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Issue 92 September/October 2013

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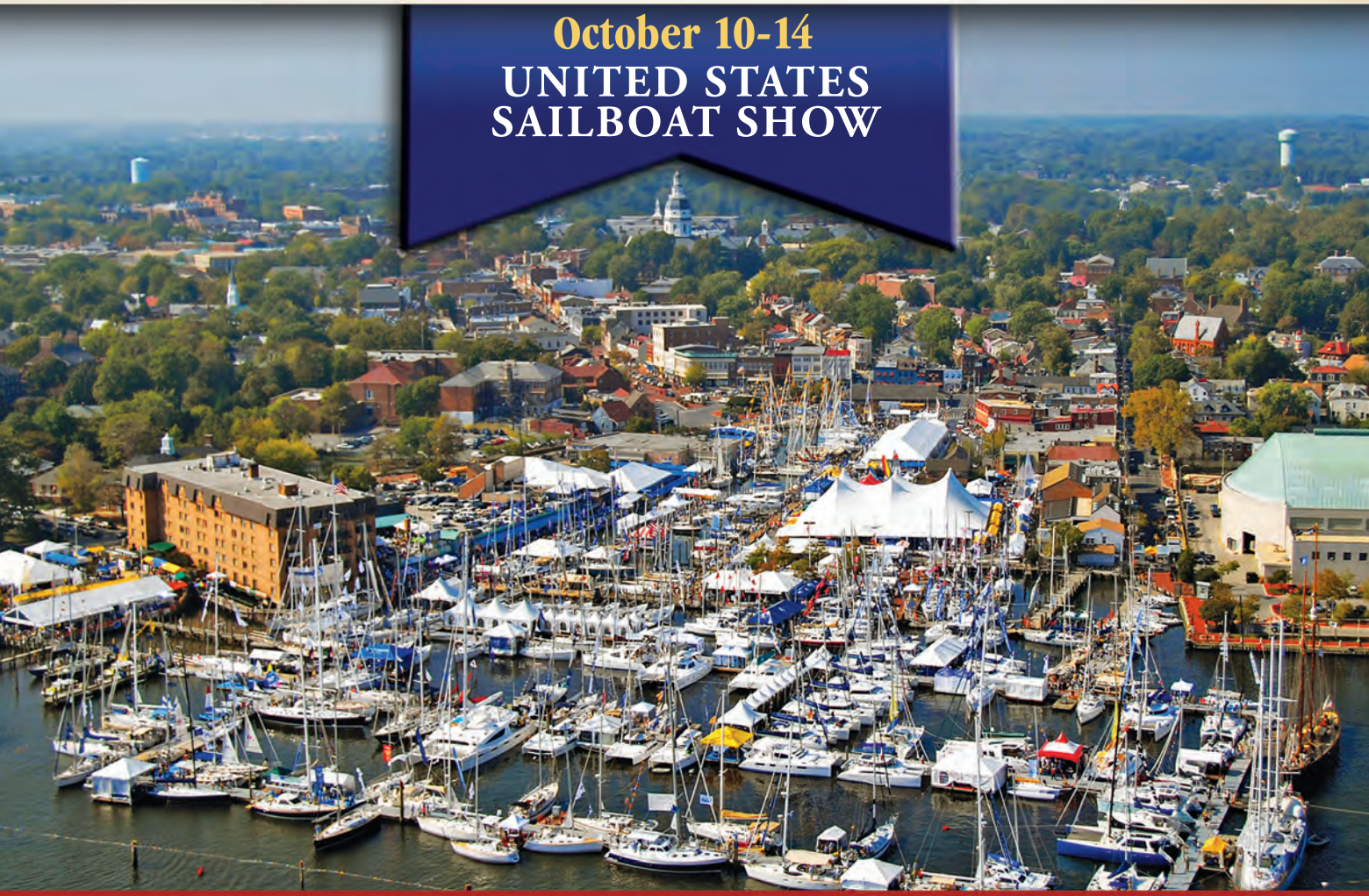

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On the cover . . .
Paul Rezendes took this photo while cruising the coast of Maine. He and Paulette Roy had anchored in Carver Cove when *Jewel* arrived late in the day. The next morning, Paul went rowing in the calm water and caught the cutter living up to her name.

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Your boat on our cover

We love our peaceful scenic covers but we also love action shots of boats and sailors. Send your best shots of your boat (or your friends' boats) in action to karen@goodoldboat.com. Find more information about what we're looking for on our Press Gang News page: **www.goodoldboat.com/reader_services/news**.

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With only six issues a year, we can't possibly publish everyone's boat on our cover but we do have a consolation prize. We'll post your boat's photo on our Reader Photos page, **www.goodoldboat.com/reader_services/reader_photos.php**. Every two months we choose our favorite and publish it in the magazine's Mail Buoy section. If yours is selected, we send you a Good Old Boat ball cap or T-shirt.

Lists: marinas and yacht clubs

We just updated a *huge* list of yacht clubs and marinas. If yours isn't there, please let us know and we'll add it. Send your addition to Karla: karla@goodoldboat.com. Are you looking for a yacht club or marina? Maybe we can help. **www.goodoldboat.com/resources_for_sailors/suppliers_directory**. Look under "Services."

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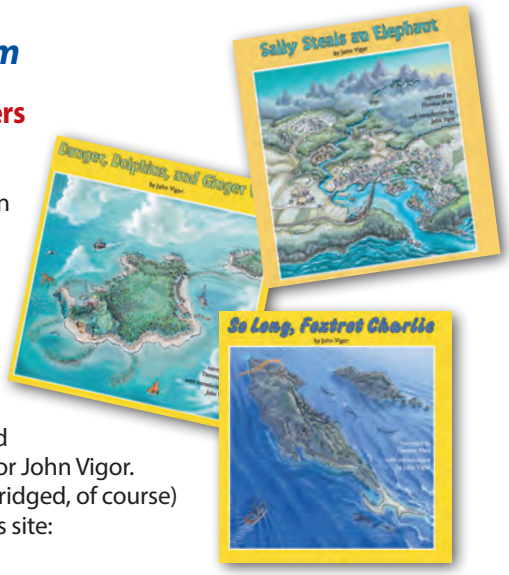
Audiobooks for youngsters



Among the very first audiobooks we recorded are some great sailing adventures written for sailor kids aged 8 to 12 or so (unless your child or grandchild is precocious, naturally). Inspired by the classic *Swallows and Amazons* series of books for youngsters, these were written on this side of the pond by well-known sailor and author John Vigor. These three audiobooks (unabridged, of course) are available on our downloads site: **www.audioseastories.com**.

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Sailboats . . . where was I?

Oh, yes . . . sailboats are a distraction

BY KAREN LARSON

Sailboats are clearly a distraction in the lives of sailors. At *Good Old Boat* we see a predictable and seasonal pattern in our readers' attention spans. Once boat-launch season and summer rolls around, you submit fewer articles, write fewer email messages to us, list fewer boats in our classifieds, visit our website less often, and buy fewer T-shirts and back issues. We're on to your habits. This is even true if you happen to live in Florida or Texas or along the Gulf Coast, where — we're reminded regularly — the seasons are reversed.

My observation is that they're extended, yes, but *reversed*? Not exactly. Northerners know you have winter down south. We've all shown up as tourists there with nothing but a bathing suit, shorts, and a few T-shirts, only to learn the truth about Florida's (and other states') winters.

My argument stands. In the height of winter (let's say December through February), we hear a whole lot more from our readers, including those many miles south of the Mason-Dixon line. Likewise, in the height of summer (that'd be June through August), we lose touch with those who know without a doubt that their season is short and over all too soon.

Once our boats are launched (or, with a nod to the southerners, even if their boats have been left in the water year-round but are now actively in use once more), the volume of communication drops precipitously. We're OK with this. After the first year or two in this business, we learned that the company wasn't going under when summer arrived. We learned to hold our breath and you'd all come roaring back by late fall (or perhaps a bit later for those folks with enviably long sailing seasons).

Once we understood the trend, it worked out for us. What's going on is that your sailboats distract you. The short season in which to use your sailboats causes you to look outside for things to do, as long as it's not mowing the lawn. Gone is your interest in hiding behind your computer to escape the blustery winds. Your energies are instead diverted toward sailboat tasks, no matter how mundane, and to hoisting your sails to catch every cat's-paw. This works out beautifully for the crew at *Good Old Boat*. For the most part, we're scattered all over the United States and Canada working in our home offices. The vast majority of us are located "more or less northish" and are subject to the same seasonal compulsion. Your distraction with your boats means that we can feel free to be distracted by ours. We're not lonely. Your absence gives us the time we need for sailing too.

> "Your distraction with your boats means that we can feel free to be distracted by ours."

Based on 15 years of observations of "sailorly habits," my postulation is that our sailboats are a distraction. But part two of my theory is that they're an incredibly valuable distraction. Our sailboats offer a way to get away from the computers, the stresses of our jobs, families, and the news. Many of us even sail out of range of our cell phones regularly, truly a blessing in disguise. Our sailboats are a way to delay any responsibility for mowing the grass, tending the yard, maintaining the house. They are without a doubt our getaway vessels.

Our sailboats offer an important distraction and means of escape to a world where priorities are clear and the number of channels competing for our attention is reduced to the few that matter. Out on the water is where we have the solitude to ponder, to think creatively, and to focus on what's really important in our lives.

Sailboats are indeed a distraction of the very best kind. For my part — since I know this attention-span deficit is temporary and that you will rediscover *Good Old Boat* and the thread between us when the north winds begin to blow — I will savor the quiet season and revel in every day on the water.

Turkey Shoot shot, hoppers, hats,

Seen at the Turkey Shoot Regatta

This photo is of my 1978 Fisher motorsailer, *Wayward Wind*, passing the replica of the square-rigged *Godspeed* during the Turkey Shoot Regatta on the Rappahanock River in the fall of 2010. The Turkey Shoot is limited to boats built to designs more than 25 years old. The *Godspeed*'s design date really fits this description — she was one of the ships that brought the original settlers to Jamestown in 1607. She is regularly berthed in Jamestown, Virginia.

–David Herndon, White Stone, Va.

The 2013 Hospice Turkey Shoot Regatta will be held October 11-13, hosted by the Rappahannock River Yacht Club on Carter Creek in Irvington, Virginia. The regatta website is www.HospiceTurkeyShootRegatta.org. Latell Sails/Ullman Sails Virginia, in good-old-boat-friendly Deltaville, is handling registrations. Find the form on its website: www.latellsails.com/turkey-shoot-regatta-2013.

–Editors

Hatch covers

I just read your Quick and Easy article, "Hatch Covers," in the May 2013 issue. I wanted to bring to your attention a relatively new product that I placed on my boat about a year ago. It's a rigid hatch cover made of expanded PVC that attaches to the lens with a fastener that uses very strong double-sided tape. Compared to my old canvas hatch covers, I have found it does a better job in keeping out the heat as well as the sun. The company that sells them is Outland Hatch Covers and the product can be seen at its website: www.outlandhatchcovers.com.

–Amy Roberts, via email.

Island hoppers?

While going through a glossy, larger-format sailing magazine allegedly devoted to the cruising community, I was struck by how horribly inappropriate some of the reviewed and advertised sailboats were for the serious cruiser. I won't even mention the open-transom craft. But I do seriously question those sporting "dinghy garages" and the drop-down swim decks. Without the ability to mount self-steering gear to these admittedly gorgeous vessels, I cannot see how they can be called anything other than elegant island hoppers.

–Al Fink, Denver, Colo.

A hat for all reasons

I believe I've found the perfect sailing hat after seeing and trying on many. For me, the perfect hat is wide-brimmed, floppy, flat-topped, rugged, lightweight, light in color, well-ventilated, and has a chin/back strap. I found the Bimini Bay Boca Grande Mesh Wide Brim Fossil 1117F hat (khaki) for $19.95 through Amazon, sold by Fisherman's World. It also comes in Moss (1117M). Add $5.00 shipping for a nice value.

The hat design meets all of my criteria, especially the full mesh sides of the crown. A particularly nice feature is the dark green underside of the wide brim. The "one size fits most" concerned me when ordering, but it turns out to work quite well. The black cord on the back of the crown can be adjusted with the cord toggle, offering the optimum adjustment on the fly. In actual field conditions (i.e., on the boat), the hat fully met expectations. I heartily recommend this "good old hat." I just hope it floats . . .

–Ferman Wardell, Charlotte, N.C.

Carlyle Lake, and hooked

Electric propulsion

Your fine magazine has been an inspiration to me. First, the feature on the Contessa in one of your early issues and later, many upgrades too numerous to list except one that was an inspiration: "Electric Auxiliary Conversion" by Joe Steinberger in the May 2011 issue. Last year, I pulled out the old Farymann diesel that was on its last legs and installed an electric motor whose batteries are recharged with a wind turbine. It is fantastic for daysailing and gunkholing. (I hardly ever used the iron genny anyway. At the end of a season the fuel tank was usually three-quarters full.)

My motor gives me 4 hours at cruising speed, so even if I have to get back at a specific time (very rare) I don't have a problem. With the prevailing winds we have in Nova Scotia, the batteries recharge overnight and then I am ready to go again. Now I have no maintenance worries and no diesel smell! I hope that other real sailors (not motor sailors) find this as a solution when their old diesel or Atomic 4 dies.

–Ben Weeks, Prospect Bay, Nova Scotia

Carlyle Lake boat photos

I was a bit surprised and very pleased to see not only one, but two pictures of boats from our lake, Carlyle Lake, Illinois, in the group of cover photos in the June 2013 Newsletter. We have been sailing on Carlyle since 2007, first in our 1986 Compac 27 and now in our 1982 Tartan 42, which we are prepping for cruising the East Coast by the end of this summer. The lake has four marinas on it, each of which is full of sailboats and salty characters. The wind and weather are fickle and challenging, the depths and obstructions even more so, and anyone who can sail there can sail anywhere. If you want to see more of our lovely boats, go to the website I keep for pictures of just Carlyle boats: www.svcarlyle.blogspot.com.

Thanks for a wonderfully entertaining newsletter.

–Deb Akey, St. Louis, Mo.

Hooked — we know, eh!

I just finished the article "Getting Hooked on Sailing" (July 2013). My God! I didn't know whether to laugh, close my gaping mouth, or look over my shoulder to see if Richard Smith was in the room spying on me. I've been pegged. I bought my first sailboat, a Sirius 21, in 2009, and have gone absolutely stupid about sailing. When I launched this spring, I told my sailing buddy that I almost felt giddy about being back in the water. He said, "I know, eh!"(we're Canadian). It's like coming home again and again.

–Daryl Ramage, Brandon, Manitoba

July 2013 was our 15th anniversary!

Now you can change your name to "*Good Old Magazine*!"

–Dudley Price, Raleigh, N.C.

Saildrive propeller

I have just finished reading the article by Bert Vermeer in the July 2013 issue where he describes fitting a saildrive instead of a regular shaft. I enjoyed this article, but have to point out one factual error. Bert says that the prop fitted is a Gori, but the photo shows a Radici prop, which is the one that Beta Marine supplies. See it at the Radici website (click on EN): www.elicheradice.com/folding-2-blades-propellers.

–Stanley Feigenbaum, Beta Marine US Ltd, Arapahoe, N.C.

Not your normal subscriber

I may be a little different from your normal subscriber. I have owned two trailerable sailboats in the past, an Aquarius 23 and a Seaward 25. Currently, Sam Devlin is finishing a stitch-and-glue 28-foot pocket-cruiser sailboat for me. I did things a little differently from most DIY boat-builders: I built the hull, then took it to a builder to finish, rather than having a hull built for me to finish.

My son and I enjoy your magazine for all the very practical, usable, how-to information in each issue. Also, we like to read the articles about how different people have improved or rebuilt their good old boats. There is always something you can learn from those. My new boat will be trailerable but will stay in the water most of the season. It will

continued on page 64

Caroline Walls sent this surprising photo of a "somewhat enhanced" red flasher at the entrance to Worton Creek on the Eastern Shore of Chesapeake Bay. This lady of the lake, or perhaps one of Ulysses' mythological sirens, was attached, Caroline says, with a cable. We bet this mask caused a lot of double takes among passing boaters.

The Pearson 34-2

A handsome cruiser with highly evolved amenities

BY GREGG NESTOR

Pearson Yachts updated several of its more popular designs in the late 1980s, releasing them as what is commonly referred to as the -2 series. The Pearson 34-2 was an upgrade of the Pearson 34 (introduced in 1983) and one of the last models to be introduced by the company. Its three-year production run began in 1989 and ended in 1991 when Pearson Yachts closed its doors.

Design

The Pearson 34-2 is one of 43 boats that Bill Shaw designed during his nearly three-decade tenure at Pearson Yachts, first as a designer and later as general manager. Bill believed that the -2 series was an improvement on the over-marketed "cruiser/racer" theme, so the Pearson 34-2 is not a direct knock-off of the earlier Pearson 34. The 34-2 is beamier and carries that beam farther aft. It also has a longer waterline, a flatter bottom, and more ballast. The fin keel and centerboard option of the Pearson 34 was replaced by a wing keel and elliptical rudder. The most dramatic difference between the two boats lies in their interior accommodations — they are like night and day!

While Pearson Yachts built fewer than two dozen 34-2s, Bill's design did outlast his company. In the mid 1990s, a group of investors started a company called Cal-Pearson. One of the first boats they introduced was the Cal-Pearson 35, which was nothing more than a 34-2 with a redesigned interior and a sugar-scoop transom (the 34-2 has a walk-through transom). The company didn't last long and built only a handful of the boats.

Construction

The hull of the 34-2 is hand-laminated solid fiberglass above the waterline and balsa cored from there to the keel. Around all the through-hulls, the coring was replaced with solid fiberglass. The deck is balsa cored and joined to the hull by means of a vertical flange that is often referred to as a "shoebox" joint. The overlap is chemically bonded and mechanically fastened and covered with a vinyl rubrail.

Interior features include varnished teak woodwork, a teak-and-holly sole, and a fiberglass headliner, except in the saloon where it's vinyl. There is considerable fiberglass reinforcement around all the structural bulkheads. The solid lead wing keel is externally mounted and the rudder is a foam-filled fiberglass sandwich. All deck hardware is through-bolted with backing plates.

Don and Sheila Brown's Pearson 34-2 sails like a, well, *Banshee*, top of page. The wide sidedecks benefit from inboard shrouds, above.

Hull #7

While on a trip to the Chesapeake, Don and Sheila Brown stumbled upon a Pearson 34-2 for sale. It was hull #7, built in 1989. Don says what drew them to the boat was "... its clean lines and drop-dead good looks." Sheila added that the spacious interior and the island berth in the forward cabin were a real plus. A close inspection and a survey confirmed that the boat had been reasonably well cared for and that there were no major issues. The deal was finalized and the boat was trucked to the Great Lakes.

That was a little over three years ago, and Don and Sheila have been upgrading *Banshee* ever since. Don installed a dripless shaft seal and replaced the lifelines. He also installed

> “. . . the footwell is narrow enough to provide good bracing.”

new portlight lenses and removed all the deck hardware, filled the holes with thickened epoxy, redrilled them, and rebedded the hardware using butyl tape. Not wanting to neglect the creature comforts and aesthetics, they had custom cockpit cushions made, installed a stereo system, and added new vinyl boot and accent striping and custom graphics. Future plans include the purchase of a cruising spinnaker, having the mainsail cleaned and serviced, and possibly refinishing the sole in the saloon.

On deck

Other than a pair of 9-inch open-throat cleats and an ample anchor locker, the foredeck of the Pearson 34-2 is free of obstructions and is a spacious and stable platform when working forward is required. The shrouds and genoa tracks are placed well inboard, allowing the crew easy movement along the relatively wide sidedecks. A midship cleat, with adjacent captive chock incorporated into the teak toerail, is fitted on each side of the boat.

Four of the boat’s five hatches are on the cabintop. The largest hatch is over the forward compartment, the next largest is above the saloon, and the two remaining smaller hatches add light and air to the head compartment and galley. Two Dorade vents with large stainless-steel cowls flank the saloon hatch and a sea hood protects the companionway’s sliding hatch. Three opening portlights and one deadlight are mounted on each side of the cabin trunk.

The cockpit measures 6 feet 4 inches overall, 5 feet of which is forward of the binnacle. The curved and angled seating with its 14-inch-high backs conforms well to the human body and the footwell is narrow enough to provide good bracing. Lockers are provided beneath the seats port and starboard. The starboard locker is cavernous. Even though it houses the water heater, refrigeration compressor, the 20-gallon plastic holding tank, and the access to the 22-gallon aluminum fuel tank, there’s still plenty of room. The port locker is very shallow because of the headroom over the quarter berth below.

Flanking the helmsman’s hump-shaped seat are a propane locker to port and an icebox to starboard. The seat is removable to give access to the walk-through transom and deck shower. A swim ladder is attached to the hinged panel that closes the walk-through transom. Water entering the cockpit is contained by a bridge deck and escapes through four ¾-inch drains — two in the sole and two in the curves of the seats.

Aggressive non-skid, a 2-inch teak toerail, stainless-steel bow and stern pulpits, dual lifelines, and two 5-foot sections of teak handrail complete the on-deck safety package.

Belowdecks

The interior layout of the 34-2 and other models in the -2 series is an evolutionary refinement of previous Pearson models. It is targeted at families or possibly two couples cruising together.

