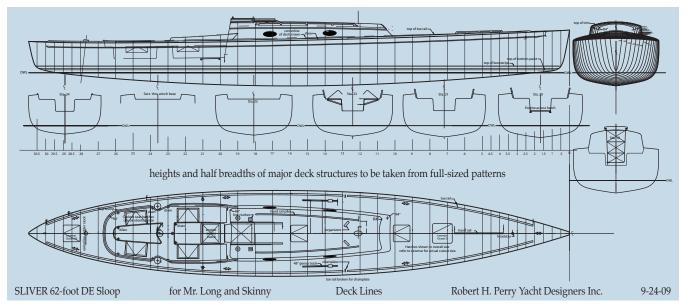
Cruising designs

cockpit is established. Now we can start the fun of laying out the essential gear that will make the boat easy to sail.

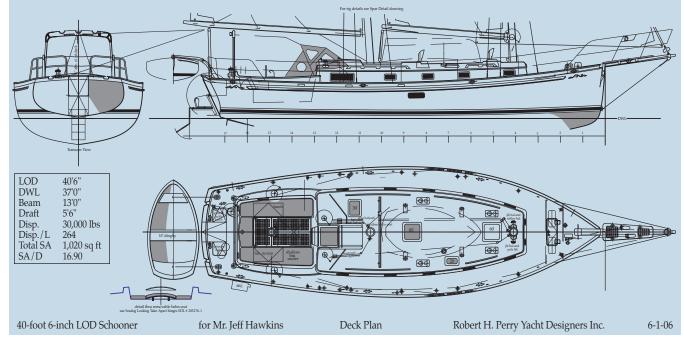
Let's start with the chainplates. The typical good old boat is probably a masthead sloop or ketch. If you want the boat to go to weather well, you are going to need your chainplates on a line 12 degrees off-center from the tack point of the jib. This generally puts your chainplates smack in the middle of the sidedeck. This is not so good. You don't want to come inboard because a narrow chainplate base can increase the loads on the rig dramatically. If you go outboard, you will not be able to sheet your genoas in tight enough to give you

good upwind speed. A modern fractional-rig boat often has no overlapping genoas, so the chainplates can be out at the rail without affecting upwind speed.

With big genoas, you also need to have a good long length of genoa track so you can get the correct sheeting location for each sail. I like to put the front of the track just forward of the mast and on a 10-degree line from the genoa tack. The aft end of the track will have to accommodate the genoa with the biggest LP on a 7-degree line from the tack, and I always add some length so the sail is not sheeting to the very end of the track. In a perfect world, I like another genoa track as far



A deck-lines drawing shows all the contours for building the deck. On this one, for a 62-foot double-ended sloop, all the major hardware items have been laid out so the builder will know where the deck core has to be removed for bolting down the hardware.



A schooner has its own deck-layout challenges but, on this one, there is room between the masts to stow a dinghy. Knowing this boat would not be close-winded due to the rig configuration, Bob put the genoa tracks on the bulwark cap so they are not underfoot on the sidedecks.

outboard as I can place it and slightly forward of the inboard track. This outboard track is very useful when reaching and you want to move the clew outboard and forward. If you have a roller-furling genoa, you may need to have a longer genoa track to accommodate the change in lead angle as you roll up the sail to reef it.

If the boat is cutter-rigged, the staysail tracks will most probably have to go on top of the cabin trunk to get a good sheeting angle.

I'm reluctant to get into the argument of where the mainsheet traveler goes. We all have our opinions on that. I like end-boom sheeting, so my preference is to have the traveler in the cockpit.

Winches and line leads

Winch placement is pretty much a matter of taste. I like the primaries to be close to the helm but still accessible from forward of the wheel. Secondary winches can be used for furling lines but most cruisers don't need them for spinnaker sheets unless they choose to do some racing. When I designed the Valiant 40, I brought all the halyards and reefing lines aft and each one to its own dedicated winch. That's expensive. Today, with line clutches, we can use two winches to handle multiple functions.

Although there are advantages, especially on bigger boats, to leaving the halyards on the mast, clients today seem to want all the halyards led to the cockpit. You end up with a lot of lines in a small space and a lot of clutter, but it is convenient. My big concern in laying out the winches is to avoid friction and too many lead changes in the lines. This is not hard to do on a racing boat. On a cruising boat with a busy deck it is a

challenge. I always insist on the builder having all the gear on hand before finalizing the deck. That way, the layout can be at least mocked up to allow leads to be corrected and winch placements adjusted for the best performance.

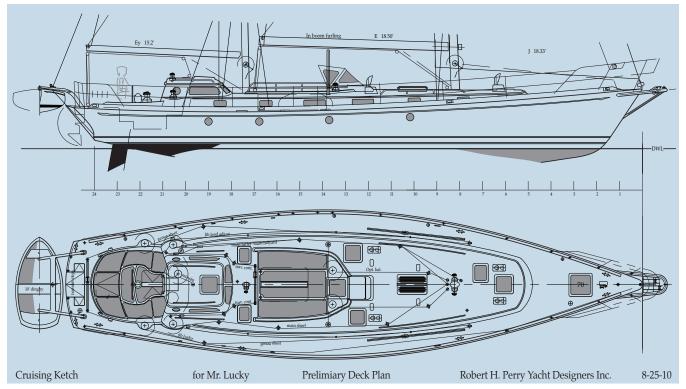
If you add a hard dodger to your boat, you may run into problems with your original winch placements. You need clearance for the winch handles. If you are designing a new boat with a hard dodger, you can work around the dodger, but it still makes winch placement aft difficult.

The final touches

At this stage in the deck design I can start sprinkling all the additional items the boat needs or the client requests around the deck. Some clients want the dinghy to be carried on deck. That's a challenge. Life-raft stowage is also difficult on a busy deck. Vents will go where I can find room and handrails where they will be within easy grasp. I may need to find room on the bow for the windlass and a deck washdown system is nice to have. Well-placed mooring cleats are a must.

When I think I am done with a new deck design, I'll send it off to my pal Don Whelan at Harken. He will go over my specifications for the gear and make the appropriate changes. Then it's time to show the design to the client — and the fun starts all over again as we enter the revision process. ⊿

Robert Perry is a contributing editor with Good Old Boat. His career as a yacht designer is now entering its fifth decade, which means it spans the heyday of the good old boat era and the age of carbon fiber, and from drawing with drafting pens to 3D computer modeling.



This cruising ketch has an unusual and complex deck with two cockpits and is a good example of why some sailors choose a custom design. The forward cockpit is for lounging and outside dining. The aft cockpit is snug for the owner and his wife when sailing.

Watermakers 101

Pressing pure water out of the sea

by Don Launer

O smosis is a natural process in which molecules of a liquid spontaneously pass through a semi-permeable membrane. The direction of flow across the membrane is from a liquid with a low concentration of dissolved substances (solutes) to one with a high concentration. The process can generate very high pressure, called osmotic pressure, on the side of the membrane occupied by the liquid with the high concentration of solutes.

Osmosis can be reversed when pressure higher than the osmotic pressure is applied to the liquid high in solutes. When high enough pressure is applied to salt water, for example, water molecules, but not the salt molecules, pass through the membrane to the low-pressure side. This principle is used in reverse-osmosis (RO) watermakers to desalinate seawater.

Reverse osmosis is similar to a membrane filtration system but with several differences.

Reverse-osmosis watermakers

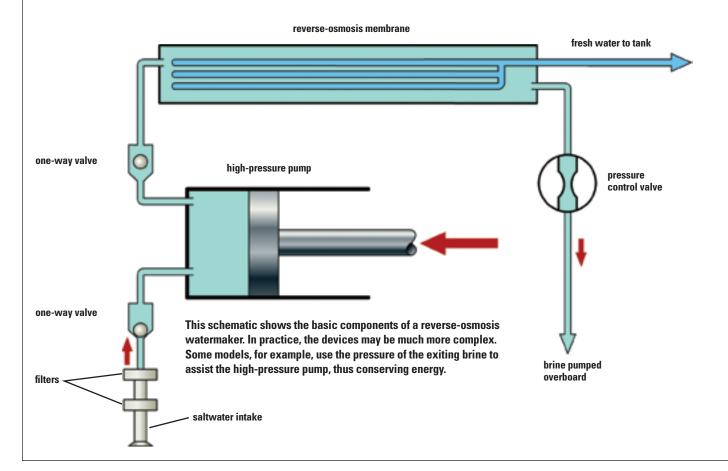
The primary function of an RO watermaker aboard a boat is to make potable water by removing salt from seawater. This is done by pressurizing salt water to 800 or more

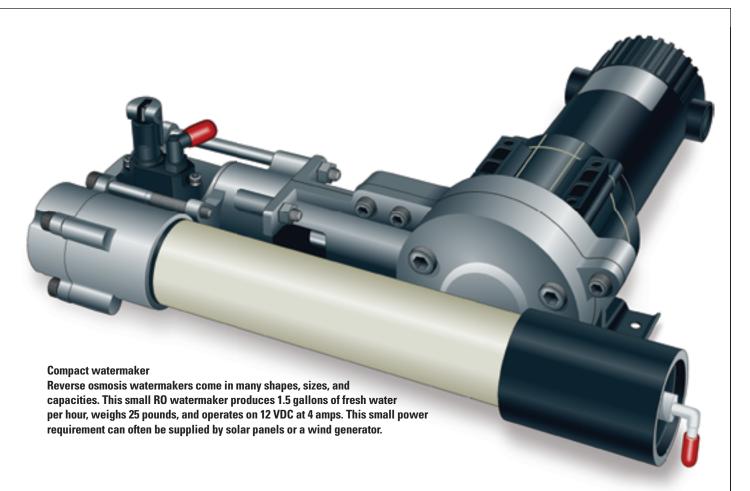
pounds per square inch (psi) and forcing water molecules through the semi-permeable membrane. The desalinated water is collected for storage and the salt water (now more concentrated) is discharged overboard.

In recent years, the cost, complexity, size, and power requirements of RO watermakers have been reduced to the point where even a small boat can take advantage of the technology. RO watermakers vary in size and capacity from small manually operated ones for use aboard a life raft to huge units weighing hundreds of pounds.

Watermakers are wonderful devices for offshore passagemakers. With the capability of making water, long-distance cruisers don't need large water tanks aboard. Reverse osmosis can have an added advantage for those who cruise abroad, where the quality of the water at some marinas may be in question and the price high. Coastal cruisers equipped with watermakers can eliminate trips to marinas for water.

Ocean water contains approximately 30 to 32 parts per thousand (ppt) of dissolved salt. An RO watermaker can reduce salt content by 150:1. The resulting drinking water will have 0.2 ppt of dissolved salt, a salt content that can't be tasted and is medically safe.





RO watermakers should not be used in harbors where pollution, oil, or chemicals might be in the water. Oil and chemicals will clog the primary filters and some chemicals, such as chlorine, may also destroy the membrane, requiring an expensive replacement. In addition, some viruses in

polluted water are small enough to pass through the membrane into the drinking-water supply. If the watermaker might be used where the possibility exists of germs passing through the membrane, an ultra-violet sterilizer is a logical addition to the system (and is a good option to choose in any case).

The stated production rates for RO watermakers are usually given for 70°F water. When the water is colder, the watermaker's output will be reduced.

Installation and maintenance

Installation of an RO watermaker requires two extra throughhulls to be fitted. One through-hull will be below the waterline, for the saltwater intake, and the second will be above the waterline, for the saltwater discharge. The intake through-hull should have an external strainer and the water going to the watermaker should then pass through two progressively finer filters. These filters require regular cleaning.

Some RO watermakers are available in modular form, which makes it easier to install the various components in available unused spaces aboard.

66 Some RO watermakers are available in modular form, which makes it easier to install various components. 99

A key component of a watermaker is a high-pressure pump. This can be belt-driven by the engine or, if it's a smaller unit, powered by the boat's batteries. If the boat has a generator, the pump can run off 120 volts AC.

All RO watermakers require

a strict maintenance schedule and operate at their best when used daily. If a watermaker is not used for several days, special maintenance procedures are necessary to protect the membrane, which means a watermaker is probably not practical for the weekend sailor.

During an extended passage, the watermaker's prefilters must be cleaned about once a week and replaced periodically. Also, the watermaker's O-rings and check valves should be replaced after 1,000 hours of use and the equipment should be cleaned annually. In addition, it's a good idea to periodically check the fresh-water output with a Total Dissolved Solids (TDS) meter to assure the unit is operating properly. Δ

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 34 years. He has written several books, including Navigation Through the Ages and The Galley: How Things Work, and frequently gives talks on the history of navigation.



A telegenic Mariner 36

Sparkle Plenty is an ongoing production

by Gary Miller

In marriage, politics, and business, a matchmaker is someone who puts people together, knowing the synergy or resulting match will make them productive as well as happy. One of *Good Old Boat* editor Karen Larson's secret weapons is the finely honed skill of a matchmaker. To prove it, here's an email I received from her introducing me to the subject of this story.

"Gary," Karen wrote, after an enjoyable get-together at the Annapolis Boat Show, "Tory Salvia's boat is a 1980 Mariner 36, *Sparkle Plenty*. I have a feeling that she does indeed sparkle plenty. In addition to being a lovely boat with great lines, I think this article has a wonderful people angle as well. Tory has done a very brave entrepreneurial thing with TheSailingChannel.tv. I think the two of you have much in common and will enjoy the interview and the sailing that goes along with telling the tale."

Talk about laying out the red carpet. And was she right? You bet. Tory is indeed a unique 21st-century entrepreneur as well as a skilled sailor and nautical storyteller. He welcomed me, replete with cameras and tape recorder, aboard *Sparkle Plenty* for a funfilled three-day Chesapeake Bay cruise.

Tory and his wife, Betty Sue, keep their boat at Leatherbury Point Marina in Shady Side, Maryland, a beautiful, well-protected sailor's haven on the Western Shore about a 25-minute drive from Annapolis. Tory and I were joined much of the time by Tory's sailing friend Bob Spann in his elegant 28-foot Alerion. The three of us talked of boats and boat design (especially about the Mariner 36), the weather (we sailed in everything from flat calms to blustery 20- to 25-knot winds, even a flat-out 40-knot thunderboomer on the final leg) and, of course, the concept of bringing good old boats like Sparkle Plenty back to life through plenty of elbow grease and electronic, mechanical, and canvas upgrades. Tory and Bob were wonderful cruising companions, making it hard to concentrate on getting this story rather than just messin' about.

Reassuringly solid

The first impression you get when boarding a Mariner 36 is that things are solid underfoot. Solid like an aircraft carrier. Tipping the scales at 17,000 pounds with an 11½-foot beam, Sparkle Plenty can take anything the wind gods dish out, especially with in-mast furling in addition to the usual roller-furling jib. Light-air performance, Tory admits, is not her strong suit, but in normal winds she moves with grace and aplomb and in heavy winds she roars like a freight train, a very comfortable and elegant one.

She has wide decks, a modern fin-keeled underbody, and beautiful New Hampshire craftsmanship in the interior joinery work. She is blessed with plenty of drawers, nooks, and crannies for storage. Designed by naval architect Peter Canning, her layout is fairly conventional with a V-berth and filler up forward, followed by a hanging locker and clothes drawers, the head on the port side, and a sink on the starboard side. The main

saloon has an L-shaped settee to port and straight settee to starboard. The U-shaped galley is great for bluewater cooking and opposite is a — believe it or not — small nav room where the skipper can work to make sure the blue water stays on the outside of the boat.

"This boat has good bones," Tory said when we started talking about his many renovation projects to bring the 30-year-old boat up to snuff. "When I purchased her, I had laid out three separate budgets. One was to look for and survey the boat. Two, to make the actual purchase and, three, to bring her up-to-date with replaced or improved systems. I did a lot of the work myself, but I was also not afraid to bring in an expert when necessary. The people I worked with were terrific, not afraid to share their knowledge, and they all made the process a learning experience."

Tory feels that's something you don't get with a new boat: an up-close and thorough knowledge of systems, details, and procedures. Increasingly, he says, most new boats are built from the inside out with little thought of how to get at wiring, fuel, plumbing, electrical, and other critical components. The modifications he made to *Sparkle Plenty* (probably more than he had originally planned) have given him useful knowledge on which to draw if something ceases to work properly.

Of all the projects Tory accomplished, one he had not planned on ensued after he found a small patch of flaking bottom paint. It was the tip of the proverbial iceberg and ultimately required the bottom to be stripped from stem to stern, new glass laid on, a new barrier coat and, finally, new hard-surface bottom paint. Apparently, the problem was due to a previous bottom job done wrong — resin failed to harden properly, leading to water penetration and voids in the hull. Luckily, the Mariner's hull is very thick.

On the positive side, *Sparkle Plenty's* previous owners had taken good care of her. Still, after 20-plus years, she was ready for a major refit.

An inside job

Repairing the bottom required that the rig be pulled so the vessel could go into a large temperature-controlled barn. With the rig down, Tory decided it was time for a rehab. The vintage 1980 Hood Stoway was one of the first in-mast

66 Like many boat projects, the engine replacement set off a new chain of dominoes. **99**

furling systems on the market. Tory was fortunate to find a local rigger who, as a young man, had helped construct these masts at the Hood plant in Marblehead, Massachusetts. The result was a likenew rig sporting fresh Awlgrip paint, along with new standing and running rigging and a new Furlex headsail furler. The rigger even mated a new Seldén line-drive winch to the mast so Tory could reef and furl the mainsail from the cockpit.

