Good Old Boat

The sailing magazine for the rest of us!

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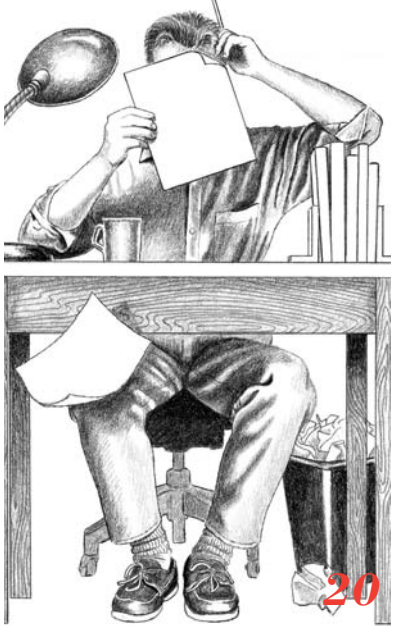

About the cover . . .

Ron Walton and Dieter Loibner take *Mijita*, Ron's 22-foot Falmouth Cutter for a spin on San Francisco Bay. *Mijita*, an endearment meaning "my little girl" in Spanish, is just right for this beautiful Lyle Hess design built by the Sam L. Morse Company. For more about these boats, see Page 5. Photo by Bob Grieser.

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You've got to/ you're gonna hit some docks

Barked knuckle

by Jerry Powlas

I've heard it said that one of the differences between the sexes is that a woman will hit a dock and say, "I wonder what I did wrong," and a man will hit the same dock in the same maneuver and say, "Who put that thing there?"

The wisdom of this story may not actually be drawn along gender lines, but there are certainly those who can hit a dock with no remorse whatsoever and those who look for a deeper meaning when they do so. My motto is "dolphin poles are a renewable resource," and from that you can tell in which group I belong.

On our boat there are roles and duty stations, as there are, I would bet, on most boats. It is not politically correct, but it happens. I get the helm in difficult close-quarters maneuvering. I'm comfortable with this; so is Karen. The obvious reason for assigning this duty station to me is that I've had more experience doing it, and so will do it more skillfully. The obvious reason is not the real reason. The real reason is actually a complex dynamic that starts with my knowing something deep down in my gut that Karen does not know deep down in her gut. (Yet.)

I've been "wrenching" now for maybe 45 years as a mechanic, an engineer, and an incurable do-it-yourselfer. I've lost count of the number of times I've been hanging upside down or been crushed into some other impossible position looking at a stuck fastener and knowing that I didn't have the tools or the choices, and when that fastener finally let go I was going to bark my knuckles. The price of doing that job was a little blood and loose skin. So be it. Bang, clank, "Dang, I thought so!" I've never found any good way to avoid those situations, and my hands show it.

Some people work on boats and cars and houses because they like to work on things. I work on boats so I can sail them, cars so I can drive them, and (Karen would say) not so much on houses at all. The point is that I'm really after something beyond the task at hand.

There are several dreams that circulate through sailing, and also through our magazine. There are a million versions of these dreams and so the stories can be told that many times, and no one will tire of the telling.

In the first dream, would-be sailor/boatowners dream that they can own a good boat even without being extremely wealthy. They will get an older boat and fix it up, investing time and effort in transforming the boat into a jewel. Note here, they do not expect to get off easy in this dream. They know their time and effort are their most precious possessions. They are not trying to get off easy. They are trying to get on the water.

In the second dream, the would-be sailor has little or no experience with the task of sailing and wants to learn and become competent in the use of boats. Often this dream leads to the first dream or follows it.

Please understand that, to my mind, these are two of the most beautiful and magical dreams a sailor can have, and it is a credit to the way the world works that many a sailor has had them. What follows these dreams in many cases is the actual doing of the deeds. This is beautiful stuff, too, and it is at that point that the doers of these deeds need to know the secret deep down in their gut that I and many other sailors know: you are not going to get it all right. The work won't be perfect. There will be some barked knuckles and sore backs and whole days you will not wish to see again. You will also know that you can do these things again if you choose or if you must.

And you will know one more thing. Perhaps the most important thing. When that jewel is in the water, and the work is temporarily done, and you are going to go sailing, you are gonna hit some docks, literally and figuratively. It is a characteristic of the human condition. It is how we learn. It is both how and why we tolerate imperfection. We must.

It's OK.

Trex for the rest of us
Having sailed for a year on my "faux teak" deck (discussed in the January 2001 issue), I have the following observations to add: 1) Trex is *excellent* nonslip – even when wet, with deck shoes or barefoot. 2) Trex dries off amazingly fast after soaking – very nice for morning coffee in the cockpit, as the dew is gone as soon as the sun hits it. 3) The fix I recommended by mixing Trex sawdust with epoxy is ***not*** such a great idea. The epoxy (West system) yellows with time, and the repair becomes noticeable. I plan on redoing it next spring by routing out a rectangular section and inlaying a new piece of Trex. The edges will show, but it will blend in better. 4) The deck seems quite forgiving of dings from dropped winch handles, hammers, etc. No noticeable damage. 5) It is quite resistant to coffee stains, etc. They either wipe up or just disappear. 6) I recently had my boat surveyed, for insurance, and the surveyor was very favorably impressed by the Trex and, in fact, was going to recommend it to a friend who was looking for a way to re-do his deck. I had been worried about this issue with surveyors, but at least with this one, it was great. If anyone is interested in pursuing such a project, feel free to contact me: mparker@mtp.mv.com.

Mark Parker
Hancock, N.H.

Thanks for Don Casey's article
We appreciated the topside refinishing article by Don Casey (January 2002) – really timely, as we are planning to refurbish the exterior of our 1975 Alberg 37 yawl. We have been reading up on this task, and Don's article is the best we've seen.

Tom and Kaye Assenmacher
Alberg 37 Owners Association
Kinsale, Va.

Another sanitation alternative
I applaud Andrew "Aussie" Bray for an interesting and well-informed article on the installation of a working sanitation system into a good old boat (January 2002). My guess is that, with increased knowledge on the subject of holding tanks, boatowners are more likely to get discouraged and put off their installations until the authorities start giving out fines. This is partly due to the complexity of these systems, which does much to contradict the simple pleasure of sailing. Maybe there are those who would rather spend their valuable free time cutting holes, wrestling with hoses, and making otherwise unnecessary changes to their beautiful boat in order to install such a system. I don't know.

But I do know that the rest of us have other alternatives available to us in the way of composting or biological toilets. At the forefront of my mind (but not mentioned in the article) is an alternative MSD type III (designated as a holding tank) which is simple, compact, and reasonably priced when compared to a typical holding tank system. Plus it uses ***no*** water, and is installed in about an hour. The Air Head Dry Toilet (which I manufacture) is odorless, works biologically (producing non-offensive aerobic material) and will actually fit inside your boat. With capacity well beyond many holding