Rather than the conventional V-berth, the prominent feature in the forward cabin is an island double berth. It doesn’t offer much to brace against when the boat is heeled but it does make getting in and out of bed easier. Because of the access on either side, it’s also easier to make up than a traditional V-berth. Beneath the berth are four large drawers, storage bins, and one of the boat’s three plastic water tanks. His-and-hers hanging lockers with bureau tops, a bookshelf, and port-and-starboard alcove storage outboard and above give this cabin the feel of a true stateroom. A pair of opening portlights and the forward hatch provide ventilation and light, while a two-panel teak door and a scrap of sole add privacy and a changing area. Headroom is 6 feet 3 inches.

Two opening ports, two fixed ports, and the overhead hatch make the saloon bright and airy. Every port is equipped with a built-in translucent

The companionway is protected by a bridge deck and the hatch slide by a sea hood, at left. It’s also recessed into the cabin trunk, so it’s tucked even farther under a dodger. The swim ladder, center, is attached to a panel in the transom that hinges down to provide easy access from the cockpit to the ladder, at right.



While the saloon has a classic arrangement and proportions, at left, the forward cabin has an island double berth. The top of the icebox doubles as the chart table, center. Aft, the head compartment is on the starboard side and a quarter berth, with lots of room and little privacy, occupies the port side, at right.

accordion shade. This cabin's main features are an L-shaped settee on the port side that converts into a double berth, a centerline drop-leaf table, and a straight settee berth to starboard. Above each settee are double bookshelves with fiddles and a locker with a sliding door. The starboard locker is specifically designed as a spirits locker. Beneath each of the settees is a small amount of stowage space and a plastic water tank. This brings the total water capacity to 70 gallons in three tanks. A pair of teak grabrails is overhead and headroom is 6 feet 5 inches.

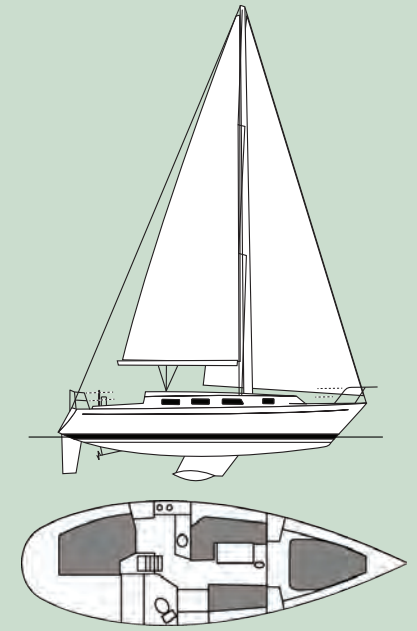
Aft of the settee on the port side is the L-shaped galley. In addition to numerous drawers, cupboards, and bins, the galley is equipped with a gimbaled two-burner propane stove and a single stainless-steel sink with pressurized hot and cold water. An overhead hatch and an opening portlight ventilate and illuminate this area nicely.

Opposite the galley and slightly forward on the starboard side is a large icebox/chart-table combination. The chart-table top lifts to reveal a convenient compartment for storing plotting instruments and charting accessories and, beneath that, a large icebox. Above this area is the electrical panel with some space for electronics.

Aft of the galley is a near-queen-sized quarter berth with stowage bins beneath it and a shelf outboard. Although half of the berth has sitting headroom and the entire forward portion is quite open, the part under the cockpit could get a bit claustrophobic.

On the starboard side, directly across from the galley, is the head compartment complete with a separate shower stall with a seat and a wet locker — true luxuries on a boat of this size. Other amenities include a molded vanity and sink with hot-and-cold pressurized water, a full-length teak-framed mirror, several lockers, and a hamper. An opening portlight and an overhead hatch provide light and air.

Pearson 34-2



Designer:	William Shaw
LOA:	34 feet 6 inches
LWL:	28 feet 2 inches
Beam:	11 feet 6 inches
Draft:	4 feet 0 inches
Displacement:	11,800 pounds
Ballast:	4,950 pounds
Sail area:	550 square feet
Sail area/disp. ratio:	17.0
Disp./LWL ratio:	236
Fuel:	22 gallons
Water:	70 gallons
Holding:	20 gallons
Engine:	30-hp Yanmar diesel
Air draft:	46 feet 8 inches

The rig

The Pearson 34-2 has a masthead rig with double swept-back airfoil spreaders. Four sets of shrouds (caps, intermediates, and double lowers) and a split backstay support the keel-stepped mast. The wire-to-rope halyards are led inside the mast and all control lines are led aft through clutches to a pair of Lewmar 40 self-tailing winches mounted one each side of the companionway on the aft cabintop. The mainsail is sheeted mid-boom to a traveler mounted on the cabintop just forward of the companionway. The primary headsail winches are self-tailing Lewmar 43s mounted on the cockpit coamings.

Under way

The boat is responsive to its helm, can exceed hull speed when surfing with a following sea, and points reasonably high. With a fresh breeze and attention to sail trim, the boat will sail quite well

at close to 35 degrees apparent wind. In about 15 knots of wind, she will easily do 6 to 6.2 knots. The boat is also an acceptable light-air performer.

Don says *Banshee* performs better than expected. He has been caught in some bad weather and was quite comfortable with the boat's performance. As a result, he's confident that, with prudent seamanship, a Pearson 34-2 will take care of its crew in a blow.

The Pearson 34-2 has a 30-horsepower Yanmar 3GM30F diesel for auxiliary power. Coupled to a two-blade prop on a 1¼-inch bronze shaft, it easily moves the boat at hull speed. Access to the engine for maintenance is very good.

Not many of these boats are raced, and the only PHRF rating is 138 seconds per mile, which compares favorably with the Sabre 34 at 135. To put a given boat in perspective, it's always useful to look at similar-sized J/Boats, which are known more for performance than for cruising comfort. The J/34 generally rates from 114 to 117.

A separate stall shower in the head compartment is rare on a boat the size of the Pearson 34-2.

Things to check out

As is the case with most balsa-cored boats, delamination of the core due to water saturation is a potential problem. Don says he found "soft spots" around some of the deck hardware, most notably the lifeline gate stanchions.

Another area to check out is around the portlights. Don found a couple of them leaking and applied fresh sealant when he replaced the lenses.

Having done a bit of investigation around the head and its holding tank, Don is confident that the persistent head odor is coming from saturated hoses, rather than anything more serious. Replacing the hoses (with solid PVC pipe where possible) should relieve the problem.

Conclusion

The Pearson 34-2 is an attractive, well-mannered, and versatile craft. Its hull and rigging conform closely to the latest thinking in conservative cruising boats at the time it was built. It was marketed as a family or two-couple cruiser. Not many of them were produced before the company went out of business. Today, they usually sell for around $55,000.

Gregg Nestor is a contributing editor with Good Old Boat. *He has authored three books on sailing, including* Twenty Affordable Boats to Take You Anywhere *and* The Trailer Sailer Owner's Manual. *He's currently contemplating his fourth, maybe an e-book.*

Comments from owners of the Pearson 34-2

"I am the original owner of Pearson 34-2 hull #9, which we commissioned in the spring of 1989. It has been a good boat over the years.

"We liked the idea of the self-tacking jib but the boat was under-powered with it, so we added a 150 percent jib, which is much better. We have replaced the ports and hatches as the originals did not hold up. Our forward cabin has carpet and wood along the hull sides. The carpet gets dirty easily and is a pain. We have left the ice box as is but suspect that the insulation is poor.

"We upgraded our electrical system and added a dodger and Bimini. The boat is fun and easy for my wife and me to sail. Our lazy-jacks make sail management easy."

–Joe Spears,
Hilton Head, North Carolina

"Some positives of the 34-2 are: a solid well-built hull with excellent hull tabbing on bulkheads and stringers; the shoal-draft wing keel; it sails well in light winds; it's very comfortable offshore in big seas; it's commodious below-decks without sacrificing sailing ability.

"Among the negatives are limited access to the steering quadrant, plumbing, wiring, and deck hardware. The icebox is poorly insulated and the teak sole is always wet at its base. I found average-to-poor installations of chain-plates, deck hardware, and stanchions. The deck scupper should be farther aft to allow water to drain properly.

"I enlarged the access to the steering, cut access panels for hardware, and simplified runs for electrical and plumbing where I could. I tabbed furniture to the deck in the saloon to add strength and reduce noise.

"That said, I have owned my 34-2 for 18 years and have been very pleased with its design and sailing characteristics. We have over 17,000 sea miles in Florida, the Bahamas, and the Caribbean and never have had a breakdown or serious failure."

–Ron Schultz,
Winthrop Harbor, Illinois

"I only purchased my Pearson 34-2 last fall but I am experiencing a problem. The deck drain is not at the lowest point and water runs down to where the coaming meets the toerail. The diesel fill cap is located here and, if the fuel cap and/or O-ring has deteriorated, water will get into the tank. The original filler caps are no longer available, so the entire deck plate will have to be replaced with a new plate to match the available filler cap size. This has turned out to be expensive.

"My experience with the Pearson 34 has not been ideal so far. I want to try her out on the Chesapeake shortly."

–Vern Malin,
Bloomsburg, Pennsylvania

Standing Rigging Terminals 101

When it's time to replace them, think swageless

BY DON LAUNER

Most good old boats were delivered from the factory with swaged terminal fittings on their standing rigging — the shrouds and stays. Those fittings are now old and perhaps no longer reliable. With all sailboats, there comes a time when the standing rigging should be replaced and it's better to tackle this job too early rather than too late.

There are two options. You can hand over the job to a rigger and write a check or you can do the job yourself. If you decide to do the work yourself there are, again, two options. You can replace the entire cable and both the upper and lower terminal fittings or, if one of the terminal fittings and the cable are still in good condition, you can replace just the damaged or failing terminal fitting.

Lower terminals first

Swaged fittings on the upper ends of shrouds and stays tend to last longer than those on the lower ends. This is due to the wire inside the swage in an upper terminal fitting being protected from the elements, to a degree, by the swage itself.

At the lower end, however, rain and spray (in coastal areas this is saltwater spray) tend to run down into the swage, causing corrosion and, possibly, freezing problems in winter. Consequently, the lower terminals on the standing rigging are most likely to need replacing first.

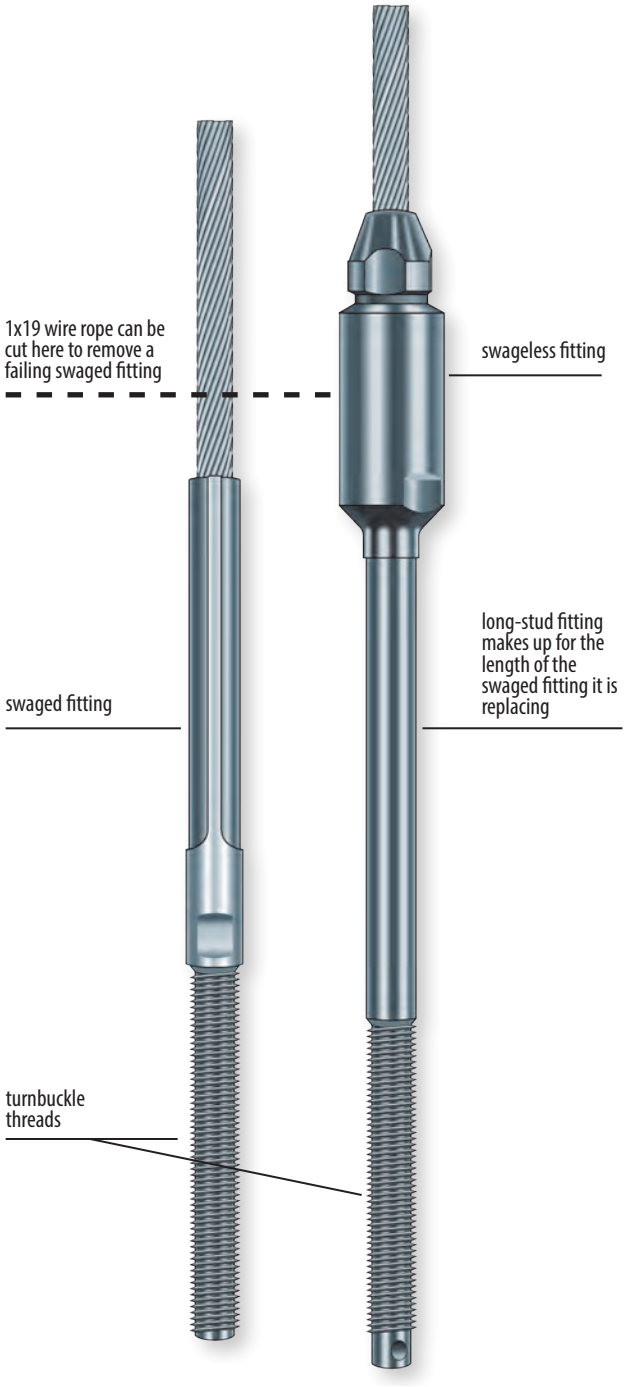
From swaged to swageless

For the do-it-yourselfer it's a good idea, when replacing a terminal fitting, to consider swageless fittings. Not only are they easy to install using simple hand tools, but they also have greater longevity than swaged fittings with the added bonus that they can be reused by just replacing the small inexpensive internal cone. The only tools required when installing a swageless fitting are two wrenches and either a hacksaw with a fine-toothed blade or a cable cutter.

If you plan to replace the 1x19 cable as well as the terminal fittings, it's just a matter of measuring the pin-to-pin length of the rigging and constructing a duplicate. If the old rigging cable still looks reasonably good, coil it up and keep it aboard . . . you never know.

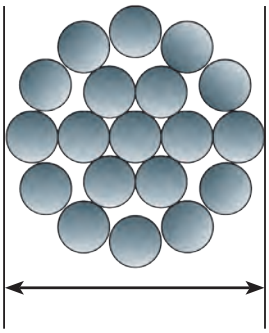
If only one of the terminal fittings needs to be replaced, there's a problem. The swage fitting is considerably longer than a comparable swageless fitting so, when a swaged fitting is cut off, the cable will be too short. But, not to worry, special swageless fittings, known as long-stud fittings, are made to solve this problem.

The long-stud fitting for the lower terminal has a long extension between the right-hand thread on the end that screws into the turnbuckle and the swageless fitting for

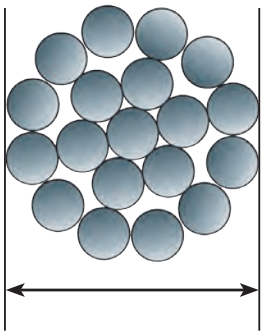


LAYOUT AND ILLUSTRATIONS BY TED TOLLEFSON

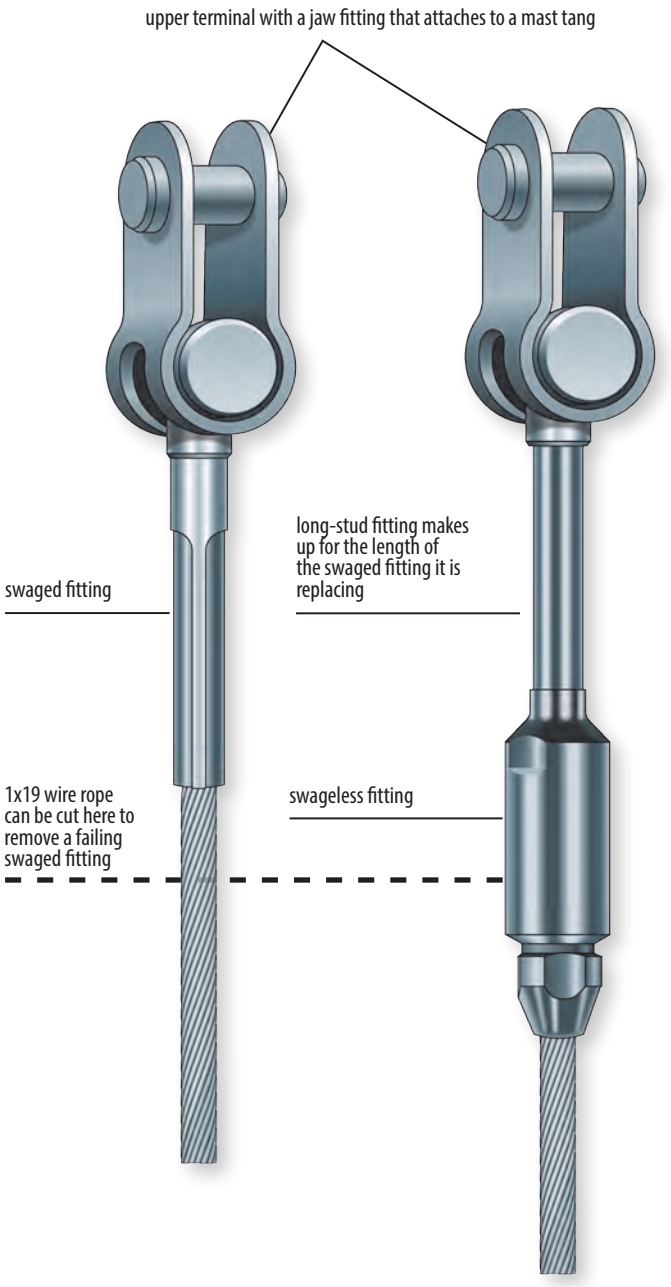
Replacing the lower fitting on standing rigging.



Measure the diameter of wire rope from strand to strand.



Measuring across the "flats" will produce an incorrect result.



Replacing the upper terminal fitting on standing rigging.

the 1x19 cable on the other end. This makes up for the length of the removed fitting and the resulting reduced cable length.

If the upper fitting needs to be replaced while still retaining the old 1x19 cable, the replacement terminal should also be a long-stud fitting. The upper fitting usually has a jaw end that attaches to the mast tang and a long extension between that and the swageless fitting for the 1x19 cable.

Ordering parts

There are several manufacturers of swageless fittings. When you place an order for parts, certain specifications have to match the old rigging if you are to receive the correct fitting. For the lower terminal, the thread must obviously match that of the turnbuckle. This is almost universally a right-hand thread. The turnbuckle thread might be metric or UNF, depending on where your boat's rigging was manufactured. (UNF threads are exactly the same as those called SAE before thread dimensions were unified.) The diameter of this threaded section must be measured in millimeters for metric threads or in fractions of an inch for UNF threads.

The diameter of the 1x19 cable must also be known. This requires measuring the diameter properly, as illustrated in the diagram above.

When the upper terminal is being replaced on the original 1x19 cable, the swageless fitting must be specified to match the cable diameter. Also, whether reusing the old cable or fitting new, the diameter of the clevis pin in the jaw of the fitting must match the diameter of the hole in the mast tang.

Don Launer, a Good Old Boat *contributing editor, built his two-masted schooner,* Delphinus, *from a bare hull. He has held a USCG captain's license for 40 years and has written five books. His 101 articles through November 2011 can be downloaded as a collection from the Good Old Boat download website, www.audioseastories.com. Look under Archive eXtraction Download.*

Defining a pilothouse

Shelter and a helm station are key features

BY ROB MAZZA

It's a challenge to define what we mean when we refer to a pilothouse on a sailboat. Is inside steering a definite requirement? What about the distinction between a sailboat with the option of inside steering and a true motorsailer that has the primary (and often only) steering station inside the pilothouse? For this discussion, let's narrow our focus to production sailboats with raised saloons surrounded by enlarged windows that could possibly be used for inside steering.

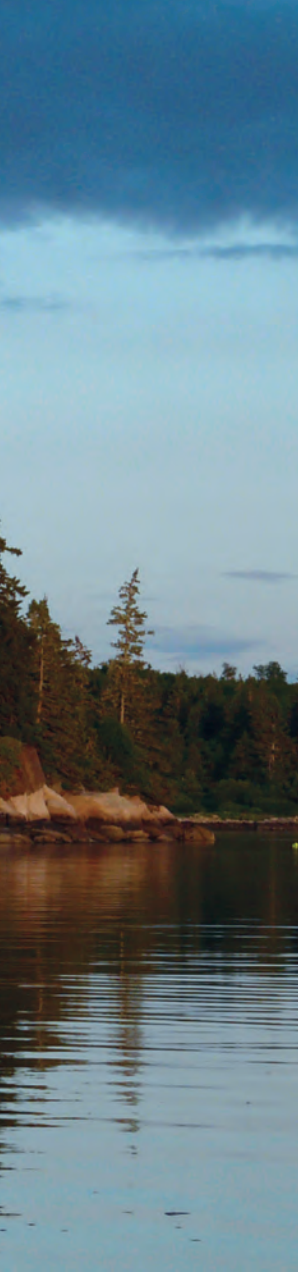
Today when the term pilothouse is used in reference to a sailboat, most people envision an open aft cockpit adjacent to an enclosed raised pilothouse. The purpose of this pilothouse might not be that of command center. More often than not it provides an elevated seating area that gives occupants a view of the world at eye level through large windows. In today's market the combination of shelter from the elements and a better view of the surroundings has big appeal. The same level of accommodation could be achieved belowdecks but, short of mounting large fixed ports in the hull, the view outside is severely constrained.

The primary attraction of pilothouse sailboats may be that they dispel the feeling of being entombed in the bowels of the boat. But even if an inside steering station is not installed, it is still possible to steer from this sheltered area with the help of an autopilot remote control.

I know it's not a direct evolution, but it is interesting to plot the transition or graduation in house shape from conventional trunk cabin, to doghouse, to raised-saloon, to low pilothouse, to hard dodger, and finally to true primary pilothouse. It's instructive to look at these configurations to better define each and what it achieves.