While the hull and rig were being refurbished, Tory turned to the interior and its four leaky Bowmar portlights and two small hatches located in the main saloon and navigation cabin. With guidance and help from a friend who possessed excellent carpentry skills and the necessary tools, Tory removed the portlights and hatches, refinished them, and replaced the foggy Lexan with new, gray-tinted Lexan. He also removed the water-rotted teak plywood and replaced it with epoxy-coated marine ply covered with white Formica. Once the refurbished ports and hatches were re-installed, all the leaking stopped.

Next, he pulled down the yellowing vinyl headliner and rebedded all the deck fittings. Eventually, he would remove more than 100 pieces of oiled teak trim for refinishing with five coats of satin varnish, add a solid white headliner, and refinish the cabinetry and bulkheads of the galley and saloon with gloss varnish.

A diesel deal

Shortly after the rig went back up, Tory got the opportunity to replace *Sparkle Plenty*'s aging 33-hp Universal diesel. A friend with a Pedrick 41 wanted to install a larger power plant and offered his old 44-hp Universal, with only 600 hours, to Tory for just \$1,100 (under the condition that Tory help him get the old engine out). The 44-hp got a new Teflon clutch plate, shaft, Cutless bearing, retuned three-bladed prop, and dripless shaft seal. Tory was able to sell the old engine for \$900, so it was a pretty sweet deal.

But, like many boat projects, the engine replacement set off a new chain of dominoes. Once the 33-hp was out, Tory did a complete rehab of the engine

compartment with new insulation and paint. Much of *Sparkle Plenty*'s electrical wiring in the engine compartment needed to be replaced. Tory decided to rewire the entire boat, this time with the wiring running "high and dry" along an existing wiring channel along the port side.

He hired a marine electrician who agreed to let Tory work as his helper. Over the winter months, they rewired all the boat's AC and about half the DC. Once the new Universal was in place, they installed a wiring harness, 130-amp alternator, separate regulator, and a 2,500-watt/130-amp inverter-charger—all connected to a computerized controller monitoring the four Trojan golf-cart house batteries and a high-cranking starter battery.

Over the years, Tory has completed many other projects. Major ones include a new chart plotter and sailing instruments, new propane locker, rehabbed teak cockpit grate, rebuilt traveler cars and strengthened bridge-deck mainsail traveler, davits, deck wash-down system, new faucets for galley and head sinks, several new through-hulls, new head, sanitation hoses, and holding tank.

Rare breed

Only 84 Mariner 36s were produced between 1979 and 1983. When Tory



Feature boat





With the table stowed on the bulkhead, Sparkle Plenty's saloon, at left, is airy and spacious. The white laminate headliner replaced aging vinyl. A full-width head compartment, at right, separates the forward cabin from the saloon.

sees another one, it's an occasion for celebration. He says it's a real "sleeper boat" but one he's proud to own, certainly one visitors ooh and aah over. A number of boats called Mariners were built in the Far East but, Tory says, these were birds of a different feather.

A televisionary

Shortly after purchasing Sparkle Plenty, Tory, who had more than 30 years' experience in media production, realized that television and video were not far from being delivered on a mass-consumption basis via the Web. It had been a hollow promise for many years, but a culmination of time and technology, as he puts it, made it clear the Web would soon be ready for TV and video. And Tory would be ready for it with TheSailingChannel.tv (TSC).

Like many of the Web's success stories, this one would take years of work before it could be declared a

winner. Tory was ready to invest a lot of time, energy, sweat, and tears in making TSC a reality for him and his viewers. He kept his day job for a while, but his enthusiasm for sailing and his skills as a storyteller eventually turned TheSailingChannel.tv into a full-time and profitable job. In his own mind, Tory never had a doubt. A less driven person would never have made it.

Tory's behind-the-scenes support team was there every step of the way. Betty Sue had been instrumental in keeping his earlier TV/film/videoproduction company cooking and she helps out with TSC as well. Sons Peter, 32, and Jon, 29, are also accomplished video editors in their own right. Both work as video producer/editors in Washington, DC, and work with Tory on productions for TSC.

The Sailing Channel.tv is a potpourri of sailing television programming — videos on making the ICW trip, building a steel

sailboat, cruising the Virgins, heavyweather storm tactics, cruising with notables like Lin and Larry Pardey, and dozens of other topics. There is a PBS series called Adventures In Sailing that Tory co-produces with WPBT2 in Miami (that Tory says put TSC "on the map"). What's great about TheSailingChannel. tv is you can order DVDs or, for much less money, simply download a video in QuickTime or Windows Media formats.

Also on the website is a short "music video" of the Good Old Boat crew singalong at the 2010 Annapolis boat show, with the matchmaker, er, editor, singing along enthusiastically. Δ

Gary Miller is a cinematographer/ producer/writer/editor whose real fun comes from sailing with his wife, Ann, in their restored 35-foot Pearson centerboarder named Viridian, out of City Island, New York. See Gary's work at <www.wordsandpixels.com>.





The U-shaped galley on the Mariner 36, at left, is a little tight but plenty seaworthy. Its glossy varnish is a result of Tory's lavish attention. Tory checks the engine, at right, which he obtained on very reasonable terms from a friend.

Measuring the Mariner 36

... against its cruising contemporaries

by Ted Brewer

he long waterlines, moderate draft, husky displacement, and modest sail area of both the Mariner 36 and Pearson 36 are a solid indication that their designers intended these two yachts as family-oriented cruisers for coastal and bluewater voyages.

The Pearson was built as a true cutter, complete with staysail stay and running backstays, and her cutter rig has definite advantages offshore.

Alan Gurnev's Islander 36, with her lighter displacement and good draft, fits more into the "performance cruiser" category, as one would expect of the designer of the famous, recordsetting 73-foot ketch Windward Passage. Islander Yachts did offer an optional 4-foot 9-inch draft on the 36, and this might be the better choice for the shallower waters of the East Coast and Gulf of Mexico. Even with the reduced draft, the Islander would still be a very good performer in light to medium weather due to her ample sail area/displacement ratio.

The Mariner 36 should have good form stability, given her 11-foot 6-inch beam, but the ballast ratio is on the light side. This is probably due, in part, to the fact that Mariner built heavy, solid yachts, as I know well from experience with their work on my Mariner 47 design. Still, if I were heading far offshore in a Mariner, I would be tempted to add another

600 to 700 pounds of ballast deep in the bilge and well strapped down, just for the peace of mind.

The Pearson promises to be the stiffest of the three yachts, having ample displacement, good beam, and greater draft than the Mariner and a generous 41 percent ballast ratio. The deep-draft Islander should be fairly close to the Mariner in stability, but the shoal-draft model — with even less draft than the Mariner, a narrower beam, and lighter displacement appears to be the least powerful of the three yachts, although still quite capable of offshore voyages.

It's rather surprising that the Mariner and Pearson have such modest sail area/ displacement ratios. Given their beam and displacement, they are somewhat under-canvassed and, to my way of thinking, could easily carry as much as 60, or even

70, square feet more sail. Being slightly under-canvassed is not a major fault in a yacht intended for family bluewater voyages, of course. Still, in many of our coastal areas where light summer breezes are the norm, it could leave the skipper whistling for a wind and firing up the iron breeze while he waits for Aeolus to answer his prayers. The Islander, with lighter displacement and undoubtedly less wetted area, given her beam and waterline, should slip right by the others when the breeze turns soft.

Things are different at sea, of course. Having a moderate, easily handled rig is a very handy thing on a short-handed cruiser. In her day, the Islander 36 was designed as a serious cruiser/racer. For racing sailors, taking an extra day to get from A to B was simply unacceptable, but an extra day on a long voyage is rarely a major problem for the average cruising skipper and crew. There, the primary concern is to get from A to B in safety, regardless of wind and weather. That is where the stronger and more versatile cutter rig of the Pearson stands out.

Both the Mariner and the Pearson show very well in the motion-comfort department due to their husky displacement. Both have comfort ratios approaching those of many larger boats, including my Whitby 42 design. Surprisingly, the

> Islander is not all that far behind them, thanks in large part to her shorter waterline.

I know that at least one Islander 36 has completed a circumnavigation . . . solo! I am not aware if either a capable of cruising the seven

Mariner 36 or Pearson 36 have circumnavigated but I feel certain that, given a knowledgeable skipper and crew, they are both quite seas in safety and comfort. These are three fine designs, all well suited to their intended purposes. 4 Ted Brewer is a contributing editor with Good Old Boat.

Islander 36 Mariner 36 Pearson 36

Mariner 30	isialiuei 30		reaisuii 30	
	Mariner 36	Islander 36	Pearson 36	
LOA	36' 0"	36' 1"	36' 5"	
LWL	30' 1"	28' 3"	30' 0"	
Beam	11' 6"	11' 2"	11' 5"	
Draft	5' 0"	4' 9" or 6' 0"	5' 6"	
Disp.	17,000 lb	13,600 lb	17,700 lb	
Ballast	5,650 lb	5,600 lb	7,300 lb	
LOA/LWL	1.20	1.28	1.21	
Beam/LWL	0.382	0.395	0.381	
Disp./LWL	259	269	293	
Bal./Disp.	0.33	0.41	0.41	
Sail area	595 sq ft	575 sq ft	615 sq ft	
SA/Disp.	14.4	16.2	14.5	
Capsize no.	1.79	1.87	1.76	
Comfort ratio	31.7	27.4	33.2	
Years built	1979-83	1971-86	1976-82	
Designer	Peter Canning	Alan Gurney	Bill Shaw	

He is one of North America's best-known yacht designers and over the course of a long career he has imparted his knowledge and love of sailboats to a great number and variety of designs, from pocket cruisers to ocean greyhounds. Many of them may now be older, but they are still good.

Exterior improvements

A new classic toerail

Procrastination pays off in mahogany and bronze

by Stephen Thompson



The original toerail resisted Stephen's attempts to rescue it so he cut it either side of the bolts, at top, and removed it in pieces, above.



Stephen found a shape that would work for most of the length of the toerail, above.

he restoration of the Vera May, the 33-foot Hallberg-Rassy Mistral that I belong to, began about four years ago. After moving her into the warehouse/ refit shop, cleaning her up a bit, and removing all the deck hardware, I decided her partially rotten toerail should be removed and repaired. Like many of my well-intentioned plans, this one seemed simple enough at the time. However, this was my introduction to the holding power of adhesive sealants.

What started out as the removal and reconditioning of two long boards turned into a cutting frenzy with a circular saw. I got the toerails off...but in a multitude of 6-inch pieces, which I individually identified by their original locations and stored in boxes marked starboard and port. The old "left brain/right brain dyslectic thing" had happened again: recklessly tear things apart then carefully record what you did.

For the next two years I pondered about how I was going to fix it.

For a time, I considered an extruded aluminum toerail, but that was expensive, didn't really fit with the hull-to-deck joint, and wasn't going to add that touch of class that a nice wooden toerail does. Furthermore, when investigating the pieces of the old toerail, I noticed that, as it ran the length of the boat, its profile progressively changed to conform to the deck angle and to align with the surface of the hull. This greatly increased my respect for the shipwrights of the early 1970s as, to accomplish this, somebody had hand-planed a continuous 34-foot board. That skill would be hard to find. It was not something I wanted to stumble up the learning curve on.

Shaping simplified

After a move to Houston and finding an ample supply of Honduras mahogany, I decided to produce a number of toerail cross-sections on my table saw





Because he was using 10-foot lengths of mahogany to make his toerail, Stephen had to join them or leave gaps between them. These bronze rail chocks were the perfect solution.

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Stephen started fitting the toerails at the bow, at left. To bend the 10-foot lengths to the deck line, he used a handy billy, center and at right. After purchasing a plug cutter, Stephen used it prolifically, below, and plugged over the countersunk heads of the toerail bolts, at bottom.

and place them on the boat to see if I could find a single profile shape that would work reasonably well in all locations. To my surprise, I found one that did look pretty good everywhere except for the first 4 feet at the bow. This meant that I would only have to hand-plane a couple of short pieces and somehow blend them into my standard profile shape.

With this game plan, I purchased some beautiful ¼ mahogany boards (*Note: Yep, ¼-inch boards. –Eds.*) from Houston Hardwoods and began making 10-foot lengths of my standard toerail profile. Ahhh, the joy of making sawdust in the garage and tracking it through the rest of the house! However, I was still concerned about how I was going to scarf these boards into a single rail for each side and how I was going to mount such a long and unmanageable thing on the boat without a lot of help.

I figured the installation required that each toerail be dry-fitted, drilled, bolted to the deck, removed, then remounted with 3M 5200 sealant/ adhesive, and the bolts reinstalled. I didn't want to do all that with two 35-foot pieces, so I thought about fitting the 10-foot lengths and simply leaving gaps between them.

Reading about someone else's toerail adventure online, I noted that he was using an integral rail chock from Hamilton Marine. Here was the solution to a number of problems! The chocks could act as my toerail joints, hide the transformation from the bow section to the standard

profile, and enable me to install the toerail in 10-foot sections! That these chocks were made of bronze and would enhance the toerail appearance was a bonus. All I needed to do was shape the ends of the toerail boards to fit the integral chocks.

I studied the locations of the hull-to-deck joint bolts and determined that an 8-inch mounting-bolt spacing in my toerail would miss the majority of the hull-to-deck bolts. I drilled and countersunk holes for the new 5/10-inch stainless-steel bolts from West Marine on all the boards, then chiseled the ends of the boards to mate with the bronze rail chocks. After dry-fitting all the components on the shop floor, I was ready to begin dry-mounting the toerail on the *Vera May*.

Bending and bolting

Beginning at the bow, I installed the special forward pieces by bolting them at the bow and drilling and installing each bolt as I moved aft. Next, I loosely mounted the first rail chock. To this point the toerail was almost straight, but bending would soon be involved.

I was initially concerned that the dry lumber would not take the bend and that I might have to steam the boards. However, I found that by fixing one end with the first two bolts and using a handy billy block and tackle to hold up the far end of the board and pull it inward, I was able to create the right curve before drilling each successive hole.







Exterior improvements

I progressed along the sheer, drilling each hole in turn and inserting a bolt to hold the curve as I moved to the next one. It went remarkably fast and was a fairly easy job for just one person. However, this was just a dry-fitting to correctly position the bolt holes in the deck. I had to remove everything so I could reinstall it with that amazing 5200 sealant/adhesive. This time, though, it was going to be working in my favor.

The installed toerails already looked great, but I still had the countersunk holes to plug. I purchased a plug cutting tool from Lee Valley Tools and used some of the extra toerail material to make bungs that were sure to match. I drilled the plug cutter into a board just a little thicker than the plug depth, then cut through the board with the band saw to to free the plugs. This went so well I made extras. I epoxied the plugs into the toerail holes and sanded the top smooth. The finished toerail presents just the right classical highlight I had been dreaming about.

Last but not least, I had to create the aft or, as I call it, the "booty rail" (as in "shake your booty"). This had a significant arc to it, and I had noticed the original was made of vertical laminations. I decided to follow Hallberg-Rassy's lead and cut a number of 1/4-inch strips the height of my standard toerail profile. I epoxied three of them together while clamping them to blocks on my workbench to form the required curve. Then, over a few successive nights, I laminated additional boards with a taper cut on top so the outside of the curve would slope down at the same

angle as the transom. Clever, eh? Well, not really. When I went to mount my beautiful booty rail on the boat, I discovered that the deck was not flat, like my workbench, but crowned! There's nothing quite like owning a belt sander and getting that itchy fiberglass feeling.

This refit had begun with a cutting frenzy and ended with a sanding mania. Nevertheless, I got the booty rail to settle in and it's mounted with bunged bolt holes along with a healthy amount of that forever 5200 sealant. All that's left is a little finish sanding and some varnish. Ahhh, the joy of a procrastinated job well done!

Next, I think I'll rebuild the cockpit and then surface the deck. Seems simple enough $\dots \mathcal{A}$

Stephen Thompson is a professional

mechanical engineer. Sailing on inland lakes as a boy had its effect and, at 50, Stephen successfully built a small sailboat from scratch and caught the bug once again. Vera May is now restored and has been launched. Stephen sails her on Galveston Bay and the Gulf of Mexico.

The rail chocks make a tidy transition between the sections of toerail, below, and with a coat or two of varnish, the toerails begin to take on that sought-after classic look, at right.



The "booty rail" caps the transom.



Resources

Houston Hardwoods

www.houstonhardwoods.com

Lee Valley Tools

www.leevalley.com

Hamilton Marine

www.hamiltonmarine.com

West Marine

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www.westmarine.com

For suppliers of related materials and tools:

www.goodoldboat.com/resources_for_ sailors/suppliers_directory



A fresh new deck

Synthetic teak covers a patchwork of repairs

by Eric Swisher

fter twice repairing the deck in areas with wet core in as many years, finding yet another area with soggy balsa made me look for a more durable solution. *Wings*, my 1970 Redwing 30 (a model featured in *Good Old Boat*, January 2000) has a well-made hull that has withstood the test of time, but the deck was showing signs of its 40 years of exposure to the weather.

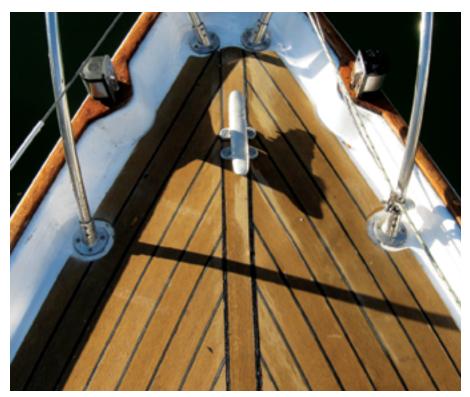
Kris Ramsingh of BoatWorks & More had been repairing fiberglass in Trinidad for most of his life. Luckily for me, he moved to Virginia, so I recruited him to help.