Doghouse – A doghouse as understood today is a portion of the trunk cabin that's raised to create an area of increased headroom below. In traditional wooden boatbuilding, a doghouse was in fact a raised part of the house that sheltered

***Brunch*, at top of page, a Pearson 36 Pilothouse owned by Brian and Caroline Coffay, is a handsome example of a pilothouse sailboat from the early 1980s.**



the sliding companionway hatch. The term now describes the whole raised area of the aft portion of the house. This doghouse configuration first became popular on smaller boats. It was seen in a subtle form in the Morgan 34 (featured in July 2013) and is most obvious in the famous Alberg 30 (featured in March 2006). There is seldom a change in levels in the cabin sole below and usually no attempt to use this added space for anything but greater headroom, usually in the galley, and possibly to admit more light by fitting the larger ports, usually fixed, allowed by the increased height of the cabin sides. The forward accommodations may have less than full standing headroom.

Raised saloon – In a raised-saloon configuration, the cabin sole and the seating areas are both raised in the area beneath an enlarged doghouse. This allows views outside at sitting as well as standing eye level through large, usually fixed, ports in the house sides. While forward-facing fixed ports sometimes give the appearance of a windshield, no attempt is made to steer or command the boat from this region. It is purely an improvement in the living spaces. This was a common approach in the many Hunter designs I worked on in the mid-1990s. This design incorporated windshield-style fixed Plexiglas ports in the slanted portion of the deck between the forward house and the area of house above the raised settee. The Hunter 336 and 376 are good examples from that period, even though the head and galley were more often than not located in this area of increased headroom and there was no corresponding step up in the sole height. So much for consistency!

Low pilothouse – When the forward windshield of the raised-saloon configuration becomes larger and more vertical and can be used for steering from a raised helm seat, you have the beginnings of a pilothouse. This inside steering station, however, is definitely the secondary, bad-weather helm location used for operation under power. The primary steering station used when sailing is still outside in an aft cockpit. The interior helm station usually has engine controls and gauges as well as a wheel.

Hard dodger – This configuration provides a sheltered area at the forward end of the cockpit, not unlike that achieved with a larger removable fabric dodger. The hard dodger is permanent, often providing greater (sometimes standing) headroom than a fabric dodger. In a motorsailer configuration, especially a traditional layout from the 1930s and '40s, the primary and only steering station may well be under this fixed dodger or open pilothouse.

Pilothouse – In my view, the proper pilothouse configuration houses a helm station that is equal, if not superior to, the aft steering station. The cabin sole in the area of the pilothouse is raised to the extent that sitting eye level is now at window level and the windows are substantially larger than in any other house configuration. The ultimate pilothouse configuration, of course, would encompass the primary, and possibly only, steering station, something that is not uncommon in motorsailers.

Performance expectations

Accompanying this transition from the conventional full-length house to a full pilothouse configuration is a transition in emphasis from performance under sail to performance under power. Changes may also take place in the sail plan and in the underwater configuration. The sail area may decrease due to reduced rig dimensions or through the use of in-mast furling mainsails (with their reduced roach) and smaller furling headsails. The underwater configuration, with shoaler-draft keels and larger-diameter three-blade fixed props, may become less oriented toward upwind sailing. The transition from sailing yacht to motorsailer naturally includes everything in between.

The classic designs of William Hand, Jr. are, to this day, the finest embodiment of the motorsailer concept. The Northeast 400 and Bruckmann 50 from Mark Ellis Design are more contemporary composite-built examples. From the point of view of good old boats, true motorsailers are few and far between. They do exist, though, and a review of that small but distinct community may well be in order in the future. For present purposes, let's look at the challenges involved in the pilothouse configuration and see what compromises have to be made. In the November issue, we will look at comparative numbers to see how a selection of pilothouse boats compare.

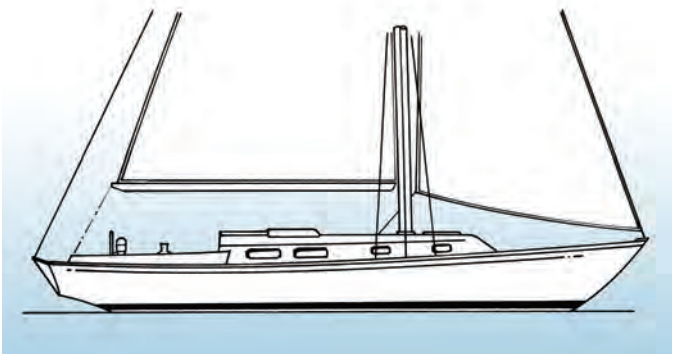
Pilothouse parameters

What distinguishes a true pilothouse from a raised saloon is the presence of an operational and functional inside steering station. As autopilots and joystick steering grow in popularity, it is possible that what actually constitutes a steering station might change. Furthermore, if inside steering is the requirement for a pilothouse configuration, then the view forward through the windshield in the pilothouse has to be acceptable.

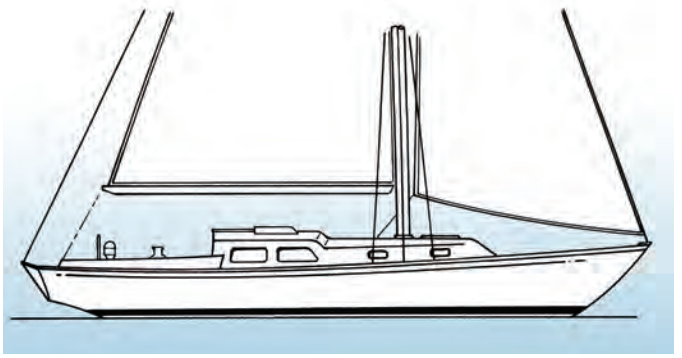
The primary goal of a pilothouse is to provide a dry and sheltered steering station inside a vessel. During the Great

Age of Sail, all vessels were steered and commanded from aft on a raised quarterdeck where the helmsman and the officers of the watch had an unencumbered view of the sails and the vessel's direction. In some cases, a small wheelhouse was added to protect the helmsman from pooping seas but, generally, everyone on watch was exposed to the elements.

It was only with the introduction of steam that the command center moved forward to the "bridge" between the port and starboard paddle boxes. From there, the officers of the watch had a better view of the vessel, especially when docking or maneuvering through locks. Pretty soon,



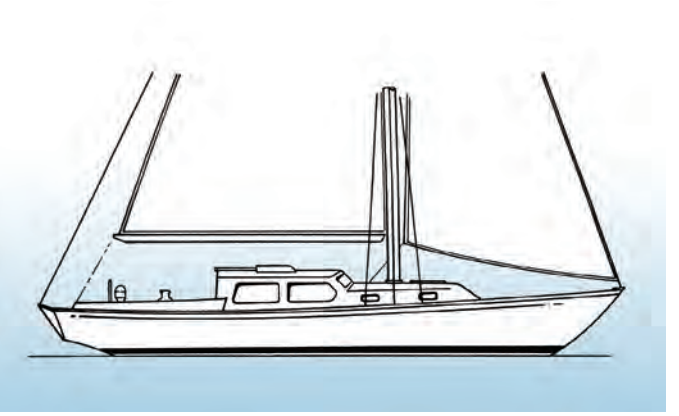
Trunk cabin – A low profile allows the best visibility from the helm. A collapsible fabric dodger can be added to shelter the area around the companionway.



Doghouse – A raised area of the trunk cabin is often employed on smaller boats to allow greater headroom in the galley (where it's needed most).

the wheel was moved forward to this location and, as the importance and dependence on sail decreased, and the use of steam power became more reliable and dominant, the bridge was enclosed and housed both the maneuvering and command center of the ship. The aft steering station was only maintained as a possible backup in case the primary steering in the bridge was damaged or destroyed.

On a recreational sailboat, it's still important to be able look up and see the sails, even with acres of Bimini canvas protecting us from the sun. There is also no doubt that an aft steering station gives you a much better feel for the motion and direction of a vessel, not to mention access to sheets, halyards, and reefing lines.



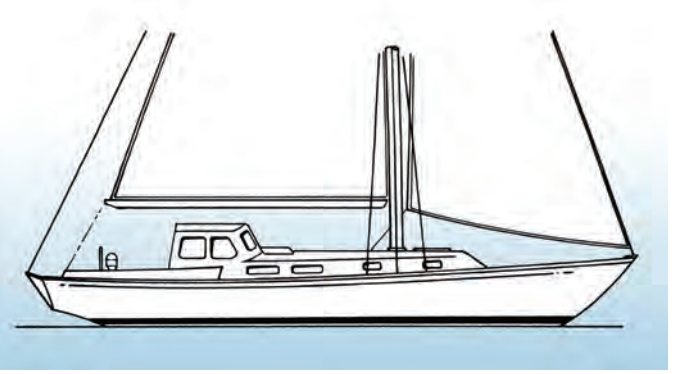
Raised saloon – The cabin sole and seating are raised to provide a view. Inside steering and better visibility forward could make this a low pilothouse.

Oh, for a pilothouse!

Having said that, I have sometimes wondered — while powering along in the pouring rain, with water leaking down the neck of my foul weather gear and my glasses in my pocket because in the rain I could see better without them (and that isn't very well) — whether there wasn't a better way . . . especially when I would see a powerboat glide by with everyone inside, dry and warm. It is at times like this, and while anchored in chilly northern climes at the beginning and end of the season, or on damp drizzly days, when a dry and warm inside accommodation with good all-around visibility seems mighty attractive. Enter the pilothouse.

Nothing on a sailboat comes without a price, so let's look at the competing goals that must be resolved in a good pilothouse design.

Visibility – The problem when steering from an inside steering position while under sail is that the sails are not easily visible. Furthermore, since the inside steering station is inevitably to one side, when that side becomes the leeward side, the heeling hull will completely obstruct the view to weather and the genoa may well block all visibility to leeward — not a good combination. Let's assume, therefore, for the sake of this discussion, that sailing is the preferred mode of propulsion, that sailing is performed best from a



Hard dodger – Although open at its aft end, the dodger provides shelter over a steering station. It's rare in production boats other than a few motorsailers.

separate aft steering position, and that powering (especially in bad weather) is best done from an inside steering position.

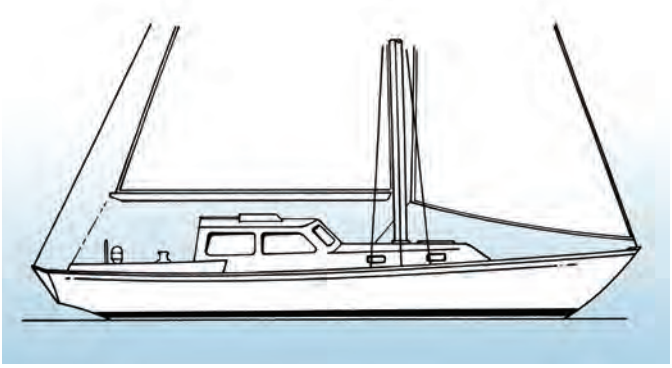
Herein lies the conflict. To allow good visibility from the aft helm, the pilothouse should be as low as possible. Otherwise, it obstructs the line of sight forward from the cockpit, especially if you're looking through the windows of the pilothouse itself. A low pilothouse is less than ideal for visibility from the inside steering station, due simply to the lower line of sight and the smaller area of the windows and windshield. It's necessary to get the balance right between the height of the aft cockpit and the height of the pilothouse in order to achieve good visibility from the inside and outside steering stations while maintaining an attractive and well-proportioned profile. As with all things aesthetic, size does matter. The bigger the boat, the easier it is to achieve this attractive profile. Pilothouse configurations always are more attractive on 40-footers than 35-footers.

It is possible to achieve a lower pilothouse by eliminating the forward house completely and opting instead for a flush deck forward of the pilothouse. In the 30- to 40-foot boats, freeboard will have to be increased substantially to achieve standing headroom forward of the pilothouse, perhaps resulting in a rather slab-sided chunky-looking vessel. This approach could also result in compromised visibility forward.

One way to achieve better visibility forward over the pilothouse is to raise the cockpit sole, which also has the benefit of more easily allowing the accommodation plan to move aft into this area, especially in larger boats. This is especially true if the engine and tanks are located under the raised sole in the pilothouse area, rather than aft under the cockpit. Again, size allows more flexibility in interior arrangements, especially when it comes to headroom.

All this raising of soles and houses, of course, has a negative effect on stability as the center of gravity also rises and the boat becomes a tad less stable.

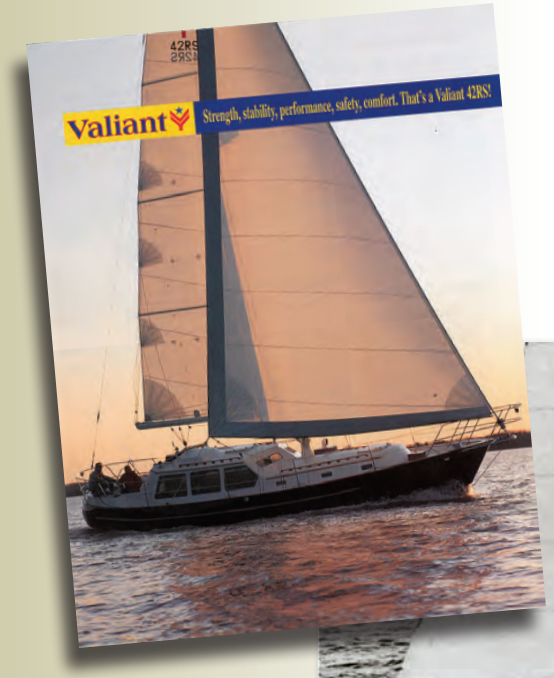
Sail handling and control lines – Assuming that it is best to lead halyards, sheets, vang, and reefing lines aft to the cockpit, achieving this goal is made more complicated by the presence of the pilothouse. Halyards and reef lines can be easily led aft on top of a conventional trunk cabin (even under a canvas dodger) to winches on the cabintop aft, all



Full pilothouse – The cabin sole is raised in the pilothouse to provide full visibility forward and possibly in the cockpit to give a view over the pilothouse.

Designers approached the pilothouse concept in different ways, as these brochure photos show. The compact Gulf 32 was designed by Bill Garden in 1965. The Nauticat 331, introduced in 1997, has more of a motorsailer look. The Scepter 41, from 1982, benefits from its length to achieve a relatively low profile and a near-flush foredeck.

THANKS TO SAILINFO.COM FOR IMAGES FROM ORIGINAL BROCHURES



Valiant Yachts introduced the Valiant PH 40, below, in 1981. It had an inside steering station that justifies its pilothouse name. The later Valiant 42 RS, at left, did not have inside steering, so would fall into the raised-saloon category.

accessible from the cockpit. All these lines must be led around the pilothouse somehow or be confined forward at the mast, making it necessary to leave the cockpit to shorten sail.

Using furling headsails, with the halyard winch mounted on or near the mast and the furling line led aft along the rail, is a partial solution, but a furling mainsail, whether in the mast or in the boom, still requires lines to be led aft closer to the centerline. I have seldom seen control lines and winches, other than traveller control lines, mounted on the top of a pilothouse. While lines can be led around the pilothouse, it does tend to crowd all the control lines, stoppers, and winches onto the coamings.

Interior arrangement – The whole purpose of a pilothouse is to allow seated occupants a view through the windows of the surrounding scenery and the helmsman a good view from the helm seat. By definition, that requires the cabin sole to be elevated. The raised sole has the added benefit of easing entry from and egress to the cockpit, since there is less difference in height between the two levels even when the cockpit sole has been raised substantially to permit a view over the pilothouse.

However, the raised sole in the pilothouse means you now have a split-level interior, necessitating a step down to the lower level forward and possibly another to a separate cabin aft under the cockpit. The raised sole in the pilothouse also means that there is insufficient height under the sidedecks to allow sitting headroom, which forces the settees and the interior farther inboard. This raised level is best utilized as the saloon for sitting and dining, forcing the galley to the lower level forward. This isn't necessarily bad, since it can still be open to the upper saloon area if designed properly. The galley can even be located in the pilothouse, but the presence of the pilothouse windows eliminates upper storage lockers and the sidedecks do force the galley farther inboard.

The raised sole in the pilothouse has the added benefit of creating a large and easily accessible engine room below. Access can be through removable panels in the sole or from forward after removing the ladder and the panel to which it is attached. This area also allows for generous tankage and battery capacity. Locating the engine amidships frees up the space under a raised cockpit sole for an aft cabin, as mentioned previously.

Structural considerations – The principal concern with pilothouse configurations is the ability of the large expanse of windows to withstand capsize or wave impact. Although the development of high-strength tempered glass capable of stopping bullets, together with equally strong adhesives, has made this no longer the concern that it was, the subject must be seriously addressed at the design and specification stage on new boats and reviewed in some detail on existing boats, depending on their intended use.

The other concern is the amount of open area under the pilothouse in the amidships area of the hull. The housetop is often unsupported and often carries the mainsheet loading. This can be addressed in new boat construction with a well-engineered deck structure using modern composites,

> "The larger the boat, the lower the pilothouse can be in proportion to the length of the boat."

but it's something that should be looked at in any review of an existing boat.

Attractiveness – It is important to most sailors that a boat be attractive. How the designer handles all the challenges mentioned so far and how much emphasis he puts on the requirements of inside steering generally — as opposed to warmth, shelter, light, and the view from the pilothouse while at anchor — will go a long way in determining how attractive the boat's profile will be.

A lot of so-called pilothouse configurations are merely added options on existing production models. These generally are raised saloons and do not offer inside steering. As a result, they can be lower in profile and more attractive. Size is a major factor here: the larger the boat, the lower the pilothouse can be in proportion to the length of the boat, thereby reducing its apparent height. Size, or more specifically, longer length and lower cabin sole, can also allow a flush deck configuration forward of the pilothouse, resulting in a nice appearance as seen in the Pearson Contessa 44. This is probably the smallest size that can get away with this configuration.

Some designers do pilothouses very well. I have to give a nod to Chuck Paine in his Bermuda series built by Morris Yachts and in his Bougainvillea series built in aluminium by Kanter Yachts. However, the Morris is a 48-footer and the Bougainvilleas start at 60 feet LOA, so they have size on their side. The lines of Chuck's Cabo Rico 42 do take this fine aesthetic close to the range we're considering. Bob Perry also has done a number of attractive pilothouse configurations, starting with the Valiant 40, and Ted Brewer's 42-foot Troubadour design should also be mentioned.

Now that we have laid the groundwork on what constitutes a pilothouse configuration and discussed the inevitable compromises that result, we'll take a closer look at specific pilothouse yachts in the next issue to see how they compare in comfort and performance. We might also look at some production fiberglass motorsailers. This is a much smaller demographic but, as the boating population ages, it is gaining a very interested following. I am writing this on a cold damp drizzly afternoon in May. In these conditions, it's hard to deny the allure of a well-designed pilothouse.

Rob Mazza is a Good Old Boat *contributing editor. As well as being a lifelong sailor he spent much of his adult life designing sailboats, beginning at C&C Yachts when that company was building what are now very popular good old boats.*

Sail plans for cruising

PHOTOS BY GAYLE SUHICH; PHOTO OF *Joli y mon* , FACING PAGE, BY GARY FELTON

Variety is the spice of the sailing life

BY TODD DUFF

One of the greatest aspects of offshore and coastal cruising is meeting other like-minded souls out there who are sailing the world's oceans, dealing with the same logistics and difficulties, and reaping many of the same rewards as we are. There's no question that mixing with the local people, blending in with the cultures of the various countries we visit, learning what we can, and sharing what we have with others is largely what cruising is about . . . but it is also about meeting other cruising sailors.

In port, we often socialize with cruisers from many different backgrounds, countries, and ways of life. Yet, as we all find ourselves in the same places doing the same sorts of things, bonds are formed. At any cruiser bar or beachside potluck, sooner or later the conversation will drift to boats, rigs, and systems.

In the many years we've been sailing schooners and ketches, one of the questions we have been asked most frequently is, "Why do you sail a ketch (or schooner)?" The answer we give is the result of analyzing many factors. Having sailed most of our lives, we have accumulated experience with many different rigs.

Rigs have changed

Thanks to modern sailmaking materials and sail-handling equipment, we are seeing bigger and bigger boats being handled by smaller and smaller crews. It is not uncommon to come across 50- or 60-year-old couples sailing 50- or 60-foot yachts relying entirely on electric or hydraulic furling and anchoring systems.

When we began cruising, I remember clearly thinking, "I'll never have a roller-furling jib. They always fail!" In the early days of roller furling, it was often jokingly referred to as "roller failing." As this equipment has improved, due to a proliferation of manufacturers competing to build the best and most reliable systems, things have sure changed and for the better. We now believe that roller-furling jibs are probably the single most important safety system developed for sailboats during the 20th century. Roller furling keeps the crew off the bowsprit and, when combined with in-mast mainsail furling, keeps the crew in the cockpit for all sail handling, something that can be a real safety factor in high winds and big seas.

Conventional wisdom maintains that a sloop is the most efficient cruising rig for upwind work. Cutters — so popular in the days before reliable roller furling became commonplace — are becoming extinct as they are being replaced by roller-headsail sloops and rigs referred to as double-headsail sloops that have two, and sometimes more, roller-furling sails near the stem ready to be used in different conditions.

Few ketches, so popular in the 1970s and early '80s, are built anymore. When they are, they are rarely smaller than 50 feet. Most people elect to have a single stick in an effort to create the most efficient and simple rig for upwind

All the sails except the fisherman on the Farrington 52 staysail schooner, *Kai Kanani,* were on roller furling. When Todd owned this boat, his 12-year-old son Alex could sail her using the electric winches and furling gear.

Todd's fiancée, Gayle Suhich, owned the S&S-designed Hughes Northstar 48 yawl, *Jolly Mon*, above, and ran her as a day-charter vessel in the Caribbean for 17 years. Todd once owned the brigantine, *One World*, below, seen here entering Ensenada Honda in Culebra, Puerto Rico, at the end of a four-day passage from Curaçao.

work. That most long-distance cruising is (don't we hope?) accomplished on a reach or downwind, and that these modern designs often rely on very sophisticated, expensive, and complicated sail-handling gear, is considered by most to be "normal" these days. As a result, little thought is given to some of the more traditional rigs that graced anchorages and sailed offshore and coastal waters in years gone by.

Having owned quite a few sloops, several cutters and ketches, two schooners, and a brigantine over the years, my fiancée, Gayle Suhich, and I usually have a different view from most about the best rig for cruising when this topic comes up at the beachside discussions.

Sloops

Sloops, as we all know, are simple. If you can sail at all, you can probably make a sloop perform reasonably well, and if your goal is to have the simplest rig, a sloop is a good choice. For many people, sail handling and trimming is a bother. Many who race sloops would say that having two sails for going upwind and a spinnaker for downwind work is quite enough of a challenge. Just getting the most out of those two or three sails is satisfying and fun for many, and that's OK.

Cutters

It's generally accepted that cutters were developed as a way of offering easier sail handling and greater flexibility in balance than a traditional sloop rig could offer. With the cutter, a smaller jib could be bent on and a staysail could create the extra sail area needed to provide good drive, but each sail was smaller and therefore easier to handle. In the days before roller furling became commonplace, this was a good alternative to dealing with large jibs that had to be dropped in a hurry in squally or rapidly building conditions. The concept of the cutter is brilliant in that, as the sails are reefed and dropped, the sail plan comes

> "Reaching is a ketch's strong point, and we all hope our cruises will provide a lot of reaching."

well inboard. The mast is also more adequately stayed than it typically is with a sloop rig. The downside, of course, is that the rig has more windage, an inner forestay that gets in the way of easy tacking, and it's more complicated, making it a more expensive rig to maintain.

Ketches and yawls

Ketches, and to a lesser extent yawls, share some of the simplicity of the sloop rig while offering the ability to have much greater control over the center of effort of the sail plan. A split rig provides a lot more flexibility in terms of how the sails are set or which sails are set in an effort to achieve a good balance between upwind and downwind performance.This flexibility offers the potential for self-steering, even without an autopilot or windvane.

Within normal crew limitations, a properly sailed ketch can carry more sail longer in a rising wind than a sloop of similar size. Reaching is a ketch's strong point, and we all hope our cruises will provide a lot of reaching. If built with a relatively long jib luff, a ketch can do quite well upwind and, because each sail on a ketch is typically slightly smaller than one on a similar-sized sloop, the stress on the rig and gear are less. The crew has an easier time sailing the boat as well, despite having to deal with the extra sail.

Cutter ketches, or staysail ketches as they are often called, are quite common and offer tremendous flexibility in a rising wind. On one very squally passage up the Yucatan coast aboard one of my ketches many years back, we put a double reef in the mainsail and left the full mizzen up and the jib fully out. When the heavy squalls came through, we dropped the mizzen right in the cockpit and rolled in the jib. We were nearly instantly reduced to a heavy staysail and double-reefed main, a sail plan that worked well in the stronger 40-knot winds. When the squalls moved off, we simply rolled the jib back out and raised the mizzen. The double-reefed main was a little under-powered in the lighter winds between squalls, but we hardly noticed it.

Sailing upwind in heavier air, many sailors use just the mizzen, jib, and staysail. We have done that on occasion, but if conditions are squally and

***Varua*, at left, is a 1974 Westsail 42 cutter owned by friends of Todd's who were cruising the Bahamas as he was writing this article. To Todd's knowledge, this boat has been around the world at least once. Todd owned the Corbin "staysail ketch," *Seafari V*, at right, many years ago. The boat is now in Quebec.**

***Jadie* is a steel gaff-rigged cutter built by Martin and Leslie Klein in Namibia. She has sailed Caribbean waters since the late 1990s. She has no roller furling and sets a variety of small sails, all easily handled by even the smallest crewmembers.**

variable, reefing or dropping and raising a main four or five times in a watch to keep the boat moving well is a lot more work than just dropping or rolling in a headsail.

Schooners

Schooners offer even more flexibility when balancing the boat on various points of sail and, in most instances, each sail on a schooner is a bit smaller than you might find on a similar-sized ketch. While luff lengths are usually shorter on a schooner, limiting their upwind capabilities, few boats can catch a properly sailed schooner off the wind or running. A schooner rigged with a yardarm and a square sail will sail downwind better and with less effort on the part of the crew than any other rig.

In the days before self-steering and autopilots, the schooner rig offered the best solution to the dilemma of short-handed sailing. With a schooner, you can undertrim the main a bit so that when the boat falls off, the main will fill properly and pull the boat back on course. When the boat sails too high, the main loses power and the center of effort moves forward again. Then the foresail and jib (or jibs) pull her back on course.

It is an interesting tidbit of nautical history that the schooner *America*, which sailed across the Atlantic in 1851, managed to beat every racing yacht she was matched against in Europe. Largely because of the success of the *America*, racing schooners were still being regularly built up to World War II and campaigned for many years after that.

Catboats and their cousins

A number of catboat-type rigs have been introduced over the years for cruising. The attraction, or marketing ploy often put forth, was that the rig was simple, easy to handle, and rugged. With the introduction of roller-furling mainsails and in-boom furling, many people who might have chosen a catboat or cat ketch/schooner may choose the simplicity of these modern furling rigs and for good reason: they are better upwind performers and typically better balanced off the wind than a catboat-type rig. That said, as long as one does not mind dealing with a large mainsail and a long boom, the cats and cat ketches can be a lot of fun to sail and are great reaching rigs.

Gaffers

The gaff rig has been largely forgotten in the last 40 years and I don't know of a single modern design sporting this well-proven and successful innovation. For centuries, the gaff rig was employed as the most suitable way to handle a boomed mainsail. The gaff, when used in conjunction with lazy-jacks, makes dropping or raising sail possible on a reach or even downwind and, if a squall comes along, just dropping the peak of the gaff can scandalize the sail, dumping much of the sail's power. Reefing with a gaff rig is very easy and, once lowered into the cradle of the lazy-jacks, a gaff holds the sail down until gaskets (sail ties) can be lashed in place.

The choice is yours

Go into any major cruising port and you'll see a broad cross-section of what people consider the best rigs and designs for long-distance cruising. One thing we have learned is that there is no right answer for the best rig to take, and we always enjoy seeing a boat with an unusual rig, well handled by a short-handed crew, entering harbor or on passage. It can also be argued that emotions can play a large part in the decision process when choosing the right rig for cruising. We know it would be easier to sail a modern sloop and in many cases it would be perfectly adequate, but over the years we have gravitated toward more unusual designs and rigs as a way of keeping ourselves entertained. We admit that when entering a new port we are never compelled to say, "Oh, look at that beautiful white sloop" when there is a schooner, brigantine, or gaff cutter or ketch sitting gracefully in the harbor, drawing our attention and eclipsing all the other craft with her beauty.

Some of the more complicated and esoteric rigs of yesteryear are not for everybody, and yet we hope that as time goes on we'll continue to see some of these excellent rigs and traditional designs sailing the oceans and taking their enthusiastic owners to the far-flung ports of the world.

Todd Duff has owned 50 sailboats over his sailing career and is a writer, photographer, marine surveyor, and former yachtbroker. Todd and his fiancée, photographer and professional captain Gayle Suhich, have accumulated approximately 150,000 sailing miles on sloops, cutters, ketches, yawls, schooners, and a brigantine. They are full-time cruisers and are now in Hawaii aboard their latest boat, the 50-foot Flying Dutchman cutter, Small World II.

Shakedown

Five ideas that flunked;

In the years since we launched her, our home-finished 31-foot Cape George cutter has been subjected to perhaps the most rigorous form of testing: being cruised and lived aboard by a family of five. That three of those five are very young children has probably placed more strain on everything than if they were adults — at least, it has placed more strain on those of us who are.

Building the boat with limited funds had required some inventiveness and we put to sea not knowing whether some of our improvised systems would work or not. Some proved patently useless and didn't survive the shakedown. Others did pretty well initially but lacked durability or required too much maintenance. A golden few, however, with maybe some judicious adjustment, have proved their usefulness again and again on *Ganymede*'s cruise from California to the East Coast. All of them taught us lessons that we can apply to great ideas we might have in the future.

The losers

Five ideas seemed good at first, but were tossed outright or are on the replacement list.

1

Homemade self-steering windvane
Even though I sweated through Bill Belcher's and John Letcher's books on windvane construction, the engineering details were too fine for me. The trim tab I made not only proved too powerful — a finger touch on the trim tab's mini-tiller could put the rudder hard over — it created too much drag, making hand-steering an awful chore. And although the lower support strut was a stiff piece of solid ¾- x 3-inch aluminum bar, it vibrated most disturbingly when we put the helm over.

Since I built it mostly with material left over from other projects, it wasn't a huge waste of money, but its demise condemned us to hand-steering nearly every mile of our cruise. We have on the wish list a servo-pendulum style windvane with a blade that can be pulled out of the water when not in use so it doesn't grow weeds and cause drag.

2

Self-adhesive LED button lights
These inexpensive little lights work great for a while and don't use much power — a set of three AAA batteries can last over a week of nightly use. The trouble is, they suffered the curse of most low-voltage LEDs: they're not made to last. Often, a switch would go bad and need to be whacked pretty

Damaris, just 10 months old, admires the shiny white mooring bitts in Baja California, near the beginning of *Ganymede's* cruise, top of page. One corner is already weeping rust. Ben adjusts the linkage to his ill-fated self-steering vane, at left. The spoked wheel was once part of a baby stroller. AAA-powered LED button lights from a home-improvement store, center, worked only for a short while. The Energizer LED headlamp worn by Emily, at right, proved more reliable.

shakeout

five that made the grade

BY BEN ZARTMAN

hard to make it work; usually, one of the bulbs in the array would become corrupt, making things pretty dim, and the least little bit of corrosion on the battery contacts is enough to interrupt the feeble flow of current.

They were wonderful for the first couple of months, but became altogether unreliable as time went by and we've now replaced them entirely with our favorite LED headlamps, made by Energizer and sold for $12 at Walmart. Their only drawback is that the elastic head strap wears out long before the lamp part does.

3 *Mild-steel fittings*

Unable to afford having things fabricated from stainless steel or aluminum by a welder, I torch-welded my own mooring bitt and boom-gallows stanchions using mild steel. Properly primed and painted, they lasted a good while, but after two years of heavy use in the tropics, *Ganymede* had rust streaks all along the decks and down the hull below the scuppers.

I had expected to be able to paint the fittings from time to time, but keeping three children fed and clean and entertained didn't leave much time for other things. In fact, I painted the stanchions only once during our cruise. Unshipping them and replacing them with stainless-steel and aluminum fittings was part of this winter's project.

Along the same lines were the galvanized turnbuckles and shackles for the rigging. Though I went to some lengths to secure only domestic galvanized hardware for the shrouds (the foreign-made stuff I saw was poorly made and indifferently galvanized) and though coated liberally with LanoCote, by the time we arrived at the Chesapeake Bay for a refit some were all but immovable.

At least one shackle — mounted near the water on a bronze chainplate — had to be hacksawed off. All the steel parts worked very well at first, but their propensity to rust, especially in tropical heat and humidity, makes them too maintenance-intensive for my taste.

4 *Homemade propane locker*

Perhaps the most frustrating failure was the most expensive. Wanting to maximize our propane supply for long-distance cruising, I built a fuel/propane locker tailored around two 20-pound Worthington horizontal aluminum LPG cylinders. They cost upward of $300 each and it would have been money well spent if they had worked consistently.

But horizontally oriented tanks have a separate, bigger fill port (a "forklift fill") requiring a different fill adapter than regular vertical tanks. The "out" valve, to which a standard LPG fitting connects, is fitted with a check-valve so the tank cannot be filled through there. All that might have been fine, provided I could have been on hand to explain to the filling attendant which valve would allow gas *in* and to take it slowly lest the finicky Overfill Protection Device (OPD) put an untimely end to the process. But propane runs in other countries are often arranged by marinas where tanks are dropped off empty and returned full. Time and again, my tanks came back mostly empty with the

By the time *Ganymede* arrived in Virginia for a refit, the mooring bitts were weeping rust everywhere, at left. New bitts were high on the winter refit list, top right. *Ganymede*'s galvanized turnbuckles were almost immovable, and shackles in contact with bronze chainplates were rusted fast shut, middle right. In Huatulco, Mexico, Ben modified his propane tank so the Mexican filling nozzle would fit, bottom right.

marina staff swearing that the tank had acted as if it were full. Sometimes, no gas went in at all, but I was charged for the run nonetheless.

Eventually, I had a Mexican propane company remove the offending fill valve from one tank and install a sensible, working valve . . . with the result that on our return to U.S. waters all propane fillers refused to touch it. But the other tank, with the original fill valve and hair-trigger OPD, often takes only about a quarter load, so it's impossible to have all 40 pounds of our propane potential. Another refit project is to secure three 10-pound tanks with the standard fills that everybody can deal with.

One of four spice racks Ben installed is visible above Damaris' head (that's Emily behind her). The racks worked, but the bulk spices were a bad idea.

The Zartmans store water in plastic bottles and containers and mark the dates they are filled.

Danielle gives Antigone a piano lesson under the big kerosene lamp. It was later sold as the light from four smaller bulkhead lamps was sufficient.

Bulk-sized spices

5

It seems a little thing, but this actually led to a good deal of waste and frustration since cooking aboard is a daily event. It didn't help that I'd built lovely spice racks just the right size for the large spice containers, all shaped alike, from a discount outlet. The trouble was, a lifetime supply of dill should not be carried to sea in one canister. Not only can the damp get in and make it clump up and grow mold, but it loses flavor over time in an opened container. Likewise with most of the green herbs. Anything with sugar or salt (think seasoning salt, Old Bay, bouillon powder, or drink mixes) becomes a hopeless lump in very short order. I had laughed, at the outset of our cruise, at the single-use packets of drink mix, bouillon, and spices we found in every tiny store from Baja to Panama, but I was laughing less when I had to throw out several cupfuls of all our favorite flavorings that had grown moldy or clumpy in the rainy season.

We still have our spice containers, but they are now filled with those tiny single-use sealed packets that could be stored more tidily in a kitchen drawer . . . except that I have to use those spice racks for something.

The winners

So much for what didn't work. We also have a happier list of things we were initially unsure of that have proved useful beyond all expectations.

Reusing plastic juice bottles

1

Though they're not the majority, we've met plenty of cruisers whose tank water is so bad it is useful only for washing and cooking. Unless it is filled exclusively by a watermaker, it's only a matter of time before some slightly funky water supply will contaminate the whole tank.

Ganymede doesn't have enough room to carry washing-only water, so we chose not to install tanks or water lines at all and instead carry 120 gallons in carefully saved 2-, 3-, and 4-quart juice jugs. The water in them can be visually inspected for floaters or bad color before use and, better yet, getting a bad batch in some containers doesn't contaminate the entire water supply. Once every six months or so my wife, Danielle, will scrub them all out thoroughly with a bottle brush.

Another advantage is that they can be filled a dinghy-load at a time without the expense of tying *Ganymede* to a pier. Labeling each bottle with a Sharpie (usually the last fill location) aids in rotating the supply and helps to identify water from questionable sources.

Gimbaled oil lamps

2

Ganymede isn't fitted with 12-volt electric. All her appliances — GPS, shortwave receiver, and handheld VHF — run on AA batteries. But cabin lighting requires something more than small batteries can provide. We had saved three gimbaled oil lamps from our last boat and, with two more bought to match, *Ganymede*'s cabin is filled with the coziest of glows. We started out with yet another lamp — a ceiling-hung trawler lamp that really put out some light, but it was too big for the cabin and we sold it at the first swap meet.

During winter, when we use the lamps most, they consume about a gallon of kerosene a month. Best of all, they serve a dual purpose. Not only do they provide a homey nautical look to the cabin, the heat they give off keeps things nice and dry inside.

On the downside, the wicks and chimneys the maker sells (Den Haan, distributed in the U.S. by Weems & Plath), are frightfully expensive. With care, however, the chimneys only break occasionally and cheaper wicks can be found at most hardware stores.

Fiberglass spars

3

I made our boom and bowsprit by wrapping multiple layers of fiberglass in polyester resin around a length of 3-inch ABS pipe. The layup is ½-inch all around.

While it flexes a little, the 17-foot boom has proved strong enough to carry 300 square feet of loose-footed mainsail and to be steady enough to

Ben fits whisker stays to *Ganymede's* fiberglass bowsprit shortly after he'd installed it, at left. *Ganymede's* 8-horsepower Yamaha outboard engine and its bracket were still looking good in Cartagena, Colombia, after 5,000 miles of exposure, abuse, and a passage through the Panama Canal, at right.

walk on while under way if something at the boom end requires attention while sailing downwind. The bowsprit has the advantage of being lighter than wood and 100 percent maintenance-free.

Attaching hardware is a breeze, since the fiberglass is thick enough to tap threads into or pass through-bolts through without worrying about water intrusion and rot.

Outboard engine

4

I had never intended to fit *Ganymede* with an inboard diesel engine — it was too much expense and bother. Besides, I needed the space for a children's cabin. Instead, I made a very sturdy transom bracket out of structural aluminum angle and hung a Yamaha 8-horsepower, four-stroke, high-thrust, long-shaft outboard engine on it. The gasoline it burns is easier to come by than diesel in some of the nooks and crannies of the world where we've poked *Ganymede*'s bowsprit and the engine can be easily unshipped and taken ashore for service.

I had worried that such a small engine would be suitable only for getting in and out of harbors (and very slowly at that), but it can push the boat along at 5 knots in quiet water and was sufficient to effect a Panama Canal transit. In choppy seas, the prop tends to come out of the water somewhat, making an awful noise, but getting way on and maybe altering course a little can mitigate that.

Being a four-stroke, it's susceptible to dirty or ethanol-laced gas and parts are impossible to find in Central America. But it has proved to be very reliable nonetheless, and once I got the hang of taking the carburetor apart I could clean and reassemble it in less than 20 minutes. When we sail in foreign waters again, I'll lay in several full sets of seals and gaskets, half-a-dozen spare spark plugs, and rig a water-separating fuel filter.

Another advantage of the motor is that it tilts out of the water when not in use, eliminating electrolysis and drag. Without a prop to tow through the water, and with the cutout where an inboard's prop would normally be glassed in solid during construction, *Ganymede* performs astonishingly better in light air than we'd dared to hope.

Gaff rig

5

While on the topic of sailing performance, the biggest gamble we took on construction is the one we're most happy with: a gaff-headed sailing rig. Since the full-keel heavy-displacement hull and the gaff rig were being perfected at the same time in history and kind of grew up together, it seemed a shame to put a more modern rig on a hull whose lines so closely match the quay punts and pilot cutters of the glory days of gaffers. Another weighty consideration was that I could more easily design and build that kind of rig at home than a Bermudan rig that would have cost more than double what I ultimately spent.

But financial considerations aside, the gaff rig has many advantages over its more modern counterparts. The shorter mast means less windage and weight aloft. The lower-aspect-ratio sail area means less heel, so *Ganymede* can carry sail into higher winds before needing to reef. There are no halyard winches to deal with and even the jib- and staysail-sheet winches are used without a handle (which I suspect is at the bottom of the Pacific somewhere — I haven't seen it in at least a year). Best of all, by using aluminum for gaff and mast and synthetic rope (Vectran) for shrouds, I all but eliminated three of the biggest drawbacks of gaffers: weight, spar maintenance, and chafe.

Ganymede isn't perfect — as long as we have her, there will be an endless list of upgrades and changes to make — but the important thing is to keep on testing, improving, and replacing as funds and time allow, knowing that every refinement will increase her worth and make her that much more pleasant to cruise. And as I look at my endless "to do" list, I can take comfort in the knowledge that before me is a project that will last a lifetime.

Ben Zartman lives with his wife, Danielle, and their three young daughters aboard Ganymede, *the 30-foot Cape George Cutter he built from a bare hull. They spent last winter in Newport, Rhode Island, preparing* Ganymede *for an Atlantic crossing that was imminent as this issue went to press. Follow them on their blog at www.zartmancruising.com.*

Fitting *Ganymede* with a gaff mainsail proved to be one of the best decisions Ben and Danielle made.

Readers answer our "photo call"

In spring we asked our readers for action photos for our covers. They responded with great shots, although most were not destined to become covers. Here are a few. We'll publish more in future editions.