We had made the earlier deck repairs by grinding out the old fiberglass, replacing the wet balsa core, and reglassing the affected areas. To finish those areas, Kris created a reverse mold of the original deck's diamond-pattern non-skid.

To make his mold, he cleaned a section of non-skid and applied a heavy layer of wax. He brushed on gelcoat and allowed it to cure. He then pressed fiberglass cloth wetted with resin onto the gelcoat. Once it cured, he lifted off the fiberglass with the gelcoat casting of the non-skid attached.

After repairing an area of the deck, he would apply gelcoat to the surface and vacuum bag the heavily waxed gelcoat reverse mold on the new gelcoat. When the gelcoat cured and he lifted the mold, the transition from old to new was almost imperceptible.

Having learned from these previous repairs, I took some time to choose a better solution for the third round of deck work. Replacing the entire deck with traditional fiberglass over balsa,



TekDek synthetic teak proved a practical solution to the problems of an aging deck.

followed by gelcoat, would be costly and time-consuming. And replacing the core from below was simply not on my list of options. After researching deck materials, I decided to go with synthetic teak because the technology and technique made sense.

It was not an easy decision. I am a purist at heart and since *Wings* did not have a teak deck originally, I was reluctant to alter her construction.

However, loyalty to tradition had not stood in the way of a CD stereo system, wheel steering, and a roller furler on the headsail. Practicality won, and I began to plan for a synthetic teak deck. My hope is that a more impervious material will make this my last repair for a while.

There were several options on the market: TekDek, NuTeak, Unique Teak, Flexiteek, and PlasDECK. We ultimately used TekDek Flexible, a colorfast and UV-stabilized PVC composite that its manufacturer claims is low-maintenance and durable. It's reportedly stain-resistant, tolerates power washing, and requires no sealant. It's assembled using a tongue-and-groove

edge. The product is sold in 10-meter rolls and 2.25-meter strips.

You can have the deck delivered prefabricated, in which case you can follow the instructions for templating on the TekDek website. We elected to buy the product in rolls and assemble the deck ourselves. This approach costs substantially less, but I would likely purchase the deck ready to install if I were to do it again. The tongue-and-groove material is not difficult to assemble, but creating a professional appearance is time-consuming.

The devil is in the details: beveling the edges, cutting out areas to accommodate deck fittings, and creating a border. Through most of this project, I found myself wishing we could just

Resources

www.nuteak.com www.tekdekusa.com or www.tek-dek.co.uk (more product detail) www.plasdeck.com www.flexiteek.com www.unique-teak.com

Exterior improvements

roll out the new deck and glue it down: 1-2-3 done. But that was just fantasy.

Template first

We used heavy brown wrapping paper to make templates for the deck and cockpit. Templating a large area is cumbersome and 40-pound brown paper is easier to manage than plastic and more forgiving than cardboard. It helps to practice in smaller areas, such as the cockpit sole, before running paper the entire length of the deck. We creased the paper to make impressions around the edges and traced cutouts for the stanchions, fill caps, and standing rigging. Once the template was back on dry land, it was easy to cut with scissors. I then took the pieces back to the boat for a fitting and accuracy check.





Kris used the template to fashion the PVC deck in sections. Cutting the material to match a template requires a box cutter, but that leaves a cut edge with an unattractive shiny plastic appearance in some spots. We sanded these irregularities along the cut edges to create a smoother contour and followed that by sanding with 100-grit sandpaper, which gave each cut edge a rougher, more authentic wood-like texture. With the help of a heat gun, we were able to bend the sections to match the curvature of the deck.

Prepping the deck

After removing all the non-rigging hardware, we ground the entire deck flush to smooth out the non-skid. Since we were installing the new deck on top of existing fiberglass, a perfectly sound deck might have made this the end of our preparation. However, we had to first grind out several areas with wet balsa core, the problem that had led to this solution in the first place.

Ultimately, we removed all the fiberglass and core from the cockpit sole and several more areas amidships, both port and starboard, that were each approximately a square foot in area.





Grinding out the old deck was effective, but collateral damage to adjacent areas not covered by the new deck required additional cosmetic work. A more precise approach might have been to make shallow cuts through the top skin of the deck with a circular saw, then remove the skin to access the wet core.

Once we'd removed all the wet core, we left those areas open to dry thoroughly. Kris repaired the defects by laying fiberglass mat and polyester resin over new balsa core material. We used microballoon filler to make the deck repairs flush with the original deck and sanded the deck fair.

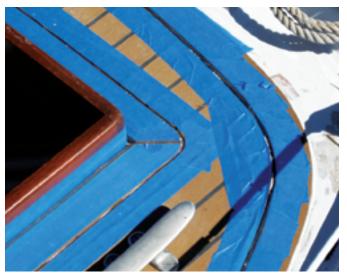
Wipe, glue, and caulk

When we were ready to start laying the decking, we wiped the entire fiberglass deck clean with acetone. Kris then assembled the PVC deck sections on the boat and installed them with TekDek adhesive TD-5620/23.

The TekDek rolls were several "planks" wide, so the larger areas did not have many joints that required caulking. Where one templated sheet met another, we taped the joint edges and caulked using black TD-5612-B supplied by the manufacturer. Running



Before the TekDek could be installed, hardware had to be removed and the deck sanded smooth, at left. Kris cut sections of TekDek to the template, laid them out, and figured the joints, center. Taped together, the cockpit sole pieces await assembly on the boat, at right.





To make the synthetic deck look traditional, Eric and Kris fashioned margin pieces around the edges. Using wide masking tape let them caulk the seams without making a mess, at left. The king plank on the foredeck is a nice touch, at right. Note how flexible the material is.

painter's tape along the joint edges allowed us to neatly inject black caulk where needed and smooth the caulk line flush with a spreader. This worked fairly well and wider tape made for easier cleanup: any excess caulk that extended beyond the joint could be lifted off with the protective tape. We sanded the synthetic teak with coarse sandpaper to remove any wayward adhesive or caulk.

With the decking secured, we scraped off the adhesive that had extruded from the edges. Then we ground and sanded the edges of the TekDek to a bevel. We also used 100-grit sandpaper to scuff the PVC deck surface slightly for a more realistic teak appearance.

In use, I've learned spills can be removed with coarse sandpaper and dings (such as with wood or gelcoat) don't happen. My only complaint: it's very hot underfoot.

Collateral cosmetics

The new deck looked great but, by comparison, the 40-year-old gelcoat adjacent to it did not. The grinding process had exposed the original fiberglass and it was unsightly. It was going to be necessary to restore the gelcoat on the deck.

Fortunately, gelcoat repair is another of Kris' specialties. In the December cold, we mixed gelcoat and brushed it on the sanded deck margins. The weather slowed the curing, but this proved a blessing for someone working as slowly as I did when gelcoating for the first time.

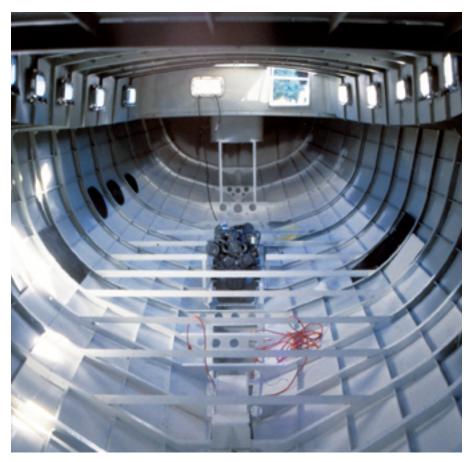
Once the finished gelcoat was wet-sanded, it looked bright and fresh. Unfortunately, the deck now looks so fresh I feel obligated to respray the gelcoat on the cabin trunk!

Eric Swisher is an Ob-Gyn in Roanoke, Virginia. He sails his 1970 C&C Redwing 30 on Smith Mountain Lake as well as a Hunter 33 on the Chesapeake Bay with SailTime. He often sails with his 6- and 8-year-old daughters who quickly learned to straddle the cockpit with a foot on each bench so they can see over the wheel and steer.





Scuffed with 100-grit sandpaper to give it a more "natural" look, the synthetic deck, at left, looks remarkably like the real thing. The preparation involved grinding the old deck surface. This left some areas damaged, at right, and they became the target of the next stage of the project.





Making

Stave off rust with

teel is probably the most misunderstood boatbuilding material — especially in the USA. Many people (so-called experts included) view steel yacht construction as a recipe for disaster due to the effects of corrosion and electrolysis. Nothing could be further from the truth. Bare steel placed in a vacuum will never rust (due to the absence of oxygen). Isolated from electric currents under laboratory conditions, steel will never undergo electrolysis. How you effectively isolate steel from the environment and stray electrical currents in the marine environment is the key to preventing these problems.

by Robert M. Brown III

Iron Mistress, seen here at anchor in Nuku Hiva, at right, has survived 25 years and has sailed around the world. Robert melted wheel weights for her ballast, below and at left, and took steps to ensure her longevity from the time she was a bare hull, above left.



steel boats last

diligence, coatings, and care

Iron Mistress is a custom-modified 45-foot round-bilged steel cutter designed for me by Ted Brewer. The design is based on his popular Corten Schooner design. She was built of mild steel to avoid the pitfalls of COR-TEN steel, which was popular at the time of Ted's original design but later proved to be a bad material for use in seawater. Her bare hull and deck were built by Mooney Marine of Deltaville, Virginia, and I finished her out from there. Paul Rollins, a master wooden-boat builder in Maine, built the basic interior, which I then finished.

I painted her, built and designed all her systems, and did most of the stainless-steel welding and fabrication. I installed all the electronics, as well as the refrigeration/freezer system, the engine and running gear, her rig, and the thousand and one other things that go into making a yacht ready for the open sea. I even melted down 11,000 pounds of wheel weights in custom homebuilt molds to form the lead ingots for her ballast. I have put more than 10,000 hours in her and spared no expense in her construction. All the time, effort, and money put into Iron Mistress created a strong, beautiful, and seaworthy yacht that took two of us - my wife, Elyse, and me — around the world between 2003 and 2008. We suffered no breakdowns of anything other than our watermaker, which gave up the ghost at the end of our trip.

Many "experts" state that steel has a finite lifespan. This is technically



The engine in *Iron Mistress* can be extracted to allow access for inspecting and spot-blasting the bilge.



Boat construction

incorrect if a proper paint system is maintained. It's true that even the most meticulously maintained steel boat has maintenance issues with its coating systems (to think otherwise is naïve), but this is usually due to inaccessible areas that cannot be maintained or inspected, damage, age, or initial preparation that was not 100 percent correct.

Coating systems

Protected with modern two-part epoxy primers over-coated with polyurethanes (polyurethanes must be used above the waterline), steel will have a yacht finish that will rival any fiberglass boat with regard to fairness and appearance and will outlast anyone reading this article. As with all painting, preparation is the key. This is especially important with steel construction.

Although there are many methods for preparing and maintaining steel, the best way is to sandblast with a product that leaves a good profile (the microscopic pattern left behind to hold the paint). I use Black Beauty sandblasting medium. The newly sandblasted

surface should then be coated with either "flame sprayed" molten zinc (usually only for new construction) or an inorganic-zinc primer, which is more economical and can be applied by anyone. I have used an inorganic-zinc primer, also known as cold galvanizing, with excellent results. The theory is that, if the original topcoats are scratched to bare steel, the zinc will sacrifice itself to save the steel.

The next step is tie-coat primers (which aid in the adhesion of the other topcoats) followed by barrier-coat

A word for metal hulls

by Ted Brewer

obert Brown's article is essential reading for anyone considering building or buying a steel yacht, and much of it is good advice for those considering an aluminum yacht as well. *Iron Mistress* is now more than 25 years old. There's no reason she cannot go on for 25 more years, given the care and maintenance her owner has lavished on her. To my pleasant surprise, the very first of the Corten design, an amateur-built schooner launched in the mid-1970s, was still going strong under the care of the builder's son when I heard from him a couple of years ago.

Steel is definitely a practical material for yacht construction. It is a very strong and forgiving material as well, as Robert points out. I saw my first proof of the strength of steel in the late 1960s, when we imported a 30-foot steel sloop from Beisterwerft in Germany. The boat

was carried as deck cargo and, when the cradle collapsed in an Atlantic gale, the little yacht slid around the freighter's deck for hours, smashing into hatches, winches, and bollards before she was secured. When I first inspected her, she looked as if a Caterpillar tractor had climbed all over her starboard side. Nevertheless, the only hole in her hull was a slightly parted seam up near the sheer, small enough that it could have been plugged

with a handkerchief. The boat was launched, found to be watertight, and towed away to be sold, presumably for scrap. Instead, she was bought by a man who owned a small metalfabricating shop and a year later that sloop was launched and looked like new again.

Only a metal boat could take that beating and survive; a wooden or fiberglass craft would have ended up as a collection of shards. The reason that metal vachts, both steel and aluminum, can take such a beating is that metal stretches, unlike wood or fiberglass. Indeed, I have seen an aluminum trawler grounded on a rocky beach and pounded by a storm come away without a hole. A large rock was protruding from her hull but, when it was pried out, the metal was intact and had simply stretched enough between the frames to hold that rock.

However, steel, and some aluminum alloys, corrode rapidly in seawater unless well protected. I saw a number of steel yachts corrode away far too quickly in those years of oil paints. In the mid-1960s, I surveyed two lovely Dutch-built steel 40-plus-footers, one a beautiful Rhodes design, that were so badly corroded I could stick a sharp screwdriver though their hulls in a number of spots. Neither of the costly vessels was more than 12 to 15 years old, and neither was fit for anything but the salvage yard when I checked them over.

On the other hand, another 42-foot sloop, also built by Beisterwerft and that we imported used in 1968, survived quite well for many years and is now undergoing a refit. After we imported her, she spent most of her life in the fresh water of the Great Lakes and that does make a difference.

The things that make a much bigger difference in the life of a steel yacht are modern epoxy coatings, epoxy paints, and cold-galvanizing materials. All these, and careful attention to the electrical system as Robert outlines in his article, can give a well-built steel yacht as long a lifespan as a fine fiberglass yacht. What's more, the owner will have far less to worry about when an angry whale decides to play soccer with the hull.



With modern coatings and TLC, a steel hull need not suffer this fate.

underwater epoxies. This method is the gold standard and will protect steel indefinitely as long as the coating system is maintained. There are many coating systems on the market. I have used Devoe epoxy products and AwlGrip polyurethane topcoat products for *Iron Mistress* with good results.

Maintaining the protection

Accessibility is essential in steel boats, especially in the bilge area. On *Iron Mistress*, I have total access to the bilge area, making it easy to inspect and perform regular maintenance. All the water tanks and the engine can be removed easily for maintenance.

Another thing to look for is limber holes. If your boat does not have them, cut or drill holes in all the frames so any water that gets into the boat (and it will) can drain into the bilge and not create pockets of standing water.

When I see an area of corrosion, I use a needle gun, a device run off an air compressor that is used to chip old paint away. I then spot blast with a portable sandblaster (available at any auto store) that can be run off a scuba tank or small compressor. Finally, I paint the area with the protective paint system I mentioned earlier.

When you just can't sandblast for any reason, you can use OSPHO, a phosphoric acid that converts minor rust scale to an inert substance that can be painted over. I have used this process occasionally on small spots with fair results, but sandblasting to bare steel is the best way to go.

If you are looking for a used steel boat, be aware that you're in for a rude awakening if the boat was not built from the keel up with future

66 Initial construction by a reputable builder or skilled detail-oriented craftsman is essential for longevity. 99

maintenance in mind or if it was not properly prepared and coated in the first place. Initial construction by a reputable builder or skilled detailoriented craftsman is essential for longevity. Otherwise, you will quickly understand the old saying, "rust never sleeps."

Don't be discouraged, however. I have redone the bilge in *Iron Mistress* only twice in 25 years . . . and it still looks new. Also, other than the bottom, which I recoated with new epoxy in New Zealand in 2006, she still has the original epoxies (inorganic zinc, tie coat, and barrier coats) underneath with no corrosion!

Stainless steel in construction

One of the best ways to eliminate or at least reduce corrosion above the waterline is to use extensive amounts of 316L marine-grade stainless steel where possible. In fact, the old steel BT Global Challenge one-design boats were designed with mild-steel hulls and stainless-steel decks. This is the ultimate combo, but it's expensive. For the rest of us, stainless steel can be easily welded to mild steel in high-wear areas or areas that are hard to get to. On Iron Mistress, for example, all the hatch coamings, the windlass base, stanchion bases, chainplates, and so on are made of stainless steel — these are painted and require no further maintenance. If you buy a used steel boat,

you can retrofit it with stainless steel in these areas using TIG welding.

Don't let water in

While at Patten's Boatyard in Eliot, Maine, right before we left for our circumnavigation, we noticed a steel boat that had just come in from Trinidad. It was a 10-year-old high-end professionally built boat from England. The new American owner was proud of her and told me the surveyor in Trinidad (where he bought the boat) had said the grapefruit-sized blisters around the anchor locker were only cosmetic. I told him I thought he might have a serious problem. Soon afterward, the yard pulled his boat and put her next to *Iron Mistress*.

The next morning, we checked out the "cosmetic" blisters under the fairing compound with my needle gun. The gun went right through the hull with the first trigger pull! The cause was the beautiful teak deck that had been screwed directly to the steel below. Water eventually migrated down the screws, along the longitudinal frames, and under the loose glass insulation. The whole boat was, in reality, a wreck. Our cruise began a week later, just as they were welding in new plates. We noticed a "For Sale" sign on her.