1. Joe and Carolyn Crawford sail *Promises Kept* on the Gulf Coast. She's a 1987 Island Packet 31.

2. Diny Van de Loo caught this shot when crewing on a boat going from Thailand to Greece.

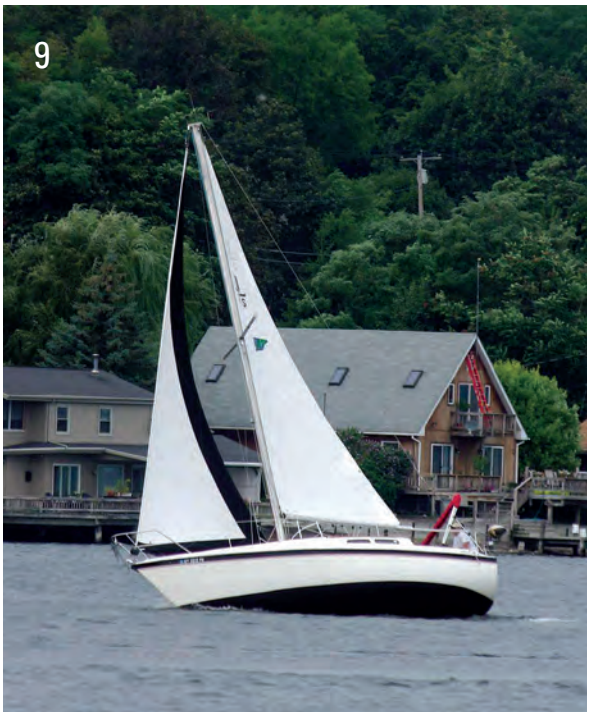
3. *Marionette,* Ron Breault's Dolphin 24, heads home from Block Island, Rhode Island, with Ron and his daughter Nicole, who trims the spinnaker.

4. Mark and Tammy Milam (aft), who brought their 19-foot Alerion Catboat to Arizona's Havasu Pocket Cruiser Convention from Baton Rouge, Louisiana, were joined by Shane and Renee Wallace. Photo by Keith Bennett.

5. *Yankee Girl*, a Pacific Seacraft 25, takes Mark McGinley and crew on romps on Lake Superior.

6. Chris Gilbert and crew enjoyed this spectacular view of Canada's Princess Royal Reach from the 1992 Wauquiez Centurion 40, *Crescendo*.

7. William Svoboda sent this photo of his Hugh Angleman-designed 34-foot Sea Spirit on California's Monterey Bay.



8. Dave Herndon sails *Wayward Wind*, his 1978 Fisher 25 motorsailer, year-round on Chesapeake Bay on USCG Auxiliary safety patrols. This photo (and another that appears on page 8) was taken during the 2010 Hospice Turkey Shoot Regatta on Virginia's Rappahannock River.

9. Ron Waclawik sails a 1984 Newport 27.5 on Seneca Lake in New York. Her name is *$ea-Note*. Guess why.

10. David Payne is fairly certain "the powers that be" painted the Hilton Head Light to match *Avignon*, his Tayana 37.

11. Lee and Karen Högman sail *Hög Wild*, a 1989 Beneteau First 235, on Carlyle Lake in Illinois. They like rafting up with friends.

12. Diane (smiling broadly) and Brian Hofler sail *Simply Super*, a 1972 Wauquiez Centurion, on British Columbia's Sunshine Coast.

13. *Sláinte*, Tim Roberts' Cape Dory 27, brightens the scene on Alton Pool, on the Mississippi River just above St. Louis, Missouri.

14. Len and Debbie Ingalls sail the Bay of Fundy on their Marieholm 261, *SeaGar*. They took this shot of a "neighbor" a mile from their mooring.

Tabletop turnaround

Patina copper and bar top epoxy created an interesting effect on the tabletop, a bit like a map that unfolds , below.

A tired saloon table gets a facelift

BY SCOTT ST. CLAIR

The tabletop and countertops on *Jammin*, my 1981 Stevens 47, are a lovely almond Formica that was the must-have material before Corian came on the scene. Formica is really tough stuff and surprisingly attractive (as long as you stay away from the crazy wood-grain patterns). However, it does wear out, and the surfaces on *Jammin*, particularly the saloon table, were no longer attractive.

The saloon table is an elegant three-leaf affair with four surfaces. Two of these are hidden when the table is folded up. The table is all teak save the tops, which were plywood with Formica surfaces and teak trim. I wanted to replace the Formica while preserving the rest of the table as much as possible — I revere teak and hate the thought of wasting it and I didn't want to replicate all of the teak trim (which would have been hard to do).

My plan was to remove the Formica and replace it with something else. I initially thought a teak veneer, perhaps incorporating an inlaid compass rose, might fit the bill. However, I was concerned about the differences in thickness. The Formica was .045 inch, whereas a paper-backed teak veneer would have been .020 inch. Inlays were a different thickness altogether, .031 inch, and I couldn't find an inlay I liked.

While doing my research, I came across an interesting material called patina copper. This material is a thin sheet of pure copper that has been treated with chemicals to create colorful patterns on the surface. A wide variety of colors are available, including one called azul that included a blue that matched *Jammin*'s topsides. While not traditional, I thought it might be an interesting choice.

The issue I faced was the difference in thickness between the Formica

> "I wanted to remove the Formica in one piece, so I could use it as a pattern . . ."

After 20 years, the Formica on Scott's saloon table was showing its age and he wanted to replace it without damaging the teak trim. He started by prying up a corner with a chisel, at left, then sprayed lacquer thinner into the gap he created to dissolve the contact cement holding the Formica to the tabletop, at right.

(.045 inch) and the copper (.005 inch). In addition, the fragile copper would need to be protected somehow. The answer: bar top epoxy to level the tabletop with the surrounding teak trim and protect the copper.

Delicate disassembly

With the replacement material selected, the first step was to remove the Formica without destroying the teak trim that surrounded it. As well as the teak edges of the table, there were teak fiddles on the central portion of the table. Fortunately, the fiddles were only held in place by copper nails and varnish. I was able to pry them off easily with a chisel. One did crack, but I was able to repair it with a bit of thickened epoxy (I love that stuff!). Getting the Formica off was another story entirely. Formica is glued to its underlayment with contact cement, which does a seriously good job of holding it in place if done right. The Formica on *Jammin* was done right.

I wanted to remove the Formica in one piece, so I could use it as a pattern, while not destroying the plywood underlayment. To do this, I would have to dissolve the contact cement with lacquer thinner — lots and lots of lacquer thinner. To apply the thinner, I would need a spray bottle full of the stuff, preferably one with a stream-style spray so I would not fill the air with any more lacquer thinner than necessary.

My approach was to pry up one corner of the Formica with a sharp chisel, then follow up with 1-inch stainless-steel putty knives to consolidate my gains. I sprayed lacquer thinner in the void between the laminate and the plywood, waited a moment for the cement to dissolve, and broke the bond with the putty knives, working back and forth across the interface between the Formica and the plywood. Then I applied more lacquer thinner, and repeated the process. Did I mention that I needed a lot of lacquer thinner? Lots and lots. The work area needed to be well-ventilated.

I succeeded in getting most of the Formica off in one piece with minimal damage to the underlying plywood. That's not to say I achieved perfection. I did take divots out of the plywood (I filled them with Bondo) and the Formica did break, but I was able to use the substantially intact pieces as patterns for the copper.

Fitting the copper

Applying the copper was straightforward. After cutting the sheet to size using the Formica patterns, I applied standard contact cement to both surfaces (the tabletop and the underside of the copper) with a chip brush. To prevent the copper from sticking before I had aligned it, I laid five or six dowels across the surface and set the copper on them. Separating the work with the dowels allowed me to carefully align one edge before sticking it down. Once I had the leading edge aligned and stuck, I removed the dowels one at a time, sticking the copper down as I went. After the dowels were out of the way, I used a rubber roller to ensure the copper was firmly adhered to the plywood.

If I had the project to do over again, I wouldn't bother with the patterns. The copper is easy to cut with a utility knife. I would simply cut the copper a bit larger than the work (say an inch on each side), glue it down, and then trim it with the utility knife. That would avoid alignment anxiety.

Topping it off

Coating the top with bar top epoxy was also straightforward, once I got over the notion that it had to be perfect. The issue was the rounded shape of the teak trim, essentially a 1-inch-thick bullnose that forms the edge of the table.

Removing the Formica was a delicate process that required lots of lacqer thinner, putty knives, and patience, at left. To get at the Formica, Scott removed the fiddles from the table's edges. After fitting the copper, he reinstalled the fiddles and coated them with epoxy, at right. While he was at it, he fitted new hinges.

One of the leaves was double-sided. That is, it would have copper on both sides, so there was no hard "edge" to mask. I would have to blend the seam at the apex of the bullnose. Would it work? There was only one way to find out.

To mask the single-sided leaves, I ran masking tape around the underside where the bullnose met the teak veneer on the underside of the leaf. For the double-sided leaf, I simply ran a strip of blue masking tape around the perimeter of the bullnose with only one edge of the tape stuck to the apex of the bullnose. This strip would allow excess epoxy to flow over the edge of the bullnose and onto the floor without running underneath and creating ugly drips.

I realized that, once I had masked the edge, it was imperative to get the top perfectly level so the bar top epoxy would cover the top evenly. I did this with a good level, blocks of wood, and standard wood shims from a lumberyard. I spread newspaper over the workshop floor to catch the overflow.

The next issue was to determine the volume of material to use. According to the label, 2 quarts of epoxy will cover 8 square feet of tabletop to a depth of ⅛ inch (.125 inch). I had about .040 to fill and each tabletop section is about 2.5 x 3.5 feet, or a bit less than 9 square feet, so I prepared one quart of epoxy for each section of the tabletop.

My advice to anyone trying this technique is, once you've figured out how much material to prepare, go for it. Mix the hardener and resin

Tools and materials

Tools Required
Utility knife
Chisel
Putty knives in various sizes
Scissors
Chip brushes
Veneer roller
Graduated mixing cups, 1 quart size
Miscellaneous hand tools

Materials required
Lacquer thinner, 1 gallon
Spray bottle
Bar top epoxy, 1-gallon kit
Patina copper, (2) 36- x 48-inch sheets
Contact cement
Masking tape
Replacement hinges

thoroughly and pour the mixture onto the tabletop. The material is self-leveling, but you can help it by pouring the mixture in a zigzag pattern over the length and width of the top and encouraging it to flow into corners and to edges with a popsicle stick. I used chip brushes to "paint" the bullnose edge of the table with epoxy.

You will have bubbles. Air trapped at the surface of the copper will form bubbles in the epoxy. To pop them, blow on them with a hairdryer set on hot/high. Don't be afraid to push the epoxy around with the hot air to pop the bubbles. It will level itself again when you are done. You have 10 or 15 minutes to get the bubbles out before the epoxy starts to set, so be prepared with the hairdryer.

As the epoxy slowly leveled out, it continued to overflow the edges of the leaf, creating drips. I smoothed the drips with a chip brush and continued smoothing until the epoxy stopped flowing. This took a while longer than I expected, which is why I discovered drips the next day. Because of the drips (which I sanded off) and a couple of low spots, I put a second thin coat of epoxy on each leaf.

It's important to note that, unless the second coat is applied within less than 10 hours, the previous coat will need lightly sanding with 220-grit sandpaper to ensure adequate adhesion. Epoxy makers say several ⅛-inch coats of epoxy can be applied in sequence. They don't recommend thicker coats because it can cause yellowing and other bad things.

The time to remove the masking is once the epoxy starts to set but before it gets hard (the plastic stage). It is much easier to remove at this stage than after the epoxy sets really hard.

The seam at the edge of my double-sided table is not too bad. Most folks don't notice it. I do, of course, but epoxy is not hard enough to wet sand and polish.

Finishing up

I varnished the base of the table with several coats of semi-gloss varnish. I also wanted to replace the copper hinges that connected the leaves to the main table since they were tarnished and bent. Finding the hinges turned out to be a pain. Since *Jammin* was built in Taiwan, the builders apparently felt free to use hardware in either metric or imperial sizes. In the case of the hinges, it was metric. I finally found hinges of the exact size I needed in England.

The last step was to reinstall the fiddles. I simply nailed them back in place with stainless-steel brads after coating their bases in bar top epoxy. I then brushed a coat of epoxy on the fiddles with a chip brush. They came out great.

Before I began this project, a few folks voiced skepticism about my choice of patina copper, thinking it might be too gaudy or busy, but I disagreed. The azul patina copper is in perfect keeping with *Jammin*'s blue color scheme and the pattern of the patina is almost chart-like. I like it.

Now, what am I going to do about the Formica in the galley?

Scott St. Clair was introduced to sailing as a teenager by a friend on his family's Coronado 27. He's been hooked on boats and sailing ever since. After many years of sailing on other people's boats, Scott acquired a run-down Columbia 57 and commenced a massive refit. Now he's working his way through a long list on his current boat, a Stevens 47. He lives in Charleston, South Carolina.

Resources

AeroMarine Products
Bar top epoxy
www.aeromarineproducts.com

Seaware Marine Equipment & Fastening
Hinges
www.seaware.co.uk

Veneer Supplies
Patina copper
www.veneersupplies.com

Lowe's
Contact cement, lacquer thinner, spray bottle, miscellaneous supplies
www.lowes.com

Scott has only just begun replacing his Formica work surfaces. The galley will present another challenge.

Cabin sole do-over

Vinyl restores the look and the footing

BY ART HALL

Back in the early days of *Good Old Boat* (March 2000), I wrote an article detailing my efforts to bring new life to the interior of our Allied Seabreeze 35. That upgrade has given us many years of enjoyment. Down below, *Secret Water* did not look her age so long as you didn't look down. It was important to avert your eyes from the cabin sole.

The original construction was teak-veneered plywood with black striping. After 47 years of wear and tear and dings and divots, the once attractive varnished surface had lost its luster. The truth was it looked like the devil. The Seabreeze has only a 24-foot waterline and the sole wraps up alongside the hull in the forward cabin and, to a lesser degree, aft in the galley. As you may imagine, Maine waters where we cruise don't ever really warm up, especially around the outer islands. On a hot summer's day, these surfaces will sweat, causing the varnish to blister and fail. Leaking chainplates in the area of the main bulkhead had contributed to localized sole damage. I decided an upgrade to the cabin sole was long overdue.

I considered overlaying the original material with a comparable teak-and-holly veneered plywood, but that wouldn't solve the sweating issue. I also thought about simply painting the surface, but I couldn't let go of the proper-yacht look of a wooden cabin sole. I kicked around the idea of using dimensional lumber about 3/8-inch thick. I could have made this option work but the shape of the hull would have made fitting it a challenge. Also, I didn't want to give up any headroom. I'm 6 feet 4 inches tall and the boat has a clearance of just 6 feet 3 inches.

I came across another product line that consisted of vinyl planks about 3 inches wide and narrow strips about ¼-inch wide. I nearly made this choice, but the idea of so many linear feet of seams worried me.

Then I discovered Lonseal, a company that manufactures industrial-grade flooring including a marine product line. I reviewed the options on their website (www.lonseal.com) and requested samples. Soon after they arrived, I received a phone call from a sales rep who told me they were there to answer any installation questions.

This looked like a challenging job even for a professional sheet-goods installer. I was getting into new territory here.

To prepare the sole for its new vinyl coverup, Art stripped the old varnish, faired the surface, and undercut the trim to allow a tidy fit.

Prep and pattern

The first step was to strip the old varnish, then fill and fair the bare wood with epoxy fairing

> “Careful planning and cutting paid off as my dry fit was nearly perfect.”

compound. Apart from a small area of rot, most of the damage was the result of dropped tools and who knows what. Wherever trim came into contact with the sole, I did my best to temporarily remove the trim or undercut it slightly so the new material could slip beneath it. This helped establish a crisp appearance and simplified fitting the flooring. After a thorough sanding, I surfaced the wood with epoxy to provide a good bonding surface.

At this stage of the project I had arrived at a point of no return. I began to doubt my ability to pull it off. I briefly considered calling in a flooring installer to bail me out, but my pride kept me charging forward. If my wife, Sandy, could figure out how to make interior and cockpit cushions, a sailcover, and a host of other canvas projects, I too could finish what I had started.

The trick was to make an accurate template. The main section, at 9 feet long, seemed like an impossible task. My approach was to make a paper template using poster board.

For the sake of stability, I used an 8-foot-long scrap piece of ¼-inch plywood to give it some backbone. I clamped this firmly in position with a C-clamp at a bilge opening. This kept the template from skating around as I carefully fitted and taped poster board to the plywood. Once I was satisfied with the fit, I laid down a few intersecting reference lines with a straightedge. These gave me the ability to “sanity check” the template after I removed it from the boat and laid it over the material . . . before I started to cut it.

Using masking tape as a cutting guide, I transferred the shape of the template to the material. Once the tape was in place, I was able to set the template aside and make the cuts unencumbered. I had made reference marks on the template to ensure the stripes in the material would be parallel to the boat’s centerline.

Cut and glue

I had faith in my template. Using a straightedge and a new blade in my razor knife, I took a deep breath, made the first cut, and continued until I had replicated the template. Careful planning and cutting paid off as my dry fit was nearly perfect.

Lonseal recommended the use of its own two-part epoxy adhesive for the marine environment. Following directions, I laid the material down. To do this, I had to crawl up and over the berth surfaces, so I made sure to remove any miscellaneous items that would have been in my way. Getting the material in place and glued down was quite a challenge. After rolling the material out, I still had several spots that wouldn’t lie exactly flat. I solved this by placing sealable plastic bags filled with sand on the areas that had curled up.

After things had set up for an hour or so, I checked for lifting. Satisfied all was

As the Lonseal material came in a large sheet, Art made a one-piece template for the saloon sole, at top, by taping poster board to a backbone of thin plywood. He laid the template on the material, at left, and used tape to transfer the shape and create a line to cut to. Roughed in, at right, the new sole fits nicely.

Viewed from the companionway, Art's new cabin sole has a convincing look of teak and holly, and its textured surface feels secure underfoot.

> "... we've found it to be easy to clean with a damp sponge."

well, I waited for the epoxy to cure. Unacceptable gaps at the edge of the decking can be filled with quarter-round molding or a carefully run bead of colored caulk.

Boat interiors vary and any similar project will present its unique challenges. Vinyl sheet decking may not be suitable for all applications. However, since installing the Lonseal product, we've found it to be easy to clean with a damp sponge and it has just enough texture to provide excellent non-skid properties. While it doesn't have the rich look and warmth of real wood, we find it to be a convincing alternative. It should serve well for the next 47 years of sailing.

Art Hall sails Penobscot Bay, Maine, with Sandy, his wife of 30 years. Together, cruising Secret Water, *their 35-foot Allied Seabreeze sloop, they explore the endless possibilities of the coast. Each season, their objective is to spend a night in at least two or three new destinations that are off the beaten track.*

Reinsnest, an Ericson 27

A well-earned renovation for a well-used boat

BY JIM SHROEGER

When Ken and Ginny Reinink decided to buy a good old boat, they had a list of criteria. The boat had to be the right size for two people to easily handle, it had to have a wheel rather than a tiller, and it had to have a diesel engine and standing headroom. At the top of the list was that it had to be trailerable. Ken and Ginny wanted to be able to tow it from their home in lower Michigan to their favorite cruising grounds on the northern end of Lake Michigan.

They looked at Catalinas, Cals, Morgans, Bayfields, and boats from many other builders before they found and bought a 1977 Ericson 27. "Wait a minute!" you're probably thinking, "The Ericson 27 was never designed to be trailerable." Well, it wasn't. But that didn't stop Ken from acquiring the boat and designing and building a custom trailer that allowed him to rig, launch, and retrieve his 27-footer just like he would a Catalina 22.

To make an Ericson 27 trailerable, Ken had to build a trailer. In fact, he built two. The prototype left something to be desired but, based on lessons learned with that one, Ken created his masterpiece. This trailer sports tandem axles, each capable of carrying 6,000 pounds, giving it a total load capacity of 12,000 pounds. The trailer itself weighs 3,500 pounds and has no problem hauling the 6,500-pound Ericson 27. Several Ph.D.s from Ferris State University in Big Rapids, Michigan, assisted him by calculating the rig's center of gravity and made recommendations for the safest way to load the boat on her new trailer. The final tongue weight is only 1,650 pounds.

Ken's ingenious design includes a sectional tongue extension, a self-centering loading technique, and a special safety board that automatically secures the boat once it's loaded. It also has customized anchor rings for tie-down straps and storage space for all the components directly on the trailer.

A proper boat shed

Ken and Ginny bought *Reinsnest* in 1990 and sailed her as she was until 2006. Then the boat went into Ken's building shed for her five-year refit.

Yes, not only did Ken design and build a special trailer for *Reinsnest*, he also constructed a special building shed that included, among other unique features, a "keel pit" reminiscent of lube pits once found in gas stations in the 1940s and '50s and in some oil-change operations to this day. With the keel in a pit, the deck

To make *Reinsnest* trailerable, her owner, Ken Reinink, built a trailer, far left. He also built a shed (with a pit in the floor for the keel), at left, where he carried out the refit, top of page.



The saloon originally had some white surfaces and open storage shelves behind the settees, at left. Ken began his refit of *Reinsnest* by removing much of the saloon furniture, center. He also took out the V-berth, built a new holding tank into the hull beneath it, at right, and fitted a water tank on top of that.

could be closer to floor level, making it much easier to get materials aboard. As the project eventually lasted five years, Ken figures he saved more than four miles' of climbing up and down a longer ladder.

In addition to the creative touches Ken added to the boat, the shed itself is a work of genius. It's 16 feet wide, 38 feet long, and 14 feet from the floor to the ridge. The keel pit is 4 feet wide, 4 feet deep, and 20 feet long. A steel I-beam, 6 inches wide, 16 inches deep, and 35 feet long, runs along the ridge. Two chain hoists, each capable of lifting 6,000 pounds, are positioned along the beam.