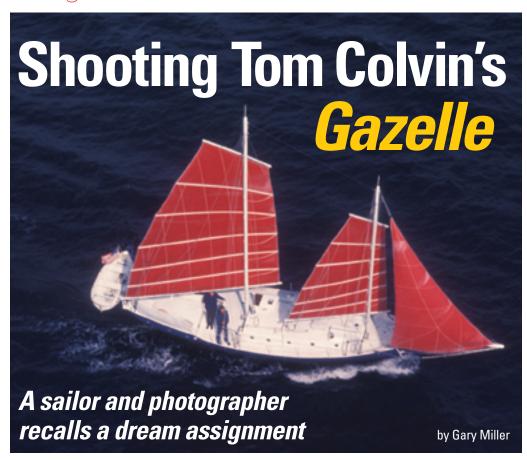
Iron Mistress has sprayed polyurethane insulation over the epoxy coating system above the waterline. At one point,

continued on page 53





The secret to preventing steel from rusting is to diligently maintain an impervious barrier between it and seawater.



very once in a while a boat comes along that captures your heartstrings. Thankfully, it usually happens at a dock or marina, where — when the good angel on your left shoulder finally gets through to you — you can walk away before flipping head-over-heels in love.

Such was not the case with Gazelle.

At the time, I was an aspiring young photojournalist. During that agonizing period in my life when I never knew where the next paycheck was coming from or when, the phone rang. And it wasn't just any old corporate client, magazine, or newspaper. It was *Time* magazine.

"We're doing a story on people who are buying boats, selling their houses, and taking off around the world," said the magazine's picture editor, John Durniak. "Why don't you head down to the Chesapeake and spend some time taking pictures of a guy who really did it? The boat's unusual-looking, too, from what I know about boats. The assignment sheet says it's a junk-rigged schooner. We've got another guy covering a boat called the Westsail 32 but this schooner really sounds interesting. The guy who designed and built her also sailed around the world with his family. His name is Tom Colvin. Here's his phone number, somewhere out in Virginia. Give me a call when you get there and we'll talk some more." Click.

Today, a young photographer would have spent at least a day Googling before heading off on an assignment, but things were blissfully different then. I simply threw a few cameras, lenses, and flash units in my bag, grabbed a plane for Richmond, Virginia, rented a car, and before long was knocking on Tom's door in the wilds of Virginia.

On assignment for *Time* magazine, Gary found himself aboard *Gazelle*, a boat that seemed to belong to another time and place, at left and below.

Surprises galore

I was expecting to meet up with Sterling Hayden or Jack London. You know, the kind of guy who walks with a swagger and total confidence. Tom, however, turned out to be mild-mannered, quiet, and reserved. Small in build, he spoke carefully in measured words. We agreed to meet at his dock the next morning.

As the ethereal morning mist was still lifting, we piled into the dink and

rowed out to *Gazelle*. Wow! I hadn't known what to expect and this certainly didn't mesh with anything I knew, having grown up on a Marconi-rigged sloop on Long Island Sound. *Gazelle* was 42 feet on deck, but with her hefty bowsprit and davits she probably took up a lot more than 52 feet when pulling into a marina for the night (which hardly ever happened in the history of this vessel — a concrete sea wall in St. George, Bermuda, maybe, but seldom a proper marina). And she was made of steel.

She also had no cockpit, per se. Where I thought there should be a cockpit, the deck simply went from one gunwale to the other, with high bulwarks and big scuppers to let out







green seawater, should it make its way aboard. And the sheer was, at that point, pretty low to the waterline, making it look like that just might happen more often than not. But what did I know? As I said, *Gazelle* was unlike any boat I had ever seen and my point of reference was getting pretty distant by now.

Tom pretended there was absolutely nothing different about *Gazelle*. We were simply going out for a daysail. Or around the world, in my mind. What was stopping us? Let's just get some more groceries and go, eh? Next stop, the Azores!

A memorable adventure

Well, back to reality. I was working on an assignment that paid real hard cash. So I rolled up my sleeves. For the next week, I shimmied up the mast in a bosun's chair (with a little help from Tom), set up lights in the engine room, bobbed around in the dink getting my Nikon wet and drying it out under the kerosene lighting in the saloon, renting an airplane for aerial photos, and walking the deck from stem to stern in search of the best angles. I was in heaven.

It was a photographer's and sailor's dream, all rolled up into one adventure. You couldn't buy that experience for all the tea in China, the land that invented the junk rig.

The rig was totally unusual for me and at first I didn't know what to make of it. But, as we sailed around the waters off Mobjack Bay in winds varying from whispers to 20- to 25-knot breezes, the beauty of the junk rig became obvious. No matter where we pointed the vessel, she was perfectly balanced. You could let go of the wheel and she'd steer herself like a perfect lady. When the wind piped up, Tom

Gazelle's junk rig was easy to handle and the sails infinitely adjustable, at top left. Although her designer, builder, and owner, Tom Colvin, at top right, had sailed her around the world, he had no seaman's swagger (in fact he's a professional naval architect). Belowdecks, Tom's daughter reads in the warm glow of kerosene lights in the saloon of the boat that was her home for months at a time, at right.

simply lowered the halyard and, bingo, the sail shortened. And still she was perfectly balanced. Another reef? Simple, just like a Venetian blind. Down came the top boom another few feet and we were ready for anything. Bring on the gales. And tack? Simple. Ready about, hard a-lee. Turn the wheel. *Gazelle* did have a jib that required that we pull on the sheet but, other than that, tacking or jibing was simply a matter of turning the wheel.

The article and photos turned out great. My pictures illustrated the story, along with those taken by the photographer covering the Westsail 32. We were both hoping for a lead photo, since it was billed as a "major story," but someone neglected to tell me the art director had purchased a Westsail 32 for himself. You'll never guess which boat graced the opening spread of that memorable issue. Δ

Gary Miller's work can be viewed at <www.wordsand pixels.com>. See page 22 for his bio.



Companionway steps



Good Old Boat March/April 2011

he Pacific Seacraft Dana is a fabulous, well-designed boat. Two of us live aboard Doolittle with ease despite her small size. However, improvements can always be made.

One compromise we found annoying was the lack of a dedicated place for a trash receptacle. Some years ago, I helped my friend Angus design and build a box that replaced the companionway steps in his Flicka. It was a resounding success and something I thought would work equally well on the Dana.

Five years later, the companionwaybox idea had not progressed beyond a few quick sketches. The simple fact was that the original steps worked extremely well, doing all one could expect from steps. But, as that's all they did, they didn't fit in with our philosophy of making everything on a small boat do more than one job.

A companionway box would offer a perfect and easily accessible place for trash and recycling and, more than that, it would also tidily store our shoes and create a new place to sit in the galley. The original steps were too narrow to sit on properly, so there was nowhere to change out of dripping foul weather gear at sea except at a bunk.

What finally compelled me to build the box was a magnificent carpet I bought in Morocco. Before I could lay the carpet, I had to make the box.

Step by step

The companionway steps rested on the cabin sole and against the engineaccess panel. But the panel was poorly fitted and it seemed illogical to go to all the trouble of making a companionway box if what it attached to needed attention. Before I could build the box, I had to remake the engine panel.

I made the new engine panel from slightly thicker plywood and planned to use the original panel to make the bulk of the box. The extra thickness would help the panel soundproof the engine better and present a more solid surface for the box to sit against. Since the panel

is mostly hidden by the box, the new and much darker teak would be less noticeable and the nicely aged and faded old wood would help the new box blend in. Also, I didn't want to make the box too heavy as I have to lift it out of the way to gain access to the engine.

One of the problems with the old steps was that they rattled when the engine was running. This was partly due to the loosely fitting engine panel. I hoped fixing it in place more precisely would help. As well as carefully lining up the four barrel bolts that held the panel in place, I added a rubber seal behind it. I routed out a groove all the way around the back of the panel and glued in 3/16-inch round neoprene rubber.

A box to fit

With the new panel in place, I could make the box. The shape of the boat and logic dictated the shape and size of the box. I could not make it any deeper than about 8 inches as it's limited by the position of the head door, but that was adequate for a step, a rubbish bin, and for sitting on. The box extends from the bulkhead on the starboard side to where the steps used to go on the port side. It couldn't have been any wider because, to look into the fridge, we have to get a foot into the space between the box and the galley. I made the box a little over an inch higher than the original step to make it a more comfy height for a seat and to gain more storage space inside.

To check the feasibility of the idea, I made a cardboard mock-up. Even the crudest template will enable the imagination to grasp a concept and work toward improving it. The main difference between the template and the final product is the size of the cutout in the base for our shoes. The main reason for the cutout is to allow removal of the floor panel that gives access to the fuel tank and gauge. This panel could be removed with the original steps in place, so I designed the new box to do the same. Besides, it just looked better visually with the smaller cutout.

by Benjy Benjamin

with storage

Boxing in the space more than doubles its usefulness

We can now tuck our shoes away behind the woodwork. The middle step slides under the bin section and has no knees or other supports so it can be easily removed. I drilled a hole in the edge of the step and inserted a piece of rolled up leather to protect the head door where it touches the step when open.

I recycled the non-skid surface from the original steps and set it flush into areas I routed out in the new steps.

The top of the box is divided into two equal-sized compartments (9 inches wide, 10 inches high, and 7 inches deep), one for trash and the other for recycling. Each compartment has its own lid and the hinges allow the lids to stay open when needed.

Pleasant surprises

So how does the finished box work? It makes an excellent new seat for the galley and it's a joy to have a proper dedicated place for garbage that's easy to clean. We simply take the box outside and wash it out. Having somewhere to put our recycling is also fabulous.

One surprise was just how much sealing in the engine hatch has quieted the engine. It's not just that the rattles are gone — that alone would have been great — but the engine sounds as if it's farther away. This has made a huge difference in comfort aboard.

The box wasn't difficult to construct but it did take a few days. It weighs just a bit more than the original solid teak ladder but can now be removed with only one hand — the ladder required two. A handhold I cut in the ply separating the two halves of the box makes the box much easier to lift.

Another surprise was how little the box cost to make. I estimate about \$300, which is very cheap as boat projects go. The invisible Soss hinges were among the most costly items, but I wanted them to match the other hinges on the boat. I used the lovely bronze fitting from the original steps to attach the box; it drops down into place as easily as the original steps did.

The head door opens as far as it ever did, but there is more floor space and the galley feels much more spacious.

Visually? Well, it's a box, but by copying the dimensions and angles from other parts of the boat I did my best to make it blend in. It's growing on me. Aesthetically, perhaps it's not as boatlike as before, but it has brought nothing but advantages and makes life flow that much more smoothly aboard Doolittle. Functionality is its own form of beauty after all. Δ

Benjy Benjamin loves sailing, making things in wood, and photography, and sells dinghy plans and other stuff at <woodenwidget. com>. He lives aboard Doolittle, a Pacific Seacraft Dana 24, with his partner, Celia, near St. Tropez in the south of France. He works on classic yachts to fill the time when not exploring the Med.



Benjy wanted his companionway steps to work harder so, starting with a mockup, opposite page at bottom, he built a box that was steps, a seat, and a trash receptacle, below. Leather, rolled up and glued into a hole, softens impacts with the head door, above.



High-end heat

Cooling the cost of a warm cabin

warm boat is a great comfort in the rainy Pacific Northwest. Boats stay in the water yearround here and the shoulder cruising seasons have a lot to recommend them: sparse crowds and better wind. My wife and I have schemed and dreamed about having a source of cabin heat for our boat for several years now. Our Albin Ballad sloop, just under 30 feet long, has a relatively narrow beam and low freeboard by modern standards. This translates into limited interior space, especially when cruising with a family of four and two cats, as we do. I ruled out any kind of bulkhead-mounted heater in the cabin because we don't have room for it.

We occasionally use a portable AC electric heater when we tie to a dock with shorepower. This is the easiest and least expensive heat option, even if you have to install a simple AC shorepower interface on your boat. It's quiet, effective, and worry-free as long as your AC system is up to snuff and you use it only when you are on board and watching it. The drawbacks are that we are without heat while under way or in remote locations away from shorepower. The portable heater is also one more piece of equipment to find a home for, to set up, and to stow after every use.

The ultimate solution for us was a forced-air diesel heater that could be installed out of the way so as not to impact the cabin interior other than by providing warmth. It does not require any new kind of fuel on board and it runs whenever and wherever we want it. The drawbacks were primarily price and the complexity of integrating and installing all its connected systems: air supplies, exhaust, fuel, and electrical.

Follow the manual

Failure to properly install a diesel heater can lead to malfunction, fire, and asphyxiation. If you plan to install one of these heaters yourself, it's essential that you read thoroughly and understand the manufacturer's warnings and installation guidelines. I was lucky to have a manual for the used heater I bought, but I have since found much of the same information online.

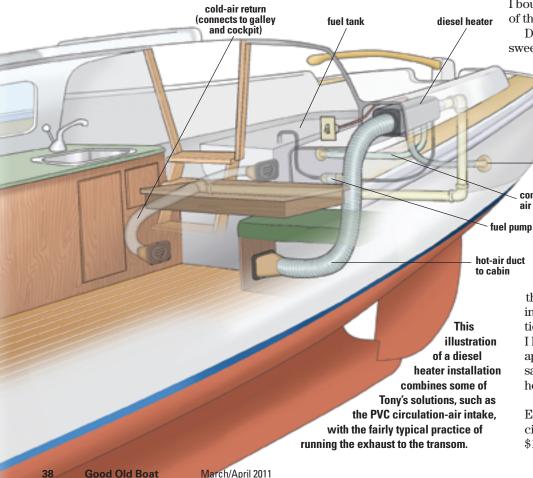
Did I mention the price? These are sweet little units, compact and self-

contained marvels of engineering. Webasto and Espar are a couple of brands that come to mind but there are others out there. The smallest models are roughly the size of a loaf of bread.

combustion ask how much one would cost. After buttering me up with a diatribe about how there aren't any women on boats without heat, the salesman quoted me a price of about

\$2,700 for their smallest heater and the various parts associated with installing it. With professional installation, this price could easily double. I hung up the phone with a renewed appreciation for my wife, who has sailed with me for years without a heater in our boat.

On eBay I found several small Espar heaters used in the commercial trucking world for around \$1,000 each. To work in a boat,



on a budget

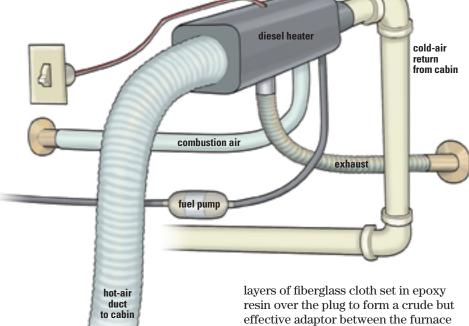
these units would still need the various specialized marine parts: ducting, grills, exhaust fittings, and so on. Still, they were considerably cheaper than the same thing sold for the marine market. But unfamiliarity and skepticism about eBay, along with lingering worries about adapting a truck heater to my boat's needs, kept me on the sidelines. I was still mulling it over when I came across a used Espar D-1 on the shelf of our local marine consignment shop, Second Wave, for \$375. If I was ever going to do it, this was the time.

I hate the uncertainty that goes with buying used "as is" equipment, so I immediately took the heater to Miller & Miller Boatyard. They specialize in installing and servicing diesel furnaces. I half expected them to say, "Oh yeah, we know that heater. It's been in the shop a dozen times." Instead, and much to my relief, they bench-tested it and found nothing wrong. In addition to peace of mind, they generously gave me a spare service/installation manual and an extra fuel-metering pump that I would need. This was well worth the \$175 it cost me to have the heater tested.

Gathering the parts

Once clear of that hurdle, I was faced with the details of installing it. I still needed all the parts to integrate the furnace with my boat. I gave a lot of thought to planning how this was going to happen before going back to my local Espar dealer for the hot-air ducting, register, exhaust ducting, lagging, and exhaust through-hull fitting. I also got appropriate hose clamps for all the different types of ducting involved.

The folks at the Espar dealer took a very dim view of what I was doing, disparaging the furnace for being old and possibly coming out of a truck. I have since learned that virtually all of these heaters were originally designed



for use on trucks and buses. Their use in marine applications is little more than an afterthought in relation to their primary market. I walked out \$250 poorer and with a little less enthusiasm than when I walked in.

One major problem had developed. On my heater, the cowl, which directs hot air from the furnace to the cabin, had a sharp 90-degree bend in it and the duct diameter reduced to 1½ inches. The dealer took pains to point out that this was incompatible with the 3-inch ducting normally used on boats and that it would reduce air flow to the point of rendering the furnace ineffective. Naturally, the right adaptor was no longer available for that model.

Fortunately, this is the kind of problem that I am good at solving. I shaped one end of a block of wood to match the end of the furnace that the cowl fits over and tapered the other end to a 2³/₄-inch round male plug. I rubbed it all over with paraffin wax to act as a mold release and laid several

and the duct (see photo on page 41).

My service manual states that duct components should withstand temperatures up to 300°F, so I popped it into our home oven at 300 to see what would happen. My wife wasn't exactly cool with this, but the adaptor endured its scorching unscathed.

A sheet-metal fabricator could also make an adaptor. It won't fit the variable curves of the furnace body as well, but with furnace cement and (God forbid) duct tape, it will suffice.

A space for the heater

I was now ready to install the heater. My priority was to locate the heating unit out of the way and to make the duct runs as short and simple as possible. I decided to put the hot-air register in a vacant space beneath a stack of drawers at the navigation station. This was down near the cabin sole on the port side of the companionway. From there, the duct ran directly into the port cockpit locker, up the side of a bulkhead, and to the hollow molded hat section that forms the cockpit coaming. This was a

High-end heat

66 The installation manual repeatedly stressed that there are optimal lengths for both the exhaust and the combustion-air hose. 99

completely wasted space into which the furnace fit easily.

I made a mounting bracket out of %-inch aluminum plate supported on one side by the bolts in the hull-to-deck joint and on the other side by a wooden cleat epoxied to the inside of the cockpit seatback. The aluminum plate was a scrap, free for the asking from a local welding shop. I easily shaped it with a fine-tooth blade in a jigsaw.

With the heater mounted and the hot-air duct connected, you might think that I was almost done. Not even close ... there are five more systems to be integrated with the furnace: exhaust, combustion air, fuel, electrical, and the cold-air intake.

Next I tackled the exhaust system. The installation manual repeatedly stressed that there are optimal lengths for both the exhaust and the combustion-air hose. I connected a length of flexible stainless-steel ducting of the optimal length to the exhaust outlet on the furnace and led it outboard to the hull, maintaining a downward slope for drainage and avoiding all possible contact with anything stowed in the cockpit locker. This established where I had to drill a hole for the exhaust through-hull fitting. I hated to drill that hole, but if you want to make an omelet, you have to break some eggs.

The exhaust through-hull fitting is an expensive and specialized piece of stainless steel that comes in a variety of configurations, such as for a perpendicular penetration or through the slope of a reverse transom. It should be installed in accordance with the manufacturer's specifications regarding

clearances from the hull and the use of heat-resistant washers. Once installed, the exhaust-duct connections should be sealed with furnace cement and securely clamped. The entire length should then be generously wrapped with fiberglass lagging material.

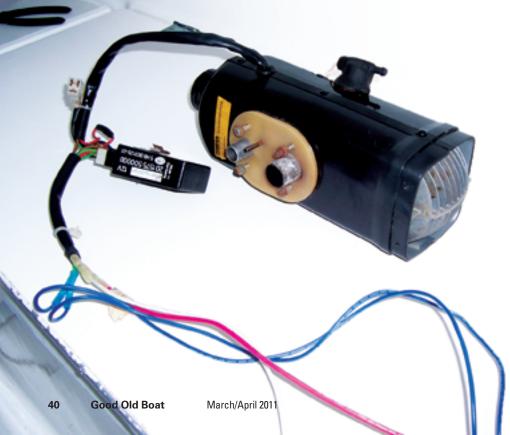
If you install an exhaust throughhull fitting in the side of your boat, think about its placement with regard to the dock, docklines, fenders, and vent openings. In my case, placing the exhaust outlet high on the port quarter kept it clear of all these concerns.

Since the fuel pump requires electricity, I tackled the fuel and electrical systems next. I happened to have an extra port in the top of my fuel tank. Maybe it was intended for a dieselheater fuel pickup — the boat was built in Sweden after all. I was easily swayed by the convenience of using this existing fuel source. I put a pickup tube in the port and ran the fuel line under the cockpit to the fuel-metering pump and on up to the furnace. The manual specifies parameters for the vertical and horizontal run of fuel lines, the permissible mounting angles for the pump, and splicing fuel lines together to prevent air bubbles from forming. I bundled the wires for the fuel pump to the fuel line with plastic wire ties.

An electronic control module has to be mounted near the heater. It should be oriented so the holes in which the wires are connected are facing downward so they won't collect moisture. The possible locations for mounting are determined by the length of the wire harness. Newer heaters and other brands may not have this separate module.

A spare circuit on my fuse block provided power to the furnace with the 16-amp fuse specified in the manual. These furnaces use a fair amount of power during the startup and ignition phase but, once they are running, they are very modest in their use of electricity and fuel.

No bigger than a loaf of bread, the diesel heater requires six connections: electrical, fuel, exhaust, and three for air.



on a budget

Next, I ran wires for the on/off switch to a convenient location. Needless to say, all wiring and fuel lines should be neatly routed and well supported. Pay special attention to protecting them from moving parts and heat sources.

Time for a test

At this point I was able to test run the heater. It ran, but not well; white smoke belched from the exhaust, comically at times, puffing perfect white smoke rings from the left flank of my boat. An avalanche of doubt descended on me. Was there something dreadfully wrong with the furnace after all? What could it be? When in doubt, read the directions!

Remember the optimal lengths for the exhaust and the combustion-air intake hoses? I don't know why 21 inches of hose on the combustion-air intake would make a difference but it does. The exhaust gases now are crystal clear and the furnace works fine. Some of the latest furnace designs combine combustion-air intake and exhaust in the same pipe. This is a neat arrangement. It appears to balance the two air flows and its double-wall construction keeps the surface temperature of the duct cooler.

66 It appears that these heaters are extremely sensitive to every nuance of combustion-air delivery. 99

I worked out the cold-air intake very cleverly, if I do say so myself. Drawing cold air to be warmed for delivery to the cabin from inside the cockpit locker is not ideal, especially when the air space is shared with the engine. This is not just because of the risk of circulating fumes and odors — like mildew — throughout the cabin, but because the engine and the furnace may compete with each other for a limited air supply. Diesel engines use an enormous volume of air in relation to the fuel they use, on the order of 10,000 to one. Even though my cockpit locker is ventilated, I experienced a flameout in the furnace once when I was running both the engine and the heater with the cockpit lockers shut tight. It appears that these heaters are extremely sensitive to every nuance of combustion-air delivery and can quickly become starved for air. I have since arranged to draw the cold-air intake from outside the cockpit locker.

I have an existing ventilation duct in the starboard cockpit locker that runs from the aft galley bulkhead to a vent in the cockpit foot well. I installed a tee fitting in this duct and tied into it by running PVC pipe down under the cockpit from the furnace. Normally, the furnace now draws fresh outside air through the vent in the cockpit foot well. But I can also close this vent and recirculate air from the cabin at times when heat is in high demand.

Altogether, I am very happy with our new heater. It is effective, safe, and practically invisible. The cost was 20 to 25 percent of what it might have cost to buy a new unit from a marine supplier and have it professionally installed. \triangle

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





Tony found the ideal location for the heater in the unused space under the port-side cockpit coaming, at left, and made an aluminum shelf to support it. He also had to make an adaptor to connect his consignment-store heater to the air ducting normally used in boats, at right.

ole revival

n 2008, at age 66, I fulfilled a lifelong dream by purchasing my first cruising sloop, a 1979 Hunter 30. Like many good old boats, Time-Out desperately needed a new owner when I acquired her in 2008.

Over three decades of uninterrupted slip life, she probably suffered occasional blown bilge-pump fuses, ubiquitous boat leaks, and such transgressions as wet bathing suits tossed casually on the cabin sole. As a result, the plywood teak-and-holly sole was dull and disintegrating. A sailing friend suggested I replace it with one of the new synthetic flooring materials that are appearing on expensive new yachts. He further suggested the replacement sole should extend past the forward bulkhead and into the V-berth for a

more dramatic-looking cabin.

Taking this advice, at the 2010 Atlanta Boat Show I purchased 45 square feet of mahogany-and-holly synthetic flooring from NuTeak. This product consists of 1/4-inch-thick, 3-foot-long alternating planks of 3-inch-wide mahogany and 1/4-inch-wide holly striping. The NuTeak

folks also provided four "sausages" of Bostik moisture-cure adhesive.

Subfloor preparation

When preparing for the new cabin sole, I decided one 40-inch long, full-width section of the old plywood sole was so badly deteriorated it had to be cut out. This exposed the fiberglass liner.

The NuTeak sole jazzes up the whole cabin in Time-Out, at left. Before laying it, David had to cut out part of the old sole, below.

Because I was leaving the rest of the old sole in place as a subfloor. I had to build up the cutout area before applying the replacement material.

I cut to fit and epoxied 1/4-inch marine plywood for the low area and did the same thing in front of the head and into the V-berth. I attached these three new panels to the fiberglass liner with clear Dow Corning Adhesive Caulk 999A, as suggested by Hunter Marine. So the plywood would take the shape of the curved cabin sole, I placed 150 pounds of exercise weights on each subfloor section to hold them

in place while the adhesive cured. I then filled the seams between the four pieces of sub-floor with automobile Bondo and sanded them smooth.

Precision cuts

My son-in-law volunteered to take the lead in installing the NuTeak planks. An information technology executive



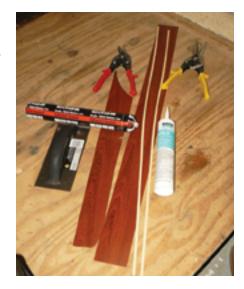


by profession, he had cut his teeth as a craftsman remodeling his own kitchen a couple of years earlier.

We started the NuTeak installation by laying out alternating planks and striping on the port side. Since it's interrupted by the bulkhead, this section is shorter, so it seemed to be the right place to begin the learning curve.

Every piece had to be precisely cut, trimmed with compound sheetmetal shears, tested, and fine-tuned. The installation literature indicated that the Bostik moisture-cure adhesive had only a 10 minute "fuse," after which the adhesive skins over. This urgency required that we ensure every panel fit perfectly before we started the cementing process. We used blue masking tape to assemble the pre-fitted pieces into taped mats that could be cemented in place as finished units.

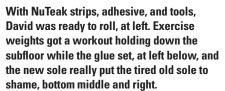
It took us a full day to cut and fit the pieces for the "short" port side. We spent the second day fine-tuning the cuts, cementing in the assembled port-side mat, removing excess adhesive, and making sure every intersection mated perfectly to its neighbor and to the perimeter. It was a frenetic effort. By evening, we were whipped. However, the new port-side cabin sole was outstandingly beautiful, especially



when viewed side by side with the remaining old faded sole.

The following Saturday, we cut and fit the entire, far longer, starboard side. With much of the learning curve behind us, we assembled our blue-striped interlocking mats more quickly. When we returned the next morning, we hustled out the adhesive and quickly installed the assembled taped mats from the companionway all the way to the bow. When the last piece was laid, all joints and edges aligned, and the excess adhesive wiped away, the new sole looked fabulous.





A sole to be proud of

The new striped mahogany-and-holly sole brightens up the interior all the way into the V-berth. In addition to looking exactly like fine contrasting natural woods, it visually elongates the cabin. The total cost, including the subfloor, tools, and the NuTeak materials, was just about \$1,000. Best of all, the new sole requires no maintenance.

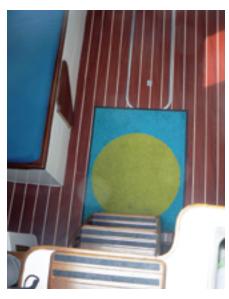
The cabin sole has been in place for a full sailing season. It has been subjected to wet bathing suits, dragged coolers, dropped tools, and at least one flying quiche. Despite these transgressions by *Time-Out's* new owners, the new sole remains a showpiece.

Resources

See the Resources box on page 27 for suppliers of synthetic decking. \varDelta

David Germaneso works for the state of Georgia. He and his wife, Anita, share their sailing time on Time-Out with family and friends on nearby Lake Lanier.





A cockpit table built

An elegant accessory from an unlikely source

by George Lawrence

hen we lived in Miami, my wife and I enjoyed nothing more than having dinner in the cockpit of Makani, our Ranger 29. We had a nice wooden folding TV table that fit perfectly on the cockpit sole when the tiller was lifted out of the way. The table, though small, worked great and stored away in a nook behind the head. We now live in Annapolis, after having sold the marvelous Ranger to a friend. Our new boat, a 1988 Pearson 31 named Far Away, has wheel steering mounted toward the rear of the cockpit, but she had no cockpit table, and we missed that.

It seemed that a good solution would be to purchase a folding table that attached to the tubes of the steeringpedestal guard. We would put it up to eat and fold it down when done. That would be high-class living. But I quickly found out that folding cockpit tables are priced in the luxury range.

Edson sells a nice teak table for one measly dollar shy of \$1,000. I was staggered. Serious searching uncovered smallish teak tables for \$350, but even that seemed pretty expensive. A search through craigslist came up empty. It was do-it-myself time. That's when I realized that even a table-hardware kit ran more than \$180... before purchasing the wood. There had to be a more affordable way to create beauty, durability, and utility in a cockpit table.

If I wished to do this myself, I figured I would need:



• A stowed position for when it was not

Looking for lumber

position when in use

You can buy teak, but it's expensive and comes in widths that would have to be joined to make a tabletop. Other hardwoods are available, but they have the same limitations. I don't have the skills or the tools necessary to do high-end joiner work, especially when the potential is to botch up a really expensive piece of wood. So I planned a circuit of Goodwill stores.

At the first Goodwill store, I found a solid-maple coffee table for \$10. The table had more than enough wood to make a cockpit table and the top was big enough that no fancy joinery would be necessary. Problem one solved for \$10. If you buy a Goodwill table, choose maple, cherry, or some other finegrained hardwood that will give you a nice smooth surface.

I did all my cutting before removing the finish on the table so the old finish would protect the surface while I disassembled the table and cut it up. When done, I also had less finish to remove. After removing the legs and three pieces of decorative trim, I marked the wood I needed for my table in areas that were free of screw holes and other blemishes.

Figuring dimensions

Since I would be hanging my table under a teak cup-and-binocular holder that was already mounted on the pedestal guard. I decided to make the table the same width: 14 inches. I considered making it with leaves I could fold open to create a wider dinner surface but, since our habit in the past had been to use the table more as a place for appetizers and wine glasses than for a full dinner service, I decided to keep it simple. A width of 14 inches would be plenty and would leave us room to stand next to the table in the cockpit.

The length I could make the table was a function of two things: the height of the mounting point on the pedestal and the length of the cockpit forward of the pedestal. The table couldn't be longer than the shorter of those dimensions. On Far Away, the limiting dimension







George chamfered the table's edges with a block plane, at left, mounted the hinges and clamps, center, and attached a socket for the leg, at right.



from scratch

was the height of the mounting point on the pedestal: 29% inches. Any longer and the table would not fold down without hitting the sole. Since I needed a 3-inch-deep piece to mount on the pedestal and hold one side of the table's support hinges, I came up with a table surface of 14×26 inches.

Also, the tabletop would have to be at least 25 inches above the cockpit sole so my knees would fit comfortably under it.

I cut out the 3- x 14-inch mounting block and the 14- x 26-inch tabletop on a table saw. Using a small block plane, I chamfered the edges on three sides of both pieces. The edges I didn't chamfer were those where the hinges would join the mounting piece to the tabletop. The rounded chamfers are important; unrounded edges on hardwoods can be sharp. I used 150-grit sandpaper to round the edges and corners a bit more. I also sanded the edges of the mounting board.

Tubing clamps

Although I could have screwed the 3- x 14-inch mounting board directly to the pedestal, I don't like making holes in perfectly good tubing. The teak cup-and-binocular holder was attached with plastic rail clamps made by Helm Industries (item #HR-200 for 1-inch diameter tubing). These were a bit hard to find, but I eventually found them at West Marine for \$32.99 each. They show up in the West Marine catalog under "Life Sling Components." (Note: Helm Industries is no longer in business –Eds.)

These clamps were pricey, but they did the job well. Since I would be using brass hinges, I used brass # $10 \times 1\frac{1}{4}$ -inch machine screws, nuts, and washers from Home Depot to attach the rail mounts to the mounting board.

Thus far, I had a great piece of maple for \$10 and two rail mounts for \$66. But how would I hinge the tabletop to the mounting board? All the local chandleries (Annapolis has as many boatsupply stores as Seattle has Starbucks) have lovely stainless-steel and brass hinges for marine service. But if a part says it is for marine use, the price will be doubled or tripled. The hinges I liked were solid "marine" brass with rounded



Making your own

corners and cost \$20 each. Home Depot had solid-brass 3-inch door hinges that were virtually indistinguishable from the \$20 marine hinges for only \$7 each.

The hinges came with brass screws. I thought through-bolting the hinges to the table and bracket would make the table stronger, so I bolted them on with #10 x 1-inch brass machine screws from Home Depot. Of course, the length of the machine or wood screws you use will be determined by the thickness of your tabletop. I could find only round-head machine screws with straight slots. I'll keep looking for brass oval-head Phillips machine screws because I think they will look better. The 18 brass machine screws, some brass washers, and the nuts came to less than \$10.

I didn't recess the hinges; I surfacemounted them. If you have better woodworking skills, you may want to recess the hinges.

A leg to stand on

The biggest design problem I had to solve was how to support the table in the ready-to-use position. This stumped me for a couple of weeks. At first, I thought a hinged leg could be attached that would fold down when the table was open. All the tables I found for sale had either a fold-out leg or some sort of brace that fit at a diagonal between the tabletop and the steering pedestal. But, for aesthetics and stability, I wanted the leg set back a bit from the end of the table. That would require the leg to be shorter than the tabletop. With my tabletop only 26 inches long, the leg would end up shorter than 25 inches, making the table too low for my knees. After measuring the distance from the floor to the top of my knees when seated, I had established 25½ inches as the minimum practical height.

I looked at ways to use a folding hatch brace, but everything I found seemed either complicated, expensive, or a nuisance to use. A friend suggested a folding spring-loaded brace of the type used on swing-up table leaves but these are made of steel and, although painted, would almost certainly rust in time. I eventually opted for something much more simple: a removable leg.

I bought a 1-inch diameter x 4-foot dowel at Home Depot for \$5.95. To make a socket for the removable leg, I drilled a 1-inch hole in the center of

a 3½-inch-square piece of scrap maple from the Goodwill table.

I drilled this hole with a 1-inch bit I already had, but you may want to use a hole saw. If you don't have a drill press, make sure you hold your drill perfectly vertical when you drill your hole or the table leg will not fit in straight.

I chamfered and radiused the edges of what would become the bottom side of the socket so it would not be sharp and finished it with stain and teak oil. I then screwed this small square socket piece with a hole in it to the bottom of the table, centered side to side and about 2 inches from the end, using four of the brass screws that had come with the hinges.