To set up *Reinsnest* in the shed, Ken places her on the trailer over the keel pit and passes nylon straps from each of the hoists under the hull. He then lifts her off the trailer and lowers her into the keel pit. Once she's secured on adjustable stands, Ken can get to work on any project he may have in mind. The shed is heated and fully equipped with tools so work can proceed year-round.

The refit begins

Ken began his refit of *Reinsnest* after he and Ginny had sailed her for many seasons. First, he removed much of the original interior. Little was spared. From the V-berth to the galley, most of the furniture simply vanished.

While he was at it, Ken removed the original holding tank and water tanks. He molded in a new 30-gallon holding tank under the V-berth. To take further advantage of the space there, he installed a 25-gallon Todd polyethylene water tank directly on top of the new holding tank.

Ken replaced all the original wiring, increasing the number of circuits from five to 12, and installed a 12-volt fused panel with 12 circuits. He fitted a new stereo system with four speakers and a disc player, five new dome lights, a VHF radio, two new bilge pumps, and a 110-volt shorepower panel. While he was at it, Ken also installed a pressure water system and an onboard battery charging system.

For the new furniture, Ken selected red oak as his building material because the lighter wood tones would give the finished interior an open, light, and airy atmosphere. It was also readily available at a reasonable cost.

On the port side, Ken removed the original hanging locker, settee back, storage shelf, and a portion of the galley counter to make way for his new design. On the starboard side, he removed the dinette table, settee back, and storage areas.

The port-side renovation began with the construction of a new double hanging locker with a clothes hamper and drawers beside it, all in the space occupied by the original hanging locker. Then he shortened the original port settee to allow for a 2-foot extension to the galley that now houses a stove and a new water-cooled refrigerator. Additional storage is located above and below the counter. The new galley arrangement triples the amount of storage. A new spice rack is also part of the redesigned galley.

Ken came up with many innovative ideas for additional storage space. He rebuilt the port and starboard


Ken shortened the port-side settee and extended the galley forward, at left. He made his new cabinets and furniture of red oak for its light color. On the port side, Ken fitted lockers behind and above the seat backs, at right. The seat-back cushions are attached to panels that lift up and out to give access to the lockers.

settees, adding storage behind and beneath both. Lockers behind the settee backs are closed by unique "drop in and lock, lift up to remove" panels covered with the same fabric used for the settee cushions. Storage areas above the seats and beneath the sidedecks are secured with a retaining-pin locking system of Ken's design.

The original dinette table went the way of the original hanging locker and holding tank. Its replacement has two leaves with fiddles and three drawers built into the center section. Ken also fitted a support on it for the starboard settee that slides out to make a large single berth. He re-surfaced the table and all the countertops with Formica.

In the final phase of the renovation, Ken replaced two of the original ports with Bomar 2000 extruded-aluminum opening ports, one in the head compartment and one on the port side in the main cabin. To do so, he had to enlarge the original openings, but the result was much-improved ventilation.

Reinsnest now has a truly beautiful interior that even the original Ericson 27 designers would no doubt be proud to claim as their own.

Jim Shroeger has been sailing for 50 years. He began in Jet 14s at the University of Michigan and progressed through a series of small to medium-sized daysailers including a Star. In the early 1970s, he and his wife, Barbara, and their two kids began their summer family cruises on the Great Lakes, which they continue to this day in their current boat, Sundew, *a Watkins 27.*

The saloon table has drawers built into its base and a support for the extending starboard settee berth.

Bottom sanding

Doing a brutal job without the heavy lifting

BY BERT VERMEER

If you own a good old boat you've no doubt had the dubious joy of working on its bottom. Perhaps multiple coats of bottom paint have started to peel and need attention. Or you have damage to the keel due to an inadvertent grounding. Or possibly you've faced the big one: blister repair. If you're *really* unlucky, all three need attention. After all, it is an old boat.

When I hauled *Natasha*, our 1978 Islander Bahama 30, to replace the engine, I thought it would be a good time to address the bottom. Blisters were apparent through very rough bottom paint. Years of added hard (and abrading) bottom paints had started to peel in spots. The old paint would have to be peeled off and the blisters repaired. The trouble is, I'm not in my 30s anymore and never was a weightlifter. Holding heavy tools over my head to repair the gelcoat was not going to happen, but boatyard prices were beyond my means. I had to come up with a better idea.

An inventory of the weaponry available to me turned up a Makita 4-inch grinder, a Milwaukee 4-inch belt sander, and a Bosch 6-inch orbital sander. I suspected the grinder and belt sander would rapidly remove more material than I wanted to with the potential of damaging the surface. The Bosch had speed control, would be less aggressive and, although slower, would leave a better finish. It was also lighter than the other machines, so it would be the tool of choice.

However, even the Bosch was more than I could hold over my head hour after hour working from 60- to 120-grit paper. It's amazing how much area is involved in a 30-foot hull! I needed a way to support the weight of the sander without using my own strength.

So he wouldn't have to hold his sander over his head to sand his boat's bottom, Bert made a prop for it with a sanding head and an extendable boathook, top of page. He carved a block of foam to fit the sander's rounded head, above, and strapped them together. The boathook bears the weight, at right.

for lightweights

Sander support system

My solution included a 3-foot extending boathook pole with a threaded end, a heavy-duty metal pole sanding head with a universal swivel, a small block of rigid foam, and long nylon ties. The boathook (an adjustable sanding or painting pole would also work) needed to be short enough to fit under the hull. The pole sanding head needed to be strong enough to support the sander, so it had to be metal instead of the more common plastic.

The Bosch sander had a rounded top that was impossible to attach with any security to the flat surface of the sanding head. I carved out a hollow in the rigid foam block to fit the top of the sander so it could be supported, inverted, in the foam. I secured the sander and foam block combination to the sanding head with nylon ties. Once firmly strapped together, they formed a solid unit with very little movement between the parts.

When I attached the boathook, I had an odd-looking contraption that didn't appear to fit any function. However, once I placed the sander against the bottom of the boat with the heel of the pole on the ground, all I had to do was push the sander around, rather than hold it up while driving it around. By adjusting the pole length, I was able to compensate for differing heights under the hull. Playing with the angle between the pole and the hull allowed me to vary the pressure on the sandpaper.

To get even more sophisticated, I set a 2 x 8 between two cinder blocks and used this as the base for the pole. The flexibility of the plank made it possible to push the sander against the hull without having to worry about the angle. I could also vary the pressure against the hull by adjusting the length of the plank between the cinder blocks.

Although the job still entailed a considerable amount of work, this setup allowed me to prepare and finish the bottom myself. Boatyard prices will frighten any good old boat owner. Supplying your own labor is a great way to save money for the real essentials (like sails, electronics, and ice).

The adjustable boathook allowed Bert to sand the bottom, whatever height it was. A board laid across cinder blocks added flexibility to the arrangement.

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

Cross-country

Highway hauling takes preparation and patience

Sometimes good old boats need to be moved overland. Many were not designed for that and present a challenge that may seem overwhelming, leading owners to hire professionals whose fees can be more than the boat is worth.

After searching three years for a boat with specific characteristics, I found her in a Maine barn, 2,000 miles from my home in Arkansas. Sitting on blocks just above ground level and supported by five boat stands, she was a Nantucket Clipper. She measured 31 feet 8 inches LOA with a 9-foot beam. She sat on a solid keel with 4-foot 2-inch draft and weighed 8,500 pounds. The weight could be moved easily, but a sailboat must be moved carefully if it is not to end up as shredded fiberglass strewn along a highway.

I addressed the matter with caution. My first idea was to hire a professional. The only quote returned was for $7,200, *if* she was accessible in a direct line from 200 feet and *if* she was sitting at least 18 inches above the ground. She was neither.

Do-it-yourself transport of a large boat is not for everybody. I am a professional at "making do" and have years of experience moving large objects: farm animals and equipment, research equipment, even a 1,000-pound meteorite no professional would touch fearing the liability of breaking a priceless object. Moving a sailboat is dangerous and must be done carefully. If you follow my example, get someone to check your rig and watch for anything that looks questionable. Have redundant safety braces and tie off the hull at multiple points. If at all possible, never work alone.

The boat's previous owner let me leave my new obsession in her barn in Maine until the spring thaw, giving me time to prepare for the move.

Merrill, the caretaker of the property where Walter found his Nantucket Clipper, bids adieu, top of page. Walter found a truck and trailer, at left, and modified the trailer to carry the boat and its cradle. After 10 years, the Clipper emerged from her barn on the cradle Walter made from parts of the trailer, at right.

clipper

BY WALTER GRAUPNER

Those six months would see me sell my beloved 1969 Ford Bronco, buy an affordable (cheap) one-ton truck and properly rated trailer, and drive halfway across the country to drag my dream boat out of her barn, up on my rig, and home to Arkansas for a rebuild.

The highway rig

In Texas, I found a 1994 long-wheelbase F-350 diesel truck with a beefed-up suspension and gooseneck hitch. Down the road from the truck sat a 45-foot-long bumper-hitch, steel-bed trailer with axles that could handle a 14,000-pound load. The trailer came with a gooseneck frame to replace the bumper hitch and unusual vertical tubing that formed a frame along the front and both sides but was open on top.

I cut the back 12 feet off the bed, yielding L-shaped structures for a cradle that would fit perfectly inside the remaining trailer bed. Connecting the horizontal portion of the L-sections with pipe that slid inside the tubing gave me a frame that just needed a strong center beam to support the keel and pad arms to maintain balance. The remaining side rails on the trailer were perfect for additional vertical supports.

After a couple of months' work on the truck and trailer, I ended up with a good-running truck, a 32-foot gooseneck trailer, and a transportable sailboat cradle that could be assembled around the keel then slid out of the barn and onto the trailer. I even had enough money left from the sale of the Bronco to pay for diesel fuel for most of the move. The final fit of the cradle to the hull would be done on site, so I collected a variety of materials that would fit in the vertical tubes and hold the hull. The clipper's gelcoat had been removed below the waterline so I didn't worry too much about protecting the finish. I built up steel pads and covered them with industrial-grade carpet to soften the contact points.

A maze of permits

Highway regulations require all loads wider than 8 feet 6 inches to have an oversized-load permit for each state where the vehicle will operate. The specifications for permits vary from state to state, so data such as weight, length, height, width, overhangs, axle weights, tongue weights, distances between axles, ground clearance, and drivers' ancestral blood type may be required. States may have different requirements for liability insurance. My insurance company wrote a million-dollar policy for me and allowed me to keep it in effect while I was en route and then cancel it at my destination. This made the necessary insurance affordable.

As soon as I had confirmed dates for travel, I submitted oversized-load permit-request forms to each state along the way. The first problem was getting a permit to cross Missouri, the last state before I would get home and the easiest route to get into the Ozarks where I live. Missouri required a type of insurance that's only available to trucking companies with DOT numbers. Even though my insurance exceeded the requirements, they would not accept it. The underwriter from my insurance company called the Missouri permit office and could not find a way to work with them. I took the long and inconvenient way home, bypassing Missouri.

If money is not a concern, it's easier to secure permits through a trucking permit company. I was driving across 11 states, for which the highest bid quoted was $1,200. Price was a concern in my case, so I did it myself and saved $700. It forced me to take detours to a downtown Nashville office, along a beautiful 30-mile narrow side road through some nice Pennsylvania countryside, and later plead with New York DOT workers to issue a permit via fax to a truck-stop drivers' lounge at the very last minute. I do not know if a permit office could have secured a Missouri permit for me. If so, that would have been a big benefit.

Extracting the boat

With a vehicle, insurance documents, folder of permits, trailer, and cradle secured, it can still be tricky for a do-it-yourselfer to access the boat and get it loaded. My boat had been settling in for 10 years on the dirt floor of her cozy barn.

My rig fit well around her keel as I jockeyed boat stands in and out until I had the frame set in position. Then I ooched up 20-ton bottle jacks to lift her, still supported by boat stands, off the ground, adjusting the stands as she rose until I could secure the cradle in position. Tubular-steel horizontal braces

Walter had to cut the lintel over the barn door before hauling the boat out of the barn, and then had to coax her, cradle and all, onto the trailer.

The boat is at last out of the barn and secured on the trailer, and Walter takes a final look at the rig to make sure it's ready for the road, at left. Five days of driving, 2,000 miles, and 11 states later, truck, trailer, and Nantucket Clipper are at last in Walter's driveway in Arkansas, at right.

let me slide the cradle into a position where the pads would support the hull where it was reinforced: under the bow, along the stringers and the engine beds, and at the tabernacle bulkhead.

I fitted the cradle pads on site by connecting them to the curved limbs of a bois d'arc tree from my home property. I would not do this with any other kind of wood. Also known as Osage orange, it is as strong as steel and more dense than old-growth teak. The curved limbs, fitted with curved plate-steel carpeted pads, matched the shape of the boat. The majority of the weight rested on the 2 x 12 plank keel support. For reinforcement, I strapped the cradle corners together with four webbed ratchet straps rated at 3,333 pounds each. Once the boat was set into the cradle and the two strapped together with four more straps, it made a very stable platform.

To move the cradled boat from the barn, I parked my trailer, still attached to the truck, in line with the keel and winched the cradle little by little along planks. At first I measured the movement at ¼ inch every five minutes. The winches I used to drag the boat from the barn were rated at 8,000 pounds. Before the cradle reached the barn door, the first winch was destroyed and my arm was sore. I had a spare winch and, after the pulleys separated in the first one, I became more careful when setting the rollers for every move.

With 3½-inch round tubing underneath the cradle, the boat moved easily. The strength of the cradle was tested when — while I was resetting the cradle on a roller — the balance shifted and the whole rig moved on its own. A pebble brought one side to an abrupt stop, while the other side fell 4 inches off the roller next to me. It happened so fast I couldn't react to get out from under it. Luckily my welds held and securing ropes pulled the weight away from where I sat working the jack. I realized I had come close to being flattened. After that, I was more careful to have back-up supports and plan my escape route, just in case.

One full day of winching got the boat into the clear. A second day was needed to ramp the boat and cradle onto the trailer. Merrill, the property's caretaker, saved the day by locating timbers for solid ramps. I used a third day to pack incidentals and secure for the road before I was ready to leave, just one day before my permit deadline in Connecticut.

Transportation costs

The expense of moving a sailboat with a 9-foot beam from Lubec, Maine, to West Fork, Arkansas, is not insignificant.

Best quote from a professional boat mover:	$7,200
Lowest permit quote from a professional permit office:	$700
Actual DIY cost:	
Permits from all state DOT offices:	$302
Fuel costs over 4,180 miles:	$1,273
Truck, trailer, cradle, and repairs:	$4,900
Insurance ($1,000,000 liability coverage):	$130
Total:	**$6,605**

On the road

Permit offices determine the roads that oversized loads can travel. My predetermined route led down a road badly damaged from winter freezing. The pavement would fade into dirt with no warning. This turned out to be a good way to check that the load was secure. I aligned a spot on my side mirror with a point on the boat and kept a constant measure to see if anything shifted. One abrupt bounce, when the road disappeared into a pothole when I was driving too fast, put my heart in my throat. Then I looked over to see the spot in the same place. Lesson learned: slow down.

Speed is determined by road conditions minus 10 mph. I learned to take my time and enjoy the scenery while constantly scanning the boat's position and keeping a watch out for vehicles pulling out in front of me. I developed a method of checking gauges. I kept a close eye on my exhaust-gas temperature more than anything else. Turbo boost was also important but more for telling me when to downshift. The main lesson of the speedometer was when to turn on my emergency flashers. That was whenever a hill dropped my speed below 45 mph for an extended period.

Sleeping in a truck cab is not ideal. At 5 feet 7 inches, I found no way to get comfortable. I had traded the rear seat of my truck for a futon mattress. I piled in all the pillows I could find and left a space for a small ice chest. I parked wherever large trucks gathered to bed down — rest areas or lots behind truck stops. Any time I stopped at gas stations or rest areas, I met people interested in the boat who asked questions about traveling with such a rig. It made a great

conversation starter and even though many people probably thought I was crazy, many more were encouraged to approach me and learn about the boat and why I would be driving through the middle of the country where it would be so out of place. Every state border crossed received a honk of my horn. Crossing the Mississippi River gave me a fantastic feeling of joy. Getting into my home state gave me a great sense of accomplishment.

Oversize-permit pains include having to stop at night and holidays. Some states do not allow moving oversized loads on weekends. An Arkansas state trooper stopped me at sunset 100 miles from home. He checked my permit and found that the copy I had received from the permit office had lost a page in the fax transmission. It had looked good to me and I hadn't noticed the skip in the page numbers. I sat on the side of the road with flashing blue lights in my mirror until the sun was all the way down. Then the officer told me to get off at the next exit and stay put until sunrise. After four days of driving, I was looking forward to getting home to sleep in my own bed and wanted to go on. I asked the trooper what the fine would be if I chose to drive after dark. He said, "It won't cost much, but your load will probably be confiscated." I spent another night in the cab wishing my boat had been just 6 inches narrower.

I toasted a long trip with my last Yuengling from Pennsylvania. Although we weren't home yet, we were close, and it felt like I had accomplished my journey.

The next morning, I finished the trip. My truck made it over the steep pass into the Ozarks and the Nantucket Clipper found her new temporary home with the promise that she would be returned to the sea. Her next launch will be 70 miles away in the fresh brown water of the Arkansas River. She will see the same shores that were traveled by Native Americans, explorers, and the many immigrants who settled our country. She is already much closer to being back on blue water than she ever was in the 10 years she spent just a half mile from the ocean on the farthest eastern shore.

The Nantucket Clipper sits next to Walter's Flying Scot under the partially erected frame for a cover.

Walter Graupner is rebuilding the Nantucket Clipper in Arkansas while continuing to sail his Flying Scot on the Arkansas River. Known as "a MacGyver" in the research labs he manages, Walter has been a farmer, chef, toxicology researcher, avionics tech, poultry computer specialist, and developer of space simulations. He tries to convince all his students to focus on ways they can *do something instead of getting hung up on reasons they* can't.

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A better boat tarp

Shelter for a cockpit that's active in winter

BY RICHARD SMITH

Blue plastic hardware-store tarps appear in our marina about the time mushrooms sprout in the nearby woods. Slung over booms and lashed to lifelines and cleats with leftover line, bungees, and bits of string, some are better than others . . . but most are quick improvisations. They are often too short or hung too high to provide much shelter. Many are torn to shreds by the first heavy wind. I've replaced mine annually without noticeable improvement in its form or function. This year, I thought I could make a better tarp.

Design desires

During the winter months, while my boat is still in the water but the sailing conditions are somewhat less enticing, I would like to be able to work on projects on a chilly afternoon in a cockpit with standing headroom, sheltered from the worst of the wind and rain. Basically, I wanted a snug, better-fitting tent slung over the boom and attached to the lifelines from forward of the companionway to the curving pushpit. It would be tightly lashed through solid brass grommets to reduce flapping in a blow. The tent would protect instruments, the binnacle and wooden wheel, the wooden cockpit sole, and the teak trim. The after end of the enclosure would be opened slightly to keep pressure from building up in the wind. I would be able to remove the cover without a lot of hassle for the occasional winter sail.

Another consideration was that I take turns with marina shipmates Jerry and David hosting semi-monthly coffee klatches in our boats. I fire up the Dickinson and we sit below telling lies about summers past and future. It helps us pass the winter months. But getting aboard under close-fitting boom tents is a chore that requires awkward bodily contortions, weaving through a maze of lines, and/or partial removal of the tarpaulin. For the sake of my guests, I would have a "door" built into the cover that could be zippered open from the outside and closed from within the cockpit.

Material considerations

To get all this done, I found an upholsterer, Terry McDonald, who'd done good work for me in the past. I showed him some sketches I'd made to get at the main idea. To help keep the cost down, Terry suggested a vinyl-coated polyester material called Sea-Tarp. This industrial-grade material costs about 25 percent less than Sunbrella. He'd used it when building a watch tent for a Coast Guard cutter and it worked out well. Sea-Tarp comes in several colors, including a gray that matches my boat's cove stripe and canvas. At 18 ounces a square yard, it is about twice the weight of Sunbrella and has good strength, abrasion-resistance, and

Richard's new tarp, top of page, is more handsome than hardware-store blue tarps, at left, and more substantial than many over-the-boom covers that are often too short or hung too high, center. To get a proper fit at the difficult aft end, Terry McDonald made patterns of thin plastic sheet, at right.

The opening in the after end of the enclosure is there to reduce pressure buildup in strong winds, at left. Richard and Terry settled on a lashing system, center, where a line passes through grommets and around the lifeline, but it's a work in progress. A "door" built into the cover allows easy ingress and egress, at right. Richard now has a sheltered cockpit with full headroom, below, where he can work or entertain his marina mates, David Ladd, left, and Jerry Riggs, right.

cold-weather characteristics. We also thought the smooth vinyl surface might confound the daily efforts of herring gulls and blue herons to mess about with the boat. I would give it a try.

Construction concerns

Terry took measurements and worked up a cost estimate. We talked about size and positioning, grommets, lashing versus attaching it with hooks, the zippered opening, and anything else we could think of. The next day, he called with the estimate. It seemed reasonable and we decided to go ahead.

Terry brought a sheet of Sea-Tarp that we draped over the boom and lifelines so I could get an idea of what it would look like. He also brought a sample of the edge treatment complete with 16-gauge grommets and an idea for a flap that would extend over and below the upper lifeline by a few inches to provide a little more protection from slanting rain. After considering individual hooks to secure the cover to the lifeline and pushpit, we settled on a lashing system that, though a little less convenient than hooks, could be anchored more securely. It was also cheaper and stronger.