Before cutting the dowel, I took the table to the boat and installed it on the pedestal guard. With the table mounted at the height I wanted it, I raised the table leaf until it was parallel with the

Sand, stain, and finish

Rather than using chemical strippers on the Goodwill table I used 60-grit sandpaper to strip it to bare wood. That way, no chemical stripper filled the pores of the wood when I was done. I followed the 60-grit paper with finer and finer grit until I finished up with 220-grit, making a beautifully smooth surface.

After vacuuming the entire work area to remove the dust, I rubbed on some "gunstock brown" Minwax stain I had on hand. If you have to buy stain, get the smallest size you can as you'll need very little.

Once I had rubbed off all the surplus stain (I didn't leave the stain on very long because I wanted a nice golden color), I let the parts dry overnight. Then I rubbed in three coats of teak oil. Well, actually, every time I went to the basement, I put on a bit more teak oil,

66 My Goodwill special looks great. It was easy and simple to build and cost almost an even \$100. 99

cockpit sole. I leaned the dowel against the table and made a pencil mark on it at the level of the underside of the table. Later, back at home, I cut the dowel with a back saw in a miter box. If you want to put some sort of tip on the base of the leg, remember to do that before you measure for the cut.

I wanted a snug fit between the dowel and its socket so I sanded the dowel lightly at that end. I sanded the rest of the dowel with three grades of ever finer sandpaper, stained it, and rubbed on teak oil as I had done with the tabletop. I tested the dowel in the socket; the table was good and sturdy. I don't want someone's hefty Uncle Harry to sit on the table, but no cockpit table is up to that sort of punishment.

When we want to use the table, I lift the table leaf, slide the dowel into the socket, lower the table, and it's secure. When it's time to drop the table, I lift it, remove the leg, and stow it nearby. It isn't fancy but it works. One of the nice features of this approach is that, if your setup will allow the table to be mounted a little higher, you can make the leg longer than the length of the tabletop, which you can't do if the leg is hinged to the tabletop.

let it sit a half hour or so, then rubbed it well. The table probably has eight or nine coats. I like oiled wood because it's easier to maintain than varnish and doesn't chip or peel. Since this table will be stored under a canvas steeringpedestal cover, it should hold up well.

I didn't fit fiddles on the table because we have glasses and plates with rubber feet and don't plan to use the table under way. If we find ourselves in an anchorage so rough that things fly off the table, we'll know it's time to move somewhere calmer. If I were to add fiddles, I'd screw them in from the underside of the table.

My Goodwill special looks great. It was easy and simple to build and cost almost an even \$100 — at least \$250 less than anything I could have bought. Now it's time for some wine and cheese in the cockpit to celebrate. Cheers! Δ

George Lawrence grew up an easy bike ride to Baltimore Harbor and friends with an old rowboat. He has captained a variety of vessels but his most memorable time was an hour at the helm of the 80-foot wooden schooner, White Squall, riding down the trades in Sir Francis Drake Channel.

46

Sailing with autism

A boat provides a happy mix of activities and security

by Kari Halker-Saathoff

Maming a boat is serious business. When we upgraded from a decrepit 1972 Cal 20 to our second boat, a 1976 27-foot O'Day, to accommodate our family of four, none of the names on our

list fit. We decided to ask Harrison, our then 5-year-old son with autism, what he thought. He looked directly at us, put his hands on his hips, and responded, "Olo, o'course."

My husband, Danny, asked, "What about the dinghy?" This time, Harrison placed his hand outward in a gesture of certainty and said, "Antsy, o'course."

And so the naming was done. We have no idea what Olo means, but found Antsy to be so insightful for the dinghy. When we purchased our current boat, a 1985 35-foot O'Day, we again consulted Harrison. " $Olo\ 2$, o'course," he responded, clearly wondering why we even had to ask. For a brief moment, Harrison was in our world, making connections.

We keep our boat in Lake Superior's Apostle Islands. Sailing with a family is exciting, fun, challenging, and amazing. When I read articles about other families and ideas others have for interesting crafts, activities, projects,



Danny, Hope the dog, Kari, Avery, and Harrison aboard Olo 2.



and discussions, I can't quite connect. One son with autism and a younger son with attention deficit hyperactivity disorder (ADHD) makes for interesting days and nights on our boat, and we wouldn't change that for the world ... We have, however, learned several lessons along the way.

Pack carefully

At the end of my 13th year of teaching high school art, I was itching to get out of town. I had made several lists of things to bring on our first one-week trip for the summer. In my haste, I forgot Harrison's medication.

To help understand what this means, here is a bit about him. He's 10 years old. At first glance you might not notice how autism affects him. He's an active, well-spoken, and talented boy with irresistible steely gray eyes and a smile that melts not just his mother's heart. But it doesn't take long to notice a collection of obsessive behaviors, such as talking to himself or fixation on a cartoon character. At one moment, his inquisitive and insightful nature stuns us, such as when he named the boat with the voice of a seasoned expert or when he rattles off entire chapters of memorized text from *The Mouse and the Motorcycle*. The next moment, he is inconsolable over a torn page in a book.

His medication keeps Harrison "even." He obsesses less, restrains more impulses, and needs fewer repetitive or self-stimulating behaviors (flapping his arms or twiddling his fingers) to calm himself. This all adds up to a more pleasant experience for anyone in his orbit.

Our younger son, Avery, is usually a fine playmate and match for Harrison's interests. The boys have long bouts of imaginative play. It's amazing to listen to them construct dramatic situations and challenges for themselves with just a few simple toys. But Avery is challenging in his own

Cruising memories



Harrison loves to be suspended in the bosun's chair.

ways as he struggles with ADHD. It's not surprising that Harrison's unique behaviors are sometimes more than Avery can take, especially as Avery matures and develops skills that surpass Harrison's. At 8 years old, Avery is starting to notice his brother's needs and the ways we simply have to treat the boys differently at times in order to be good parents to each. Avery needs more than we can give him in the small quarters of our boat—more activity, more attention, more variety. We do what we can, but sometimes we lack options. He's not always understanding.

The lack of Harrison's medication, coupled with bad weather that held us in port all week, would have been intolerable if not for the local community center. Swimming saved us; it got us out of the boat and it entertained Avery. Best of all, it served as just the "medication" Harrison needed; water has such a calming effect on him. In the water, Harrison is a "normal" child, and we felt like an almost-normal family.

Develop a routine

Our mornings begin the same every day. The boys take turns holding the anemometer to measure the wind speed. They collect observations of the weather — the date and time, the waves, clouds, and temperature — all as part of their daily journaling routine. It starts our day, it teaches them something, and it's a cooperative event. Their journals are their own records of the previous day's activities. This routine keeps both boys occupied and interested. Their nature notes, sketches, and photographs, along with their daily weather report, will be an invaluable record of our time together. We hope it will help them appreciate the amazing opportunities they're experiencing every day.

Make time for activities

Avery has a love and talent for art, and Harrison has a fixation-obsession-addiction to paper and office supplies. This combination makes our boat a floating gallery of various expressions. We were pleased one day to hear both boys quietly and intently working down below as we sailed to Raspberry Island. When we arrived and went below, it looked as though a paper shredder had exploded.

In their concentrated elementary-school handwriting, they had written labels and taped them on nearly everything in the cabin. For example, they named the quarter berth the "gest bedrom" and the head the "baff room." The couple-hour project depleted our paper supply for the week, but their best phonetic efforts provided plenty of entertainment.

As is perhaps true of all family boats, ours looks as if it belongs to the Beverly Hillbillies. In an attempt to keep the boys interested in sailing, we have indulged them and ourselves with several blow-up floating toys, kayaks, and a very large inflatable . . . all attached to our boat. We may not be able to brag about having the tallest mast in the marina but we do have the largest dinghy. Decked out in our full-body wetsuits and kayaking life jackets, we are able to keep most cries of boredom at bay in a way we all enjoy.

Finding joy in every day

We added a downrigger to the boat so we could fish. When we caught our first fish (a 10-pound lake trout), Harrison squealed and flapped his arms so much the boat moved with his uncontained joy. Avery said simply with his own sort of excitement, "I can't wait to eat it."

Harrison's emotions did a 180; he started to cry, screaming and pleading for the fish's life. He lifted his arms dramatically, saying, "That fish had a name like Slippery or Slimy, and it had a family, and its family will be looking for it! They'll be sad!"

There was no reasoning with or soothing Harrison. He might have thought my tears were also for the fate of the fish, but I was overwhelmed with pride. He was showing empathy! My son connected with a fish and it was a moment to treasure.



The more stuff around him in the nav station, the better Harrison draws.

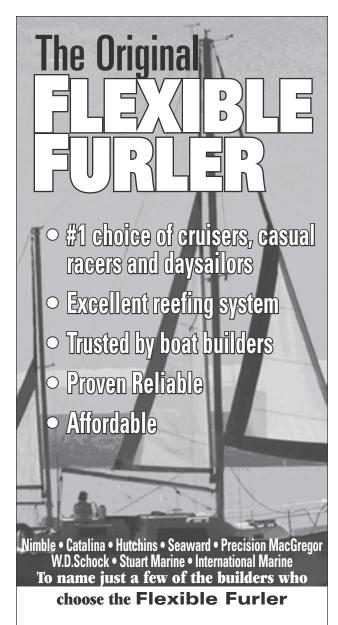


The bosun's chair has long been a favorite hangout of Avery too.

These are just a few of the lessons we've learned about sailing with a family. Our experience is unique in many ways, but in some ways is perhaps no different from that of any other family. As parents, we want to do as much as we can to help our boys. In previous summers, we have enrolled Harrison in various programs and therapies, including summer school, speech, occupational, handwriting, audio-integration, and pragmatic-play therapy. We were proactive this past winter and spring, after Avery's ADHD diagnosis, to hire weekly tutoring and spend extensive one-on-one time with him to help him improve his confidence and academic performance.

We struggle with how to make the best out of every moment of our parenting journey, so our sons can be capable, strong, and happy. This summer's therapy has been sailing and we all benefited. There are beautiful things to discover and daily challenges to overcome. Both are better on the water. At the end of each day we ask the boys what their favorite part of the day was. Avery recites the catalog of daily events. The standard response we get from Harrison is, "Hanging out with you guys." Δ

Kari Halker-Saathoff is in her 15th year of teaching high school art. She loves spending time on the boat with her family. As a working artist, too, she takes inspiration from her experiences sailing on Lake Superior. Along with cruising their good old boat, she and her husband, Danny, occasionally race. Last summer, Kari skippered her first race.



Cruising Design is now offering an affordably priced mainsail reefing system and a patented spinnaker furling system

The Flexible Furler is the original, tried and true, flexible reefing system. We designed the first Flexible Furler 12 years ago, and we've since learned even more about our product and the sailors who use it. It was a bulletproof design back then, and we have taken every opportunity to make the Flexible Furler even better over the years. The result is a *proven* yet updated reefing system designed for a lifetime of flawless service.



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Making your own





Solar panels will generate more juice when turned to face the sun directly.

aving cruised through the South Pacific twice, we knew the value of solar panels for keeping our batteries charged and healthy. As we prepared for our third trip south of the equator in our Fantasia 35, Cetus, we decided we would be wise to upgrade our solar panels to keep up with growing electrical demands.

We have found that having panels that can be adjusted on two axes helps obtain maximum output, as you can direct them straight at the sun, wherever it might be. When I purchased 65-watt panels to replace our older 55-watt ones, I realized I should install a stronger mounting system, as the new panels are several pounds heavier and a third wider. The original panels were mounted on a single lifeline stanchion and could rotate forward and back as well as from side to side. I needed to find a way to keep the same flexibility in rotation while using two stanchions for added strength.

I accomplished this by mounting a length of stainless-steel tubing between a pair of stanchions. The solar panel mounts on a second length of tubing fitted at right angles to the first. These tubes serve as the two axes about which I can rotate the panel.

continued on next page





- I began by measuring, cutting, and attaching a length of %-inch outside diameter (OD) stainless-steel tubing to the aft stanchions just below the existing covered-wire lifeline. The stanchions are 1 inch in diameter, so I used 1-inch jaw slides with %-inch external eye ends that would accommodate the %-inch OD tubing.
- Next, I took a length of 1-inch OD tubing cut several inches shorter than the length of %-inch tubing. I slid a 1-inch tee fitting onto it and fastened it to the tubing at its mid-point. I then attached a 1-inch OD by 2-foot "leg" to the remaining receptacle in the tee fitting. Where possible, I used bolts instead of set screws in the rail fittings for more rigidity.



- In the ends of the 1-inch tube, I cut slots approximately 1 inch long. These would allow me to use clamps to hold this outer tube in position on the inner tube.
- 4 When it was complete, I slid the entire T-assembly over the %-inch tube assembly.







The new solar panels measured 26 x 40 inches. To mount them, I purchased two pieces of $\frac{1}{2}$ -inch scrap acrylic sheet cut to 7 x 26 inches. I attached one to the back of each panel using machine screws with washers and nuts.

1 I fastened plastic rail clamps to the acrylic backing, approximately 3 inches from each end. I then used the clamps to attach the solar panels to the extended legs of the T-assemblies.

Making your own



I positioned heavy-duty rail clamps, like those used on barbecue mounts, over the slots I'd cut in the 1-inch tubing. When these are tightened, they clamp the outer tube to the inner tube and hold the panel in the desired side-to-side position.

Terry Kotas and his wife, Heidi, left their home port of Gig Harbor, Washington, in May 2009 on their third bluewater cruise. Terry's second book, Adventures Aboard S/V Casablanca, was published last fall.

Materials list for one mount							
Qty	Part	Price (ea.)					
2	1-inch jaw slides	\$ 23.99					
2	%-inch external eye	\$ 15.49					
6 ft.	$rac{1}{8}$ -inch stainless tubing	\$ 49.99					
6 ft.	1-inch stainless tubing	\$ 54.99					
1	1-inch stainless tee fitting	\$ 29.99					
2	1-inch Magma clamps	\$ 44.99					
2	1-inch plastic rail clamps	\$ 22.99					
1	½- x 7- x 26-inch scrap acrylic	\$ 6.00					
_	Nuts, bolts, screws	\$ 5.00					

Prices are based on the 2010 West Marine catalog.

Time taken: approximately one weekend.

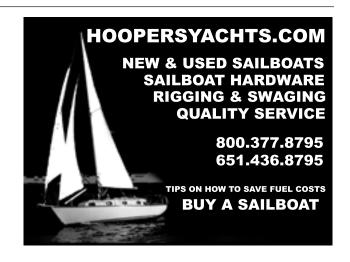
Note: It may be possible to purchase most of these parts at swap meets or marine exchanges at substantially lower prices.





The plastic rail clamps beneath the panels are used to adjust the panels in the fore-and-aft direction and to lock them in position, at left. The panels have so far withstood 25-plus knots of wind with moderate seas. During docking maneuvers or in extreme weather, we can rotate the panels to a flat "stowed" position, at right.





Boat construction

Making steel boats last, continued from page 33



Freshly painted top and bottom, Iron Mistress is ready for sea.

while replacing some deck gear, I got to see the epoxy paint underneath. Even after 25 years, it was spotless. In my opinion, based on experience, this is the best kind of insulation and should be one of the things you look for in a used steel boat.

Prevent electrolysis

Electrolysis is the other issue that concerns fellow sailors when they list their objections to steel boats. This is a problem that occurs when electrical current — whether from inside your boat or an outside source (such as a marina) drives an otherwise non-spontaneous chemical reaction. When dissimilar metals are immersed in water, all it takes to wreak havoc with underwater running gear and through-hulls is a "leaking" current. That's why all boats use sacrificial zincs to protect expensive underwater gear. There's no question about it: in the case of a steel or aluminum boat, electrolysis can be devastating.

I have often heard the statement that metal boats are "nothing more than floating batteries." If a boat is improperly wired, there is some truth to that criticism, but there is an easy way to eliminate or reduce electrolysis on all boats, including steel ones. Known as a floating ground or isolated ground, this system is used on many European boats and should be mandatory on all boats, especially metal boats.

Before you purchase a used steel boat, be sure to consider how it's wired. Iron Mistress has a true floating-ground system (as distinct from that in most boats that use the motor as a ground). All electrical loads go to large negative and positive bus bars with no communication with the hull anywhere.

To accomplish this, you must have dual-pole instruments and an isolated-ground wiring harness on your engine positive and negative poles that do not use the engine as a ground. (By comparison, single-pole sensors — the sort of sensor you see on most production boats — use the engine block as the ground.) Next, you need an electrical isolator for your shaft coupling and true isolated-ground alternators, which have two poles, positive and negative. Note that most standard alternators are "case-grounded" to the motor through their mounting hardware.

The above, coupled with an isolation transformer that allows shorepower into your boat via a "magnetic coupling," will ensure that there is no internal electrolysis.

Iron Mistress has about 50 pounds of "indicator zincs" on her hull to protect her from stray currents in marinas. They had lasted for 15 years in New England. But when we docked in Whangarei, New Zealand, at a great funky marina that had a lot of stray electrical leakage, the zincs worked as designed and were 80 percent wasted in five months! We replaced them with new ones and she is fine now.

After hearing about these maintenance considerations, you might ask why anyone would own a steel boat. The answer is simple: they're watertight and the safest cruising platform you can have for going offshore. These days, with modern construction techniques and coating systems, a steel boat can truly look like a yacht.

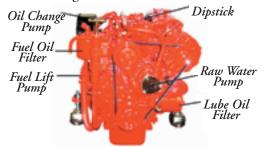
Take it from us, when you're voyaging with a big sea running ... when it's pitch black and the wind is howling ... at these times you will not be thinking about the paint system on your boat. You will be secure in the knowledge that you are in the safest and sturdiest of all vessels — a steel boat! That's what it's all about. Δ

Robert Brown and his wife, Elyse, escaped the world of health care, where Robert was a podiatric surgeon and Elyse was a critical care nurse and, between 2003 and 2008, circumnavigated aboard the 45-foot Iron Mistress. For details see <www. ironmistress.com>. Robert first restored a Pearson Coaster and a Sea Sprite. He is a certified welder and experienced in spraying Awlgrip.