Terry made patterns of thin plastic sheet for the difficult shape at the aft end, from the end of the boom to the curved pushpit rail. We agreed upon a price and Terry went back to his shop to sew up the cover.

Rigging it right

Designing a better tarp is one thing; rigging it properly is quite another. We slung the completed tarp over the boom and decided on the lashing method shown in the photographs. We'll try others until we get it right. We found that centering the boom and tarp on the centerline of the boat and drawing up the lashing evenly on both sides is critical to keeping the wrinkling to a minimum. This is best done by two people to avoid bunching between grommets. Time will tell whether or not we should add some grommets and line to the leading edge to reduce flutter.

In appearance, our cockpit enclosure is not as elegant as a nicely fitted cockpit dodger but it looks better than any of my succession of run-of-the-mill cockpit tents. It certainly provides more protection. All in all, this better tarp is a snug shelter that should see us through many winters.

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

Gemini 105M

A popular cruising catamaran

BY ALLEN PENTICOFF

Henry and Linda McKevitt use *Linda Lee*, their Gemini 105M, for cruising the mostly shallow waters around Florida's west coast.

When Henry and Linda McKevitt traded in their S2 9.2 center cockpit in October 2011, they had been looking for a comfortable boat for cruising the shallow waters of Florida's west coast. What they found was *Linda Lee*, a 1999 Gemini 105M. Henry, a retired contractor, took the impressive step of taking lessons in operating a catamaran from a local catamaran dealer. These vessels are not the same as monohulls; coaching helps avoid some easily preventable problems. Not long ago, I readily accepted an offer to sail to the Dry Tortugas aboard *Linda Lee*.

Cruising catamarans are very different from beach catamarans. They do not fly a hull when sailing. Tony Smith, who designed the Gemini, once offered a reward for a photo of a Gemini or any other cruising catamaran flying a hull. He never had to pay. One of the most appealing features of a cruising catamaran is that it sails nearly level. Five degrees of heel is typical. These boats do not roll while anchored, nor do they tend to sail on the anchor. While cruising cats are promoted as being faster than monohulls of similar length, overloading them with cruising gear and provisions slows them down considerably.

With two hulls connected by a complicated bridge deck and superstructure, more material goes into a catamaran than a monohull of the same hull length, so it costs more to build. For a given length, however, a cruising catamaran offers much more space than a monohull, and it is a different kind of space on deck and below. Many cruising cats have broad foredecks for lounging and handling anchors and sails and all have large cockpits that are great for entertaining.

Cruising cats also draw very little water, only 18 inches in the case of the Gemini with the two centerboards raised. The downside is a general slowness to respond when under way. Cruising cats are not spritely sailers. They are good at going one direction for a long time but not so good at repeated quick maneuvers. Consequently, the engines become more important to cruising cats than to most monohulls. Many cruising cats have two engines, which is a great help when maneuvering in confined spaces, but a problem if one engine is inoperative. The Gemini 105M has the great compromise of a single small diesel engine

The stern of *Linda Lee* is a busy place, with an inflatable in davits, a solar panel, a barbecue grill, and lines for handling the retractable rudders.

with a steerable and retractable Sonic drive leg. Earlier Geminis had single or twin outboard motors mounted on the transom of the center bridge deck.

History

Geminis have their roots in Great Britain, where Tony and Susan Smith first designed and built the successful line of fiberglass Telstar folding trimarans. After they moved to the U.S. in 1981, Tony continued to build the Telstar under the name Performance Cruising Inc. (PCI), until a fire destroyed the molds. Fortuitously, he owned the molds for the 30-foot, 6-inch Aristocat catamaran that he brought into production as the Gemini 31. These boats had outboard power and rudders that lifted daggerboard-style in cages hung on the transom of each hull.
A key feature of all Geminis has been a relatively narrow beam, at 14-feet, allowing them to berth in most standard-sized slips and to be hauled with a moderate-sized travel lift. A Gemini can also be transported by highway, albeit as a "wide load." Production was geared toward simplicity and not many options were offered, thus a relatively low initial cost for a cruising catamaran made them very appealing.

The 31 was superseded by the very similar Gemini 3000, which remained in production until 1990, when it was replaced by the slightly longer Gemini 3200. The longer yet 3400, still based on the Aristocat's hulls, was introduced in 1993. The Gemini 105M, redesigned with wider hulls, arrived in 1996. PCI had built about 200 of the 105M by 2003, when it introduced an updated version that it called the Gemini 105MC.

Also in 2003, PCI introduced a new version of the Telstar trimaran that was produced through 2009. In the disastrous economic downturn of 2008, the company went into partnership with The Catamaran Company, a successful catamaran dealer headquartered in Fort Lauderdale. The Smiths retired and their daughter, Laura Smith Hershfeld, became president of Gemini Catamarans, which markets the boats that are now produced by Hunter Marine in Alachua, Florida, at the rate of about one boat a month. Altogether, 1,000 Geminis of all models have been built.

Design and construction

The Gemini 105M has pleasing lines with a slightly raked bow, flat sheer, and sugar-scoop transoms. The rakish cabin profile is emphasized by black acrylic windows and accent lines.

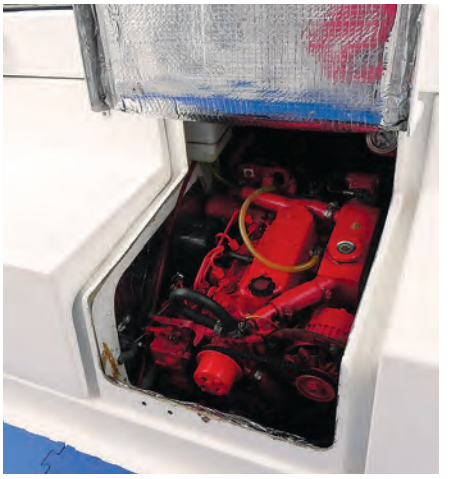
The rudders can be retracted and lowered with lines led to rope clutches at the transoms. The centerboards kick up as well and are raised with a hand crank and held in place with friction nuts. They take up no noticeable cabin space.

The two hulls and bridge deck are molded as one piece, leaving no seams to leak. The solid deck is similarly all one big piece. Several fiberglass pans and liners make up the interior furniture. The hulls are laid up with solid fiberglass and the deck is cored with balsa and plywood. Catamarans are more lightly constructed than monohulls because light weight is essential to their performance advantage and, in part, because they don't have to support the weight of a heavy keel. Should a hull of the Gemini 105M be holed, buoyancy tanks built into each hull (but not claimed to be watertight) are intended to float the holed hull high enough to prevent water from reaching the bridge deck and flowing into the other hull. Gemini recommends filling these tanks with foam if the boat is heading offshore.

While catamarans don't require a strong supporting structure for a keel, rigging loads are high because they don't heel as much as monohulls. The Gemini is rigged as a masthead sloop with double spreaders, removable check stays and baby stay, and twin backstays. The forestay is mounted aft of a small anchor sprit between the two bows. All the shroud chainplates are attached to the bridge deck, not to the hulls. The mainsheet, attached to a traveler that runs the width of the transom, is easy to handle, but the traveler lines need to be secured during maneuvers. On *Linda Lee*, lazy-jacks, Battcars, and a Mack Pack make handling the mainsail a snap in most conditions. The headsail is set on roller furling.

Deck

There is a lot of deck on a cruising cat. What draws one's eye first is the large cockpit that seems like an outdoor ballroom. For all this real estate, however, the seats in the Gemini's cockpit are



Access to the engine is very good. It's coupled to a retractable and steerable Sonic drive leg.

Tinted deadlights and a raked cockpit windshield give the Gemini 105M a dashing appearance.

During Allen's cruise to the Dry Tortugas, west of Key West, Florida, the crew could choose between standing at the helm or sitting on a folding chair.



The long galley counter makes good use of the slender starboard hull, at left. A sleeping cabin is aft of it. The galley is a level down from the saloon but open to it, center. Forward of the galley is the master stateroom with its queen-sized berth, at right. The head compartment, below, is easy to wipe down.

a bit narrow for comfortable sitting and lounging, although a wide cushion helps. On the other hand, you can set out a folding chair or two and sit in real comfort or go forward to stretch out on the spacious foredeck.

The sidedecks provide a precariously narrow path for going forward but there are plentiful handholds. If, as on *Linda Lee*, lines are not led aft from the mast to the cockpit, adding grabrails near the mast would provide support when working halyards — catamarans don't heel much but they are still affected by waves. There is a large storage compartment in the port bow, and the anchor locker, with external windlass, is extra large as well. Foredeck work with the anchor couldn't be easier. Henry finds his wireless headsets indispensable for communication with the helm.

The 27-horsepower Westerbeke diesel engine is located in a compartment in the transom of the bridge deck, along with the fuel tank. Engine access is excellent. The hydraulic system that retracts the Sonic drive leg (doing so improves sailing performance) is also located here. A freshwater hose for personal desalination is convenient to a swim ladder on the starboard transom. *Linda Lee* has davits to carry a dinghy.

Accommodations

Space and light abound in the well-ventilated interior. Sleeping quarters are found in a queen-sized berth in the bridge deck forward and a substantial berth aft in each hull that is roomy for one but tight for two. The queen berth can be tight for tall people as the foot end is close to the cabin overhead. In order to

get out, the inboard person must first ask the outboard person to vacate.

A very useful linear galley is in the starboard hull and a long counter in the port hull serves as a standing navigation station. Storage cabinets are fitted along the inboard sides of both hulls. The narrowness of the passageways makes movement and standing very secure while at sea. The U-shaped saloon settee (that's convertible to a berth) and the folding table it surrounds are roomy enough for a party, but headroom is somewhat limited at the forward end. It's a great place to hang out with its light and airy feel.

The saloon settees are not quite long enough for a power nap. The feet of the off watch hung over the end and the watch crew had to be careful not to bump into them while moving about the cabin. A true front-loading refrigerator that uses multiple power sources is a nice feature. *Linda Lee* also has a combination heater and air conditioner. The head is forward in the port hull and easy to use at sea in that narrow part of the hull.

Under sail

The hulls make nearly no wake as they slip through the water. During our cruise we motorsailed most of the time, averaging 6 to 7 knots. This enabled the Sonic drive leg to help with steering in the steep 5- to 8-foot, nearly breaking seas. We were beam and broad reaching much of the time. The Gemini showed no signs of broaching but would occasionally surf to 13 knots and demand attention not to bury the leeward bow in the wave ahead. I found the ride comfortable, if noisy. Waves would pass under us with little rocking action. Anything thoughtlessly placed on the galley counter stayed there. My berth was in the port (windward) hull aft, where I found I could keep the small port open for ventilation without any water coming in. It was a good ride for sleeping.

The Gemini 105M is steered from the starboard side of the cabin trunk. One looks through the windows to see forward, but *Linda Lee*'s windows

Resources

Gemini Catamarans
Currently produces the Gemini Legacy 35 and supports older models
www.geminicatamarans.com

Gemcats
An owners association with website and newsletter:
www.gemcats.net

A Yahoo group
groups.yahoo.com/group/Gemini_Cats

Spanning the width of the bridge deck, the saloon is generously roomy for any 32-foot boat, at left, and the sense of space is further enhanced by the open areas in the hulls abreast of the saloon. The bridge deck also has room next to the companionway for the three-way refrigerator and microwave, at right.

are hazed with age and were crusted with salt spray. Henry sits behind the wheel on a tall folding captain's chair that showed no tendency to become unbalanced even during the roughest times. We often steered from sitting on the seat or coaming to starboard of the wheel so we could see forward, get sightlines, and check for traffic. Docking port-side-to could be a bit tricky with the wheel far to starboard. The throttle lever was in a place where passing derrières frequently bumped it down.

A nice feature is having the cabin floor on the same level as the cockpit. Coming and going was effortless as most of the time the door between them was left open. The off watch can reside in the saloon ready to be called if needed.

When following seas threatened, the door was closed as a precaution, although no wave came close to coming aboard. The windows next to the door or in the door can be opened for ventilation and communication. I could have wished for handholds on the edge of the hard Bimini and bit more height under it — I bonked my head frequently on its edge when passing under it.

One drawback is that the low bridge deck — with only a foot of clearance at the transom — pounds when at sea and at anchor.

When we were able to do some sailing without the engine, I found that, off the wind, everything is a piece of cake. The one area where catamarans fall flat is tacking to windward. To get the Gemini to come about, we had to backwind the jib or start the motor and power around. I did not get a chance to sail to windward in any sea that would show what the ride was like, but the Gemini 105M points reasonably close to the wind due to the centerboards. There is little feel to the helm and we depended on the compass a great deal even when sailing to windward. You basically point the boat where you need to go. Many owners simply use the autopilot.

Gemini 105M

Designer	Tony Smith
LOA:	33 feet 6 inches
LWL:	31 feet 9 inches
Beam:	14 feet 0 inches
Draft (c/b down):	5 feet 6 inches
Draft (c/b up):	1 foot 6 inches
Displacement:	8,000 pounds
Sail area:	620 square feet
Disp./LWL ratio:	112
Sail area/disp. ratio:	25.0
Water	60 gallons
Fuel:	36 gallons

Conclusion

The Gemini line is still in production, which shows there is still a demand for this very capable boat. Gemini Catamarans also provides service and support for the older boats.

Owners' reports regarding quality of construction vary widely. The Sonic drive leg, while a great combination of diesel and outboard, is known for troubles. We had them too; it would not retract. If the lines between the drive leg and rudders are not rigged properly, the handling will be awful. Some of the details are simple and look less than yachty, but they are functional ways to curtail costs and make the boat affordable. Buyers of these boats overlook this and see value in the whole package but, as with any boat, a very thorough pre-purchase survey should be considered essential.

Geminis hold their value in resale. An Internet search found a 1982 listed at $36,500. Most Gemini 105Ms are listing from $70,000 to $100,000. Newer versions have more features and are priced accordingly.

Allen Penticoff, a Good Old Boat *contributing editor, is a freelance writer, sailor, and longtime aviator. He has trailersailed on every Great Lake and on many inland waters and has had keelboat adventures on fresh and salt water. He presently owns an American 14.5, a MacGregor 26D, and a 1955 Beister 42-foot steel cutter.*

Initiation by squall

Mayhem begets a teaching moment

BY DANIEL SHEA

It's amazing how fast things can change on the water. How does that salty expression go . . . that sailing is 99 percent boredom and one percent sheer mayhem? I'm not sure I have it exactly right; I'm still relatively new to this. Either way, my one percent came early in my sailing career on an otherwise calm day that turned on us blindingly fast. Experiencing this exhilarating and terrifying event so early on has made the rest of my sailing almost anticlimactic. Which, by the way, is not a bad thing.

It happened on our second trip out on our boat, *Cruzan Time*, a Cal 27. My girlfriend, Rachel, and I, along with our partners in the boat, Carsten and Amanda, had just bought her. It was mid-September on St. Croix, U.S. Virgin Islands, and hurricane season was around the corner. Good weather appeared to have finally come our way on this particular Saturday. Rachel and I were new to sailing, while Carsten and Amanda were well experienced.

We figured we'd take *Cruzan Time* out for a nice, calm sail out to Buck Island, not far off St. Croix, where we would anchor and spend the afternoon basking in glory on the deck of our new boat. And it all went perfectly according to plan — until it didn't.

ILLUSTRATIONS BY IRENE OLDS

The wind tends to come out of the east and, after anchoring in the lee of the island, we sat back and enjoyed ourselves. A few other boats were out — one other sailboat anchored 50 yards north of us and a 100-foot motor yacht to our southwest trailing a large tender. There were also three kayakers who'd made the mile-and-a-half paddle out to the island.

A change in the weather

After we'd been at anchor an hour or so, the sky to the south turned gray. One of the kayakers, Michael, who was a friend of Carsten's, swam out and asked if they could catch a ride back to St. Croix with us since there were ominous-looking clouds looming. Carsten told them to hurry.

The wind picked up quickly and shifted to blow out of the southwest. All the boats swung on their anchors, so the other sailboat was now astern of us and the monstrous yacht was off our starboard bow. The kayakers had made it out to the boat and were boarding our transom ladder. Carsten was tying the kayaks off to an aft cleat when the first sign of trouble surfaced in the form of a question that quickly became a statement.

"Are they drifting toward us?" Amanda asked, pointing at the motor yacht. "Wait! They're drifting toward us!"

We began to yell at the yacht's crew. The 100-yard gap quickly shrank to a 50-yard gap. The crew began to fuss about on deck and finally moved the boat off, but not before it swung across our bow.

We're not positive whether they dislodged us when they came across

our anchor rode, but after they crossed our bow, the yelling shifted from our boat to the sailboat off our stern. It was now our boat that was dragging anchor.

Carsten engaged our outboard while Amanda and I ran to the bow and began trying to pull us over the anchor. The wind and sea had picked up significantly and we heard shouts from the other boat directing us to cut the anchor. We tried to pull ourselves closer, but we weren't making any headway with our 15-horsepower motor. Complicating matters, the kayaks' lines threatened to foul the motor, so Carsten released them. A couple of the kayakers began raising the mainsail as the shouts from the boat behind us grew in intensity. What had started out as ridiculous — *we're not cutting loose the anchor!* — quickly became reality.

"Cut the anchor!" cried Carsten.

Desperate measures

I was stunned for a second. But Rachel quickly found a knife that would work and passed it up to me. Without really processing things, I sawed through the line. We fell off hard. The main had been raised and I ran back to the cockpit where they were raising the jib.

But there was a problem: we were on port tack heading for a coral reef and moving quickly. I was on the starboard jibsheet. As we tacked, my inexperience showed and I released the sheet too early. The wind, now probably approaching 30 knots, pushed us back and prevented the tack. We sheeted in and tried again, the reef closer and closer. Still unaware, I once more released early and the tack failed again. We sheeted back in, but this was dire now. There was no room for error.

Carsten had seen my mistake and quickly told me what to do.

"We *have* to make this one, guys!" he shouted.

We were now past the marker, the reef lay just ahead, some coral heads likely jutting up somewhere below us. All this was not fine. It was the opposite of fine.

"Coming about!"

This time, I waited for the sail to backwind and push us across and only then did I release the sheet as we came about onto the starboard tack just in time. And then, all of a sudden, although the fight was nowhere near over, we were fine again.

Carsten and Amanda worked the cockpit with two of the kayakers while Rachel calmly talked down the hysterical third kayaker. I went below to prepare the spare anchor. By the time I reemerged, we were headed toward a safe harbor.

A crew coming together

Our team quickly learned from the incident we could trust each other — baptism by mayhem. We fell into roles without question and made it work. We were slightly rattled but also hopeful and confident, having made it together through such a defining moment so early in our joint ownership. And we were ready for a whole lot of the 99 percent.

Daniel Shea lives on St. Croix. Originally from Cincinnati, he didn't start sailing until he moved to the island and bought Cruzan Time, *a Cal 27, along with his girlfriend, Rachel, and two friends, Amanda and Carsten, who, thankfully, knew what they were doing and were able to teach him the craft.*

Outboard-motor maintenance

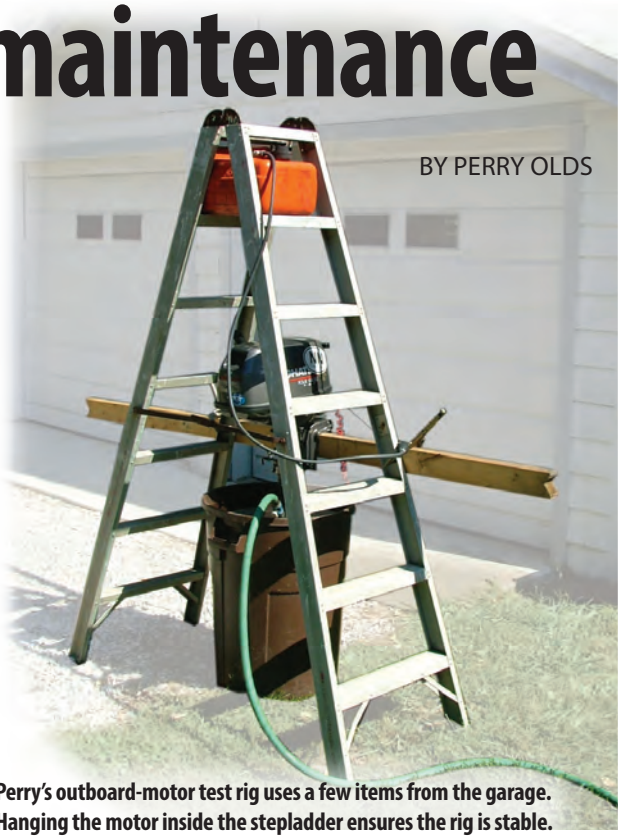
Care in the fall ensures a carefree spring

BY PERRY OLDS

Outboard motors on small sailboats should last a long time because they're lightly used. Most are run only to get the boat into and out of a slip. Those used on dinghies might get harder use taking the crew on excursions and shuttling between shore and the sailboat loaded with laundry, provisions, and jugs of fuel or water. Over the years, I have developed maintenance methods that have helped prolong the lives of my outboards.

In the fall, when the motor is being laid up for the winter, it must be fogged. To do this, I construct a rack using a stepladder, a 2 x 4, some clamps, and a garbage can. I clamp the 2 x 4 to the ladder and hang the motor on it with the prop shaft hanging down in the garbage can. I fill the garbage can with water deep enough to cover the intake for the cooling water. I set the fuel tank up on top and run the hose down to the motor. I can then run the motor.

The rubber bulb in the fuel line, used to prime the motor's fuel pump, has an arrow on it. The bulb needs to be plumbed in the fuel line so the arrow points toward the motor. One thing I've learned is that — before starting the motor — the rubber bulb should be held with the arrow pointing up when



Perry's outboard-motor test rig uses a few items from the garage. Hanging the motor inside the stepladder ensures the rig is stable.

> "A new spark plug every year is a good practice."

being pumped. This helps move the air out of the line and through the motor.

After starting the motor, I look for cooling water squirting out of the hole on the back of the motor. With the motor running at a steady speed, the flow should be a steady stream. This tells me the water pump is working properly.

In the fall, I run the motor until it gets warm. After making sure the prop can't hit the side of the garbage can, I put the motor in gear to turn the prop shaft. I never run the motor in gear above idle or for very long. Once it has warmed up, I spray engine fogger into the air cleaner until the engine stalls and stops. When it has cooled, I remove the spark plug and spray engine fogger into the spark-plug hole for 10 seconds, then pull the starter cord about six times. This thoroughly coats the cylinder with the fogger. Next, I replace the old spark plug with a brand-new, properly gapped, spark plug. The motor is then ready to store on a rack for the winter. A new spark plug every year is a good practice. It's not very expensive and ensures a sweet-running machine in the spring.

To avoid damage, cooling water must be flowing from the back of the motor when it is running.

One additional note for the newer four-stoke motors is to remember, when setting it down, to place the control arm on the bottom so the crankcase oil won't run into the cylinder. Filling the cylinder with oil is a bad thing.

When spring arrives, I put the motor back on the step-ladder rig and start it up before heading to the lake with it. This way, I can make sure the motor runs like a top before it goes on the boat. If there is a problem, I can attack it at home or, if necessary, take it to the shop. Usually it runs just fine. A springtime check at home avoids the embarrassment of getting to the water, launching the boat, and not being able to start the motor.

Perry Olds first sailed in a homemade 8-foot pram when he was 20. Over the last 40 years, he has sailed in the Pacific, the Atlantic, the Mediterranean, the Caribbean, the Chesapeake, and the Great Lakes. When he's not sailing or working on boats, he's reading or dreaming about sailing.

A swinging iPad

Inside/outside viewing when navigating by tablet

BY GARY GERBER

About 30 years ago, I fabricated a teak swing-out arm for my navigation aids, a Loran and depth finder (it's pictured in Mail Buoy, January 2011). The swinging arm made it possible to view these instruments from inside the cabin or from the cockpit. For navigation these days, I use a Garmin GPS mounted on the cabintop of my 1970 Morgan 33. Since I had removed the old instruments from the swing-out arm, I decided to use it to mount my iPad, on which I have some of the latest navigation apps such as iSailGPS and Navipad.

Because the iPad might be exposed to the elements, I searched for a protective case for it. I purchased a Survivor case made by Griffin Technology. This military-spec case consists of a hard plastic case for the iPad and a soft molded-vinyl cover for the plastic case. The protective case allows the full use of the iPad's plug-in components and camera. Brackets are available commercially to hold the iPad without this protective cover. However, the bracket I made securely holds my iPad and its cover and is adjustable to reduce glare. It also allows for quick removal of the iPad when necessary for recharging or use elsewhere.

I used ¼-inch StarBoard for the back and made two U-shaped support brackets from 1/16 x ¾-inch aluminum bar stock. I bought three black-plastic threaded knobs, two for the friction adjustment on the bracket and a smaller one for the iPad "clamp." These knobs are available in hardware stores in various thread sizes. The threaded inserts are brass, but stainless-steel wing nuts could also be used. I also used an assortment of stainless-steel fasteners.

I wanted the iPad to be held firmly yet be able to be removed quickly. I settled on using a couple of double robe hooks (typically used on the backs of doors) to secure the iPad to the StarBoard back. These hooks are available at most hardware stores and I found the perfect solution in the Liberty design.

The robe hooks work well because the mounting holes are in line. The lower hook is fixed, secured by two small bolts and nuts. The upper hook has to move to facilitate inserting and removing the iPad, so only one hole is used. I had to drill it out slightly to accept the bolt, which is able to slide in a slot cut in the StarBoard back and is tightened by the smaller black knob. The double hooks grip the padded iPad securely.

The photos show the relative sizes of the parts. Hole spacing and hole patterns will vary between mounting systems on individual vessels. My goal was to keep it simple, cost effective, and functional.

Gary Gerber, a retired industrial designer, has been sailing for more than 40 years in coastal New England, the Caribbean, and the Mediterranean. He lives in Annapolis and sails his 1970 Morgan 33 on Chesapeake Bay.

When Gary started using navigation apps on his iPad, he modified the swing-out arm he already had, at top, to hold a protective case for it, at left and above. Robe hooks mounted on a StarBoard panel secure the case.

Parts list

1 piece	¼-inch StarBoard, 5¾ x 9¾ inches
1 piece	1/16 x ¾ x 36-inch aluminum bar stock
1 pair	Liberty B46115Z-CHR-C double robe hooks
2	black plastic knobs with ¾-inch 10 x 32 threaded inserts
1	black plastic knob with ¾-inch ¼ x 20 threaded insert

Bespoke autopilot

Fitting an Autohelm without harming the teak wheel

BY GLYN JUDSON

I searched high and low for my factory original all-teak wheel, the top of the line of about five wheels and a tiller that Ericson offered for the Independence 31. Prior to that, I had a standard 28-inch stainless-steel wheel with an Autohelm ST4000+ autopilot drive attached.

When transferring the Autohelm to the teak wheel, I was reluctant to do any damage to the wood by drilling holes for mounting the servo ring to it. Raymarine (the manufacturer of the Autohelm) makes a kit for just this purpose, but it necessitates drilling three holes in the main part of the wheel, something I was not going to do. The kit consists of three pieces of plastic and three stainless-steel bolts with locking nuts and costs something upward of $120. That was another reason not to use their kit.

My fix was to have three pieces of .080 bronze sheet cut to 1½ x 2¼ inches and drill four holes in each of them. These small plates attach to the ring at one end and serve to shift the purchase point of the plastic clamps to where they can attach to the narrow necks of the teak spokes.

Two of the four holes are simply clearance holes for the original screws used to mount the clamp to the ring. The other two are tapped to accept the 4mm cap screws that secure the clamp. I reused the original plastic clamps on my teak wheel without damaging it at all. This simple fix cost me less than $12.

Glyn Judson and his wife, Marilyn, have sailed Santa Monica Bay and the Channel Islands together since 1982, for the last 17 years on their 1979 Ericson Independence 31, Dawn Treader, *that they keep in Marina del Rey, California. They always sail with Glyn's current guide dog in training.*

Glyn figured out a way to attach the Autohelm ST4000+ to his treasured Yacht Specialties teak steering wheel without having to drill holes in it, top left. (Harry, a guide dog puppy in training — Glyn's fifth — seems to be looking on approvingly.) The autopilot's original clamps fit snugly around the teak spokes without damaging them, top right. Glyn's trick was to use bronze plates to shift the attachment points for the clamps, at left.

Taming the fenders

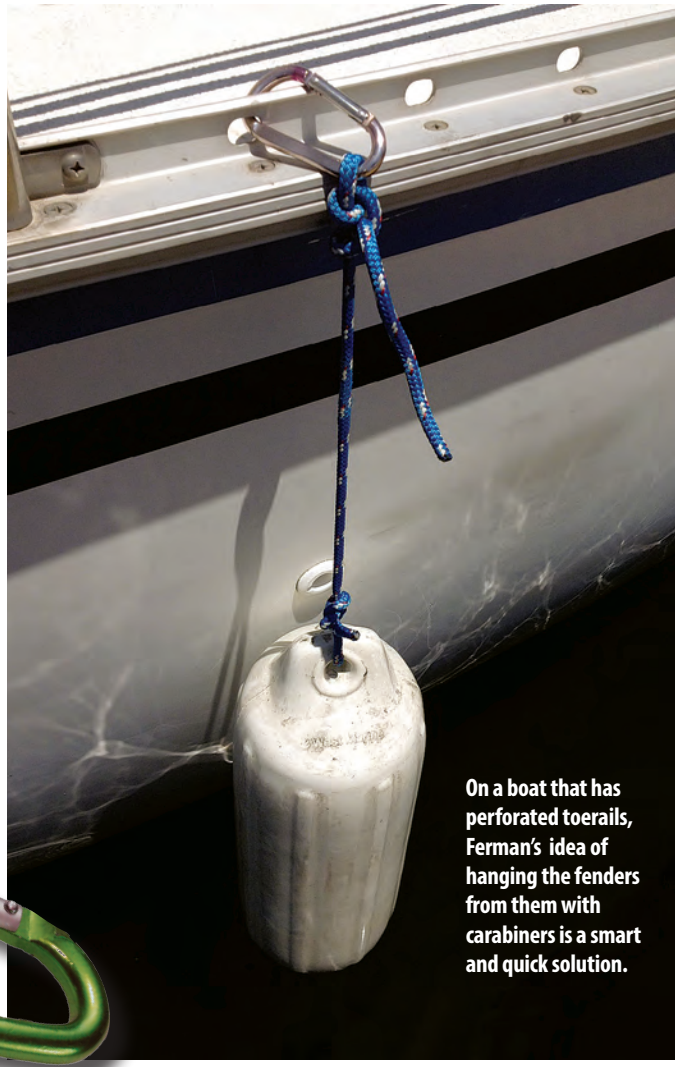
Big-box carabiners are the ultimate clip-ons

BY FERMAN WARDELL

I've tried a number of arrangements for connecting the fenders to *Wind-Borne*, my 1985 Hunter 28.5, but none have been all that satisfactory. Most recently, I used plastic clips on the lower lifelines with the fenders dangling over the side. There were two problems: the lines would chafe because they rubbed back and forth on the toerail, and clipping and un-clipping was a pain, occasionally resulting in dropped fenders — into the water while under way, of course! (On the bright side, my 12-year old grandson and I have enjoyed "fender-overboard" rescues.)

I've also tried tying the fender lines to the holes in the toerail, clips on the stanchions, and who knows what else with less than full satisfaction. But after considerable thought and shopping around, I believe I now have the perfect solution: carabiners.

With this arrangement, the attachment is very secure, there is little or no chafing, removal and re-attachment are easy, and it's cheap! I found the aluminum carabiners at my local Lowe's store for a buck each. And here's the cool part: I used two red and two green . . . for obvious reasons!



On a boat that has perforated toerails, Ferman's idea of hanging the fenders from them with carabiners is a smart and quick solution.

Ferman Wardell began sailing an 11-foot Styrofoam Snark on a 30-acre lake in North Carolina. After sail-schooling at North Carolina coastal Camp Sea Gull, he owned a 12-foot Scorpion and a San Juan 21. He now cruises and races Wind-Borne, *a 1985 Hunter 28.5, on Lake Norman near Charlotte. Ferman has sailed extensively in the Caribbean and enjoys maintaining, repairing, and "improving" his boat.*

Chris and Kellee Nolan, a couple of U.S. Coast Guard officers taking a two-year sabbatical, are currently in the eastern Caribbean. Kellee took this shot while up the mast. She and Chris are cruising on *Navigator,* a 1986 Pacific Seacraft 34. Chris reports that they're having a good time and Kellee's grin confirms it. 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.

American Westerly owners

Bravo for your review of the Westerly Centaur! We can say from experience that the Centaur is a beautifully designed boat and a safe, seakindly family cruiser. For anyone interested in Centaurs or any other Westerly boats, we would like to let you know about the American Westerly Owners' Newsletter. We share information on the upkeep of these good old boats, as well as stories of cruises our readers/contributors have taken in them. This publication is a quarterly email attachment, sent out at no charge to recipients. You don't need to own a Westerly or live in the Americas to receive the newsletter. You can subscribe to AWON by emailing us at westerlyowners@gmail.com We also are affiliated with the Westerly Owners' Association, a thriving worldwide owners' group with more than 3,000 members. To check out the many benefits of membership, or to join, visit its website: www.westerly-owners.co.uk.

–Marilyn and Johnny Carver, Wadena, Minn.

continued from page 9

need a system for raising and lowering the mast. I've reviewed all three articles about these systems that have been in your magazine and will use the information to build mine.

Also, I have read the articles about safety. My new boat will have at least two large fire extinguishers, and I had an automatic extinguisher installed in the engine compartment due to your articles about fires on boats. I have always worn an auto-inflating life vest, one with a safety harness built in. What's new is that my new boat will have jacklines for me to clip onto and all guests on my boat will be given a good safety discussion before we leave the dock. These changes, too, are related to articles in *Good Old Boat*.

–Dan Parnel, Auburn, Wash.

The Senior Sailor

I recently started a new website, www.theseniorsailor.com, because I was having trouble finding sailing websites of interest to senior sailors rather than those geared toward the interests of younger sailors.

I was interested in communicating with other seniors in the sailing community and talking about our concerns, adventures, and ideas and improvements to help us continue sailing longer. Because sailing is a very physical activity,

the older we get, the harder it is to continue. The easy thing is to turn to power and sell the sailboat.

My wish with theseniorsailor.com was to bring sailors of similar ages together. I will not call us old. We are seniors who still enjoy sailing and have adventures to tell, health tips to pass on, new ideas to make sailing easier and, finally, a place we can go to at any time to have a laugh.

Of course, to get a website like this going requires a way to communicate my ideas and spread the news. *Good Old Boat* has been wonderful to us right from the beginning and for that, many thanks. I hope some of your readers will join us.

–Fred Folkerts, Oakville, Ontario.

Chainplates Express

I located www.chainplatesexpress.com on the Good Old Boat website last Monday and sent them a drawing for replacement chainplates for my 1979 Lancer 25. We had a couple of follow-up email messages and a conversation when I placed my order. I received my replacement chainplates on Friday per my drawing. I highly recommend Chainplates Express if you need custom ¼-inch chainplates made and I can't say enough about their great customer service.

–Steve Crawford, Ridgecrest, Calif.

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

Boats for Sale

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1963 Classic sailing ketch. 30-hp Atomic 4. Exc cond. GPS, Autohelm. 5 sails including cruising spinnaker. Wooden hull. East Lake, OH. $10,000.
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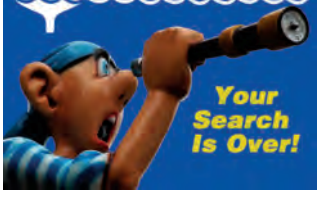

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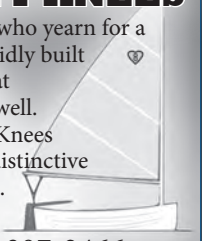

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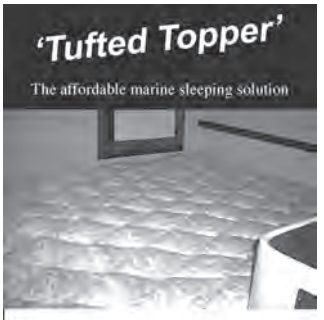

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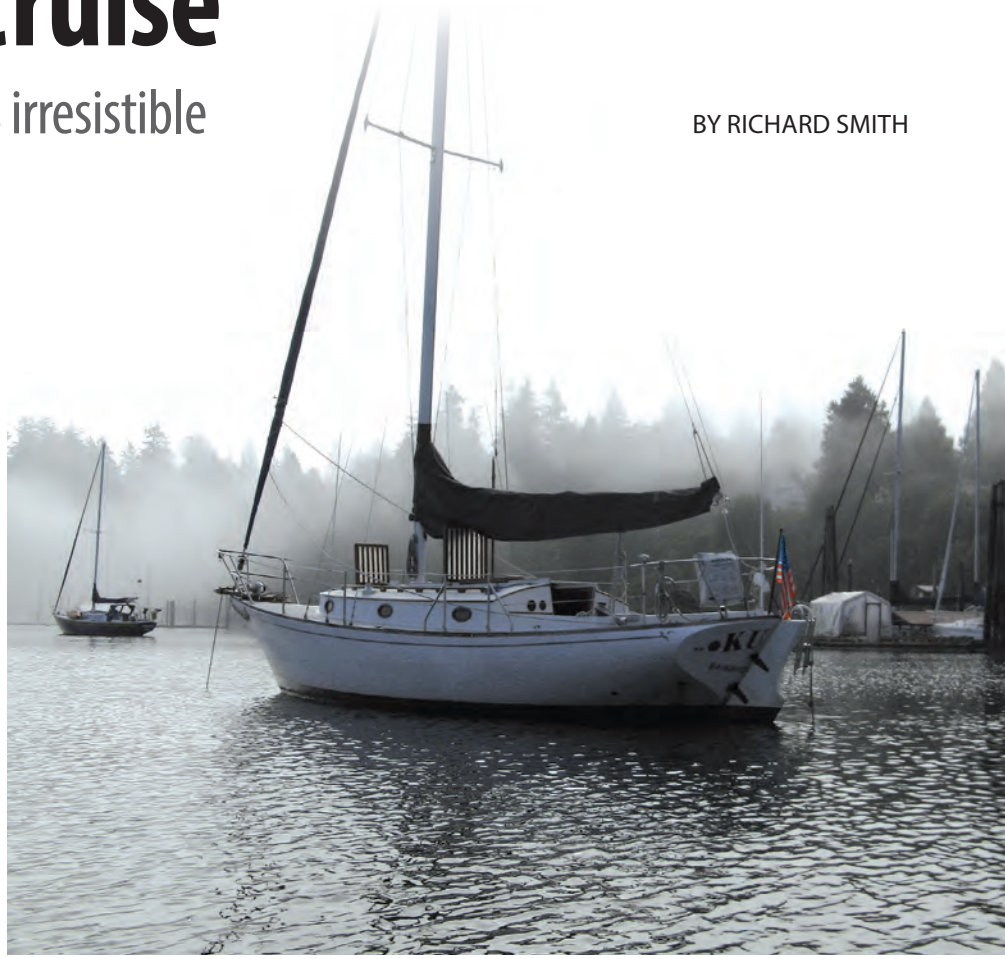

Past Labor Day, through October and well into November, there's some fine sailing to be had in Puget Sound — warm 75-degree days that turn into 45-degree nights. There will be sun and what's left of the summer wind and there will be wind with some back in it. These are days for sailing in less company, days that beg turning a sprightly daysail into an overnight anchorage.

If the weather's reasonably settled, I'll take a loaf of bread, butter, some fruit, eggs, and a couple of my wife's casseroles. Most anchorages are only a short hike from a grocery store, or Beth will join me by car and we'll either take the dinghy to a picnic site or find a good restaurant. Sometimes she'll stay the night.

As the sun drops below the tree line, I'll take a last look around to check alignments between chimneys and treetops to make sure we're well dug in, ready for the tidal swing and the possible surge of a cold front moving through. This is the time to pay out another 50 feet of scope and bring the dinghy up amidships, tethered fore and aft. Dropping below, I'll put in a couple of companionway dropboards and fire up the wood stove to take the gathering chill out of the air. Long evenings provide plenty of time for a good hot supper prepared slowly with a glass or two of wine while listening to the radio.

Instead of sleeping in the fo'c's'l or the quarter berth on these solo cruises, I've taken to pulling out the starboard settee berth and making up the double, closer to the stove. Bolsters made up of sleeping bags stuffed into large "pillow cases" make good backrests. I sleep under a medium-weight duvet and sometimes pull on a wool blanket or two. November nights are long and a hot water bottle is a welcome friend when the fire goes out.

Mornings are dark and cold, but when it's light enough to read the barometer, I'll put the kettle on to boil and make a pot of tea, replacing the kettle with a flowerpot upside down over the burner to generate a little warmth before diving back into bed. If the morning fog is thick and wet, I'll cook up a hearty bacon-and-egg breakfast with toast and coffee. Other mornings, I launch the dinghy first thing and set off through the mists, rowing close along the shore, sometimes following a great blue heron breakfasting in the mud flats.

If an interesting boat appears out of the fog, I'll row over that way. A lone crew member may appear in the cockpit and a friendly wave will bring me over to his rail where we'll whisper of prospects for the day: when this fog might burn off, the likelihood of sun and wind, and so forth. We'll exchange comments about the origin of his lovely schooner, where he's headed, and the pleasures of rowing a wooden dinghy you've built yourself. After a few minutes, we'll nod and I'll push off. Moving through the gray water, an occasional glimpse over my shoulder will tell me I'm on course for *Kuma* waiting at anchor a quarter mile away.

A pair of harbor seals may follow in my wake. In time, one will disappear, leaving his partner to carry on forging ahead with a body twist, steering this way and that with arm-like fore flippers, submerging and surfacing over to port, diving and coming up again over to starboard. When I look away she'll be gone.

Finally, I'll pull to line up with the big boat, moving against the current with one oar shipped, ready to land. But the seal will pop up again, closer than ever, bobbing straight up and bringing her glossy head and narrow shoulders fully out of the water as if springing from a submerged rock. She'll move outsized lashes over globular eyes and breathe heavily through V-shaped nostrils. Sweeping long antenna-like bristles across her chest with her whiskery muzzle, she may almost touch a floating blade of varnished spruce. One last look and she'll roll over backward, twisting her winsome shape to reveal the brown and spotted creaminess of her breast before swimming away.

Richard Smith's bio appears on page 51.

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