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Something old, something new

Consignment stores match good old parts

to new old boats

by Todd Townsend

et's say a part on your boat needs to be replaced. Perhaps the fuel gauge isn't working. You poke around online for a new or used one. Maybe you're lucky enough to find one the exact size and style of the gauge that's not working. But buying something online has downsides. Wouldn't it be nice to locate a replacement item in a store where you can first look it over before purchasing it?

I had a couple of days of slack time on the East Coast recently before heading home to Michigan and used the opportunity to poke around in a few marine consignment stores. I made several phone calls before heading east. I found a couple of interesting prospects and a few numbers that just rang and rang — the sale of boat parts, especially used parts, is a tough business; many stores are no longer around. However, I came away with two great resources for the do-it-yourself boater: Nautical Traders in Salem, Massachusetts, and Marine Consignment in Wickford, Rhode Island.

Nautical Traders

On Boston's north shore, in an oldschool New England neighborhood where the curbs are granite, is a treasure. In a large white building on State Route 1A, between downtown Salem and Beverly Harbor, you'll find Nautical Traders.

Linda Corbett owns and runs the shop with help from her husband, Captain James Corbett. The day I was



Captain Jim and Linda Corbett run the Nautical Traders store in Salem. Massachusetts. Perched on a busy corner on State Route 1A, the shop is filled to the brim with everything the do-it-yourself sailor might need at any given moment.

there, Captain Jim was manning the store. As I asked a few questions and tried to stay out of the way, a customer came in and said he needed a fuel gauge. Rather than rack up a quick sale and send the man on his way, the Captain asked, "What makes you think that your fuel gauge is bad?"

The customer explained that it had quit working and he had decided to replace it. Captain Jim described how to test the gauge. "Cross these wires, but not these. If the gauge is bad, the needle won't budge; still good, and it will read full," he said. Sure enough the gauge swung to full. Captain Jim sent the customer off to test the boat's wiring and the tank's sending unit.

Nautical Traders is the size of a neighborhood hardware store. As you walk in, you'll see a counter running along the left-hand side all the way to the back. As well as a great selection of all types of surplus and salvage parts, you'll also find new marine items here. Much of the Corbetts' inventory is surplus from manufacturers or from



Rigging fittings and hardware, winches and anchor sentinels ... it's a candy store for sailors. Whatever you need (and a few things you don't need) you're likely to find in a consignment store such as Nautical Traders.

56

marine stores that have closed. Shoes and clothing items with a very good selection of foul weather gear are on display in the center and a large area of nautical gifts and antiques occupies the right front corner.

The Corbetts have rented some of their high-quality antiques to movie-production companies for use as props.

The front of the store by itself is like a candy store for any boater, but a doorway past the counter leads to a warehouse area with a loft. Stashed in there are yet more treats for the do-it-yourselfer. This room is mostly surplus with some salvage and consignment items. There are inflatables, kayaks, fenders of all sizes, ports, benches,

fighting chairs, stoves, pulpits, masts, booms, rigging, lines, and on and on. The Captain showed me a couple of bronze parts that were a mystery even to him, but he remains convinced of their value. "Someday," he says, "somebody is going to come in looking for them. And we'll have them."

A great highlight of any visit to Nautical Traders is the Corbetts themselves. They have been in the business for 20 years and they are boat people. Former

Billy Leach, manager of the Marine Consignment of Mystic store in Mystic, Connecticut, shows up from time to time to help out in the Wickford, Rhode Island, store. His job at the moment seems to be as stabilizer for a short mast.

liveaboards, they've been there and done that. In addition to their large inventory of quality surplus items, they offer a wealth of knowledge and experience and can help customers with most onboard systems. Captain Jim has a background in electronics design and ran a marine service company for many years. He and his crew did annual maintenance and repairs on hundreds of boats in the area. You'll likely get an electrical diagram or some other sketch with your purchase.

Nautical Traders has parts for power and sail, new and used, and — amazingly in this day and age — offers tool rentals. They have prop and shaft pullers, temperature sensors, moisture meters, and crimping tools.

I suspect that once you've experienced the selection and service at Nautical Traders, you'll be hooked. Captain Jim told me of a Greek sailor who comes to the U.S. a few times a year on business but doesn't consider his U.S. visit complete if he hasn't made a stop in Salem to check in with Linda and Captain Jim at the store.

Nautical Traders is open seven days a week in summer and six days in winter.

Marine Consignment of Wickford

Do you ever take a hard look in your storage unit or that corner of your garage piled high with other boat stuff? When was the last time you were able to park both cars in there? Did you ever consider selling some of the spares you still have from two boats ago?

Marine Consignment of Wickford, in Rhode Island, is just the place you need. They will sell your unwanted marine items for you. Most of their inventory





Want to make a nautical statement in your household décor? Need maritime props for an upcoming movie production? You'll find just the right objet at Nautical Traders, at left. Everything from new surplus marine apparel to new and used fenders and compasses is within reach of the sailor visiting Nautical Traders, at right. Three steps in another direction lead to more, much more. How can anyone walk out of a consignment store empty-handed?

Creative alternatives



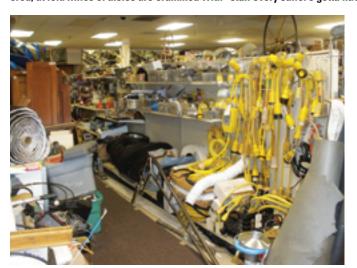


Looking for something for the sailor who has everything? Try an electric palm tree, or something from the "objets de nautical art" section, or, perhaps for the more practical type, a foul weather jacket, at left. Small outboard engines fill one aisle at the Marine Consignment of Wickford store, at right.





Whether practical, historical, functional, nonsensical, or a "mystery part," it's all there at Marine Consignment of Wickford waiting to be discovered, at left. Miles of aisles are crammed with "stuff every sailor's gotta have" and a few things that no right-minded soul really needs, at right.





From electrical cords and adaptors to trailer tires and a whole lot more, Sam and Kathy Angelini, owners of the Marine Consignment stores of Wickford and Mystic, can probably put their hands on it, at left. It's easy to see how a sailor can get lost for hours in a consignment store, at right.

is quality used parts from individuals. The business has moved from its former location in the shipyards and is now in a bigger, better space the size of a grocery store. The Wickford store is easily accessible south of the intersection of Interstate 95 and State Route 4. Sam and Kathy Angelini bought the business in 1998 and now have a location in Mystic, Connecticut, as well.

While I was there talking to Sam, a man came in. From the knees up, he would have blended in with any crowd of New Englanders with his slightly tattered sweater and expensive-looking chinos. However, he was still wearing his sea boots. He brought in a couple of items for consignment. Just standing there, trying to stay out of the way, I could tell he was a regular. He was horse trading for some parts he needed with parts he no longer wanted.

Just inside the front door you'll find dinghies and kayaks and inflatables. Past them is a selection of line and chain and pulpits. In the back are anchors and electronics. The center of the store

is a veritable toy store of fittings and blocks and cleats and other hardware. Farther on is an area of stoves and water heaters. The far left wall has engine parts and outboards. Way in the back are charts and books and nautical knickknacks. There is plenty here for powerboaters and sailors alike.

Marine Consignment uses great software that tracks customer wish lists. When a "new item" comes in and is entered into the computer, a customer who's looking for a similar item can be notified. The website is constantly being improved and it includes an online catalog. The whole crew has a breadth of marine experience and even includes a rigging specialist.

Marine Consignment is open seven days a week and shipping is available.

So, before you buy new or go online to search, consider the extra value that comes along with buying parts from a marine surplus store. These establishments are unsung resources of knowledge and expertise. Not only are good parts available for your boat for

less money, you can brag that you've been recycling and reusing. Δ

Todd Townsend, a sailor and writer, spends his free time working on his Cape Dory 28. He enjoys the support of friends and family like his dad, who retook the Nautical Traders photos.

Resources

Nautical Traders

77 Bridge St., Rt. 1A, Salem, MA 01970 978-745-8514

Marine Consignment of Wickford

7725 Post Road

North Kingstown, RI 02852; 401-295-9709 www.marineconsignment.com

Marine Consignment of Mystic

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Mystic, CT 06355; 860-245-0588

Good Old Boat online directory

www.goodoldboat.com/resources_for_ sailors/consignment stores.php.

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Recycle shrinkwrap and save time and money

by Paul Danicic

t was the worst of times: I didn't know if I would launch our beloved 33-foot Cape Dory, Femme du Nord, in spring. I didn't know if I would be out of a job come haulout time. What's worse, I couldn't remember whether there would be any appropriate beverage aboard when we came up for spring cleanup and fitting out. These thoughts had been brewing all winter.

As it was the height of the recession, I was also brooding about the shrinkwrap we laboriously cover the boat with each fall — could I possibly use it more than once? These thoughts were accompanied by other seasonal worries about whether it would rain or be too windy to get the job done over the one springtime weekend my work schedule would allow.

But after I made it up to the boat in the spring of 2009 — my head cloudy and the car dragging low with all the tools, food, and supplies stowed in the trunk — everything became perfectly clear as I stood on the foredeck under the pale white, shrinkwrap-filtered sun.

For its second winter, Femme du Nord's reused shrinkwrap cover was a bit baggier than during its first winter, but it held up as Paul had hoped.

Cut to a plan

Figuring I had nothing to lose by trying to salvage the shrinkwrap film, I started cutting the film off more carefully than usual. Normally, we slice away and get the stuff off as fast as possible to open up the boat to the sky and sun again.

The experiment he began in the spring and fall of 2009 paid off for Paul Danicic: he bet that he could reuse the shrinkwrap from the previous winter to seal his boat once more. By May 2010, the reused cover was still in good condition, so Paul sliced it apart and saved the plastic film to be used a third time the following fall (2010), giving a whole new meaning to the concept of recycling shrinkwrap plastic after each use.

This is a ceremonial ritual as much as a basic job. But this time, I first thought about how I should do it if I wanted to reuse it in the fall.

To begin, I made one cut athwartships just behind the mast, cutting from the topsides up over the frame to the other rail. I also cut the longitudinal strapping embedded in the bottom of the shrink film we call the skirting. (During the regular shrink process, the skirting strap is run all around the boat just above the waterline. This is normally set up before the shrink film is added as a place under which to tuck the extra film. This strap and the folds of shrink film are then welded together with heat to make a strong edge that can be used to tie the cover to the cradle.)

After making the big athwartships cut, I had two big pieces of shrink film. I then had to make a series of smaller



slices so I could remove them from the boat. One cut was to the mast, one was just off the bow from the waterline up to get around the forestay. I made a horizontal slit each side at the shrouds and a vertical slit for the backstay. You'll note that most of us store our boats with the masts proud here in the northern lake country.

Next, I pulled the two sheets of film off the boat, rolled them up, marked them "bow" and "stern," and stowed the rolls away for the summer in a shed. Each roll measured about 4 feet tall by 2 feet in diameter. I saved the 2 x 4 framing posts and some extra strapping and scrap film.

Pre-shrunk cover

We had a nice sailing season and, come the fall of 2009, we set up the frame as usual, taking care to put the posts right where they normally were. We hauled the rolls up, rolled them out over the frame, and fitted them as tightly as possible, first the bow section, then the aft section. We got everything pretty close to where it had been the year before, pulled the two sections together as tightly as we could, then laid on the tape.

We did not skimp at this stage. We taped both sides inside and out and also made several cross sections for added strength. This took two of us and was the hardest part. You could do it with one, but you wouldn't get the cover nearly as tight. The bow and stern came together well. We needed an extra 2- x 6-foot sheet of film to close the aft portion where we had made the slit for the backstay. It seemed to work and, although it was a little less tight and wrinkle-free than a fresh job, it was still better than some pro jobs I have seen. Our goal has always been to have the end product look as good as a professional shrinkwrap job. We added some strapping to tie the skirting together, tied down the whole thing to the cradle as usual, checked for holes, and were done.

Labor saved

This process saved three major steps in our normal routine:

- The cutting and fitting of new film
- Tying, tucking, and welding the skirting

66 It took us two thirds of a day instead of the full day and a half needed when doing the complete job from scratch. 99



A downward slice at the mast separated the shrinkwrap into bow and stern sections. The stern section was the first to go. Two pairs of hands made an easier job of rolling the used shrinkwrap film into tight bundles. Asher Danicic, age 6, supervised and saved his dad from making multiple trips up and down the ladder.



Creative alternatives

 Moving around the entire boat with a flamethrower, setting up ladders and planks, and tearing out our deltoids
 In addition, we saved the time we usually spend cutting in the 10 vents (God smiles on a sailor who ventilates his boat) and doing "hole patrol" to find and repair the inevitable burn



holes. Since the process of recycling last year's shrinkwrap starts out with a custom-fitted plastic tarp, it took us two thirds of a day instead of the full day and a half needed when doing the complete job from scratch. As a bonus, I didn't worry as much about the weather, although the shrinkwrap must be dry for the taping step. When shrinkwrapping a boat with new film, rain or wind really make the propane shrink process hopeless.

For my recycling project, I bought a roll of strapping and two rolls of tape from Dr. Shrink, at a cost of about \$50, and I have enough left over to do it again. Assuming you reuse the frame, to reuse the old shrinkwrap you only need strapping, tape, and a little film to cover up the tight spots.

Stern and bow, two complete sets are bound up and ready for next year: shrinkwrap film, frame posts, stanchion padding, and strapping. All Paul will need in the fall is a roll of tape, a little shrinkwrap film for making patches, and a dry day for doing the job.

There is the question about the effect of ultraviolet light on the film's strength, but in our region the sun is pretty weak over the winter and many boats have film covers that are still good after a few years on the hard. I have heard of some folks doing this for years on end. I don't think I would do it longer than two or three seasons but, for saving labor, time, and money, reusing the winter cover really worked well for me during the worst of times. \triangle

Paul Danicic directs a small environmental non-profit in Minnesota. In the past, he has managed a YMCA wilderness expedition camp, held a US Coast Guard Masters License, taught sailing, and worked in marinas. He and his family sail their almost 30-year-old Cape Dory around the Apostle Islands.

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Bristol 29.9, continued from page 13

own length like a modern racing design, turn rates were quite acceptable.

We sailed *Rozinante* to windward on both tacks and found that she would point to nearly 40 degrees apparent before feeling pinched. The boat is not particularly tender and would settle in at a heel angle of around 10 degrees in the steady breezes. While the Bristol 29.9 is not a racing design, she was nevertheless fast enough to be enjoyable to sail.

When we eased the sheets and fell off on a beam reach, *Rozinante* accelerated to a steady 5.5 knots, the angle of heel lessened, and minor adjustments in sail trim resulted in small but observable improvements in speed. The motion was comfortable and the helm smooth and responsive.

A carefully sailed Bristol 29.9 will be an adequate coastal cruiser. While some owners do race these boats, the PHRF rating of 183 found on the owners' association website seems very optimistic,

66 When we eased the sheets and fell off on a beam reach, Rozinante accelerated to a steady 5.5 knots. 99



given the boat's moderate displacement and small sail area. Regional ratings vary between 186 and 212. The smaller rig might help the boat sail to the lower rating in heavier winds, but in average conditions, other 30-footers, like the shoal-draft Sabre 30 with a rating of 168, will likely outperform the Bristol 29.9.

Pricing and availability

In late 2010, at least 10 Bristol 29.9s were on the market. The asking prices ranged from \$15,000 for a 1979 boat to \$30,500 for a 1977 boat. It's notable that the highest asking price listed was for a boat from the first production

year. That is testimony not only to the owner's maintenance regimen but also to the overall build quality of the Bristo 29.9. The low asking price for the 1979 model may be due to deferred maintenance. The average asking price among the boats offered was slightly more than \$25,000. ⊿

Tom Wells and his wife, Sandy, own and sail a 1979 Tartan 37, Higher Porpoise. They have been sailing together since the 1970s and look forward to cruising upon retirement. Tom's musical contributions at the Annapolis boat show have earned him the title of Troubadour with Good Old Boat.



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Another swinging solution

Inside and outside viewpoints for a GPS

by Bill Jacobs

When Jim Stedman updated the electronic equipment in his 1972 Cheoy Lee Luders 36, *Song*, he gave considerable thought to what he would like in a GPS. He chose a Garmin 546 Marine Navigator because of its compact size, excellent screen visibility, and the option of a true sonar depth finder.

Jim lives aboard *Song* and does most of his sailing singlehanded. Steering, sailing, and navigation can create a literal three-ring circus. Consequently, he envisioned fitting the GPS on a high-quality movable bracket that would

allow him to see the screen whether he was in the cockpit steering or at the nav station, in the cabin below, plotting his course. Recent issues of *Good Old Boat* have included similar swing-out brackets using PVC pipe (November 2010) and wood with a door-bolt lock (January 2011). For his version, Jim made use of stainless-steel tubing scavenged from discarded dodger frames.

He measured the companionway and the instrument itself and decided on a relatively short horizontal swing arm of 6½ inches. This allows him to dash below past the GPS without





A view of the back of Jim Stedman's GPS shows how he attached the cables to the bracket to allow movement, at far left. When in the cockpit viewing position, at left, the GPS is protected by the closed companionway slide. Jim can swing the GPS into the cabin where it's out of the way and he can view it from the nav station.

having to swing it out of the way. The vertical mounting post is 10% inches, which gives just enough vertical clearance for the GPS to swing under the overhead in the cabin.

When the GPS is in its open (cockpit) position, Jim can see the screen from anywhere in the cockpit, although he does have to lean in a bit while on a port tack. In its closed (saloon) position, it's located directly over his shoulder as he works at his stand-up chart desk on the starboard side of the companionway. He likes to plot courses first on paper charts and transfer his waypoint locations to the GPS. In its open position, the GPS is just over 4 feet away from the binnacle cockpit compass, in compliance with the Garmin installation specifications.

For construction of his bracket, Jim chose 1-inch-diameter stainless-steel tubing, the material in common use for dodger and Bimini hardware. The system consists of:

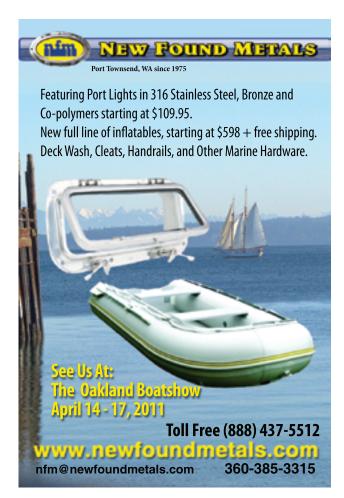
- 1 1-inch ID round base, 3-inch diameter (GPS mount)
- 1 1-inch ID rectangular base (overhead mount)
- 1 1-inch ID tee fitting with two ¼ x 20 stainless-steel thumbscrews (pivot)
- 1 1-inch ID elbow fitting (elbow to GPS)
- 1 1-inch ID end cap (swivel base)
- 3 1-inch OD tubes, cut to measure (bracket arms)

With the exception of the tee fitting, all the parts are fastened with stainless-steel set screws. The tee fitting rides on the downpipe from the interior coachroof, which extends through the tee. The tee swivels on the pipe and is held in place by the end-cap fitting below. It's then tightened in the desired position with the two stainless-steel thumb screws.

Jim did his own work on *Song* shortly after purchasing her in 2009. She was berthed in the Rivertown Boatworks and Marina in Bradenton, Florida, one of the few yards in the area that still allow owners to do their own work. As you might expect, they have a large supply of discarded parts and pieces. Jim was able to scavenge most of the material listed above, purchasing only the flanges and the elbow. This kept his cost to \$60. He cut the 1-inch tubing to length with a pipe cutter and smoothed out the edges with a file. While I was busy photographing his handiwork, he pulled out a West Marine catalog and priced the whole thing out at about \$200.

Jim has a great deal of experience in all manners of construction and finishing, so the attention to detail in this simple installation is elegant. Δ

Bill Jacobs has spent the last 48 years in sailboats and powerboats. His marine photography is displayed in galleries, private collections, museums, and has been printed in boating publications. His articles have been published in boating publications since 2004. Bill winters in Sarasota, Florida, and cruises on a Mainship 34. In the summer, he can be found sailing his Cape Dory Typhoon on Lake Michigan off the shores of Door County, Wisconsin.





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Dual-purpose pillows

Using the décor for storage

by Connie McBride

hen we became the proud owners of our 34-foot Creekmore, we were impressed by her storage space. But when five of us moved our "essentials" aboard, the space quickly shrank. While I chastised the boys for bringing too many toys and Dave for his lockers full of tools, I discovered that I, too, had overestimated Eurisko's capacity. I was left with 10 sarongs and skirts that would not fit in my clothes locker. After questioning why I even owned 10 sarongs and skirts, Dave jokingly gave me the same solution we had been telling the boys, "Guess you're going to have to sleep with them.'

I glanced at the throw pillows that came with the boat. I had planned to throw them away. The stuffing was mildewed, but the shells were salvageable. I smiled, thanked Dave for the suggestion, then got to work.

I cut along one seam of each pillow, removed the stuffing, washed the shell, and sewed Velcro on the inside of each cut edge. Next, I folded the clothes to the width of the pillow and rolled them to fill the shell. I closed the edge with the Velcro strips.

After a few years, we replaced the aging pillow shells with covers designed to go over throw pillows. They have a flap on the back, eliminating the need for Velcro. I have learned not to store anything with zippers or buttons in the pillows because we do lean on them. These clothes-storage pillows may seem uncharacteristically heavy, but they are comfortable and look good. Best of all, I don't have to sleep with my sarongs and skirts. Δ

Connie McBride, her husband, Dave, and their three sons have been living aboard their 34-foot Creekmore, Eurisko, for 10 years. Now that two of the boys are in college, Connie has time to post news and views on cruising on her website <www.simplysailingonline.com>.



When sewing a cushion cover, turn the fabric inside out, fold the small flap over, then bring the long side up past the fold. After it's sewn and turned right side out, the flap keeps the clothes in the cover.



Avoid putting clothes with zippers or buttons in the cushion covers. Sarongs and skirts work best — just ask Izzy.

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Turnbuckle tethers

A good lashing and they won't slack off

by Michael Facius

number of ideas have appeared in *Good Old Boat* recently for locking turnbuckles without using cotter pins in the conventional way (March and July 2010 issues). If the turnbuckles on your shrouds are close to each other or, better yet, in line with each other, here's an even simpler way to keep them from unscrewing: a line tied between the two. It works for us on our C&C 30. \triangle

Michael Facius is Good Old Boat's publisher and advertising manager and sails a 1979 C&C 30, Callisto, out of Bayfield, Wisconsin, on Lake Superior. He and his wife, Patty, have been sailing since 1986, beginning with an O'Day 20.









Nauticat 36

1984. Ketch motorsailer, 90-hp Lehman/Ford diesel, active owners' group. Finnish built, solid everything, well-loved. 98 photos on website. Beautiful, incredible boat. In CT. \$114.500.

Alexander McCandless 860-687-6089 alecmccandless@gmail.com https://sites.google.com/site/ nauticat36forsale/



Pearson 35

1976 K/CB, 4' draft. Better than new! New since 2003: standing rigging, sails, S/S dbl lifelines/ gates, stanchions, windlass, Treadmaster non-skid, dodger, Bimini, screen enclosure, all systems, reverse-cycle AC/heat, Frigoboat fridge/freezer, custom winter cover, and much more. In MD. \$48,000.

Haskell Rover 717-393-9489 hcroyer@comcast.net



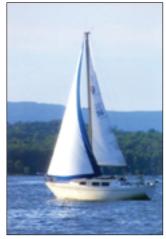
Pearson 30

68

1971. Great Lakes freshwater sloop w/personality. Sherwoodgreen trim. Replaced winches w/2-speed self-tailing '09. Up-todate replaced electronics, good

sails, RF 150 genoa, good rigging and lifelines. Interior updated and clean, no-smoking cabin. Full headroom w/hatch dodger. Good-running Palmer. Photos, documentation, and current insurance survey available. Northport, MI. \$11,400.

Henry Ort Slim2685@gmail.com



Columbia 28.9

1977. Exceptional. Many upgrades. Perfect Atomic 4. Catbird seats, flat-screen TV. New Bimini top, new propane stove, new Fortress anchor. Very good mainsail. Like-new RF headsail. A/C. On Tennessee River near Chattanooga, \$11,000.

> Fred Greeson 423-488-9987 airdive1@bellsouth.net



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tained classic is a beauty. Fully equipped for bluewater sailing. More detailed specifications, pictures, and survey reports (in and out of the water) available. Royal Newfoundland Yacht Club, Conception Bay South, Newfoundland. \$59,900.

Winston Fiander 709-895-6578 wfiander@nf.sympatico.ca



Ericson 27

1978. Freshwater Lake Superior boat since new. Turnkey cond. Exc comfort at sea, anchor, and dock. Ideal for singlehanding. Enclosed head. Edson wheel. Dodger. Lazy-jacks. Exc cabin cushions. 5 berths, 2 hatches, folding dining table, 6'1" headroom, stove. Cockpit Bottomsiders. New nonskid. Water, holding, fuel tanks in vgc. 28-hp engine + Indigo prop = torpedo boat under power! Wisconsin. \$11,500.

Bob Wander 763-498-4403 soarbooks@aol.com www.bobwander.com/sailboat

Tom Colvin 38

1964 aluminum ketch. Tom Colvin design, professionally built in Hawaii. Bluewater boat. Volvo diesel, recent sails, traditional layout, Lofrans windlass, and more. In MA. Priced to sell. \$34,000.

sailaketch@gmail.com



1978. Totally restored and updated with new engine, sails, topsides and deck paint, hatch, new head and holding tank. Great for racing (10 winches) or cruising. Many sails, feathering prop, bulkhead heater, and more. Surveyed this spring: exc. Beautiful inside and out. \$32,000.

Chris Antipas 631-689-2560 chrisantipas@optonline.net



Pacific Seacraft Orion 27

1982. Wonderful pocket voyager; a true good old boat. Owner has lovingly put thousands of dollars and hundreds of hours into this big little boat. She's nicely equipped in a simple and well-thought-out manner. Must sell; all serious offers considered. Annapolis, MD. \$45,000.

Karl Westman karl.westman@ogilvy.com www.yachtworld.com/ boats/1982/Pacific-Seacraft-Orion-Mkii-2167479/ Annapol



Pearson 35

Classic 1970. Bristol cond, continually upgraded, fresh water, always stored inside. Astounding complement of sails, RF jib, Monitor windvane, Edson WS, Garmin GPS, inflatable w/5-hp OB, dodger on S/S frame. Impeccable teak interior, full headroom, new cushions, fridge, Force 10 propane stove, vacuum head, pressure water. 3 anchors, full-hull rubrails, upgraded Atomic 4. Ready for extended cruising. 7 jack stands. Owner retiring. Beaver Island, MI. \$24,000.

Gray Sweeney 480-483-9456 Gray@asu.edu

Cape Dory 28

1977. Classic Alberg-designed sloop, Yanmar 2GM20F 16-hp diesel. Rigged for singlehanded sailing. Harken RF on 150 genoa, spinnaker, Garhauer traveler, VHF, AP, Origo stove, Bimini, Magma grill plus extra gear. 2010 upgrades include bottom paint, new bowsprit, Cutless bearing

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www.goodoldboat.com/resources for sailors/sailing classifieds/

and brightwork. In water, ready to sail. Slip paid to March '11. Selling because I've moved up to a Pearson 33. Annapolis, MD. \$16,500.

Dixon Hemphill dixonh1925@cox.net



Sarabande 41

1985. French-built deck-saloonstyle sloop. Beautiful, unique interior layout. Very bright and airy. 2 cozy cabins, 2 heads, plenty of teak. Ideal for liveaboard or distance cruising. Sails great, comfortable at anchor. Needs some tinkering but ready to go. A remarkable boat! Long Island, NY. Priced reduced to \$47,500.

Jim Beatman 631-862-8766 pbeatman@optonline.net www.brainchildstudiosnyc.com/ downloads/boat.pdf



Lafitte 44

1979 cutter. Rugged bluewater cruiser, good sailing characteristics, seaworthy, seakindly Perry design. Good cond. Quality upgrades, good sail inventory. Yanmar 4JH turbo diesel under 1,800 hrs. Nice teak interior, large galley. Strongest hull, deck construction. Needs some work for A+ cond. Good value for right owner. See article: http://bluewaterboats.org/lafitte-44. Long Island, NY area. \$95,000.

Ken 917-453-1343 smkbklyn@aol.com



Southern Cross 28

1984 cutter. Exc cond. Always in fresh water. Set up for single-handed sailing. Many improvements since '03. Nanni 14-hp diesel w/360 hrs. Main '11 and genoa '09, new dodger '10 w/3 handrails. All deck holes back-filled w/epoxy. Lavac head, Taylor's gimbaled stove, Airex core hull reduces condensation. Internal halyards, LEDs, Lewmar 40 STs, folding prop, Harken furler, attached ladder, and more. Lake St. Clair, MI. \$25,000.

Lee Nyboer lnyboer@sbcglobal.net



Dana 24

2005 cutter rig, hull #345. Bristol. Extensive upgrades. Yanmar 3YM20 w/Max-Prop, '08 North main and genoa, asymmetrical w/ ATN, Harken 2-spd winches and furling, removable inner forestay, dodger, Raymarine C80, knot/ log, Icom VHF w/remote, Balmar 80A alternator w/Balmar Duo Charge and regulators. Varnished interior, Force 10 stove, Delta #25 w/custom bow roller, 3-AGMs, Tillerpilot, Forespar pole, spares. Always stored indoors and loved. Cleveland, OH. \$102,850.

Alan Zelina a2sail@yahoo.com

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1986 racer/cruiser sloop. Classic C&C design. Original sails, extra jib, gennaker. Completely refurbished interior. DuPont Imron plus clear-coat protection on hull. B&G instruments. Upgraded electrical, high-amp alternator and inverter. Electric head, handheld shower. Galley w/Hillerange propane stove, fridge/freezer, double sinks, plenty of storage. Exc liveaboard and/or racing boat. Little River, SC. \$59.900 OBO.

Lewis Gravis 704-896-9735 indgov@bellsouth.net



Nonsuch 36

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



Rawson Pilothouse 30

1981. Dual steering stations make pilothouse model ideal for Pacific Northwest cruising. Exceptional teak interior. Maintained in top condition with frequent upgrades. Perkins 4-108 diesel. Storm sails and cruising spinnaker, B & G instruments, radar, VHF, Garmin GPS, Dickinson diesel stove and 2-burner propane cooktop, 45 lb CQR anchor w/350' chain. Includes charts, tools, safety equipment, spares. Anacortes, WA. See website for full equipment list. \$39,000.

Henry Reents henry@reents.us https://sites.google.com/site/ nissedal4sale/



Stone Horse 23'4" 1974 Edey & Duff. Hull #53. Second owner. Two-headsail rig, both RF, 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



Ranger 28

1979. Gilded Lily. Feature boat Sept. '06 issue. Extensive upgrades include deck hardware, winches, engine update (Atomic 4), traveler, interior, etc. New bottom paint. On the hard, ready for inspection and transport. Atlanta, GA. Price reduced to \$12,500.

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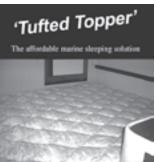
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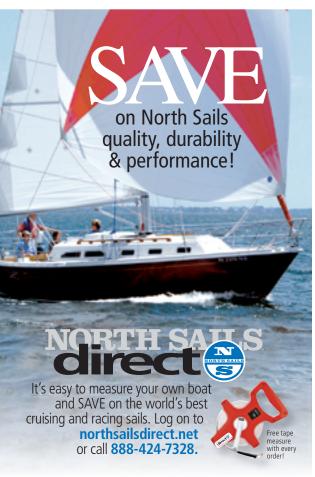
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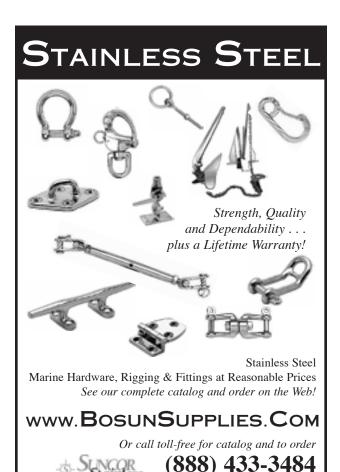
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The seasons of our lives

Even where it's endless summer, the weather rings the changes

by Connie McBride

y son's education is lacking. Now in his ninth year of homeschooling, he's earning A grades in physics, Spanish IV, and algebra II yet he doesn't know the seasons.

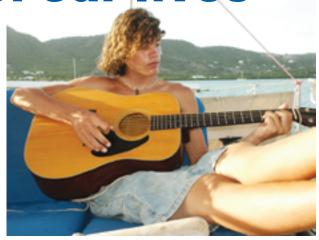
For the last eight years, we have been sailing around on our 34-foot Creekmore, *Eurisko*, mostly in the Caribbean. So it's not that his life doesn't have its different seasons — it does. Most important, there are hurricane and non-hurricane seasons. He can recite the official dates when these



begin. He knows Florida was hit with four hurricanes in 2004 and that Emily devastated Grenada nine months after Ivan surprised that island nation and all the boaters who were there (because everyone *knew* Grenada was south of the hurricane belt).

His life is also dictated by tourist season, closely related to hurricane season and coinciding with work season. When the hurricanes are gone, the tourists come and it's time for us to work a few months to make the money to live on while we hide during hurricane/non-tourist/non-work season.

Other seasons in his life are also weather-related. To him, winter means not snowmen and skiing but, rather, Christmas winds and surfing. In summer on St. Croix, the winds go south; fall



in Trinidad means we haul out. But now that we are in Panama, ask him what season August is in and he'll tell you, "It's in the rainy season."

Singing the changes

I have tried to help him by employing the teaching technique of words put to music, using the old James Taylor tune, "Winter, spring, summer, or fall..." Instead he recites, "Spring, summer, winter, and fall. Right, Mom?"

As his mother and teacher, I feel doubly responsible for his lack of knowledge. Where did I go *wrong*? How could my 17-year-old not know that spring follows winter, that leaves turn beautiful colors in the fall, and that summer (not the entire year) is warm?

My husband laughs at my concerns, "I certainly am not going to apologize for not exposing him to

seasons." I suppose what he experienced during his childhood more than makes up for this particular lapse in his education. He knows which trees sloths like to hang out in and can identify an oropendola by its call. He has smelled land before we could see it after 10 days at sea and heard dolphins breathing on moonless nights when the only way to locate them was by the bioluminescence they sparked as they danced along beside us.

Besides, I have to agree with him when he asks, "How am I supposed to remember all that?" After all, his memory is so bad, he still thinks he *likes* snow. Δ

Connie McBride writes about cruising topics on her website <www.simplysailingonline.com>. See page 66 for her bio.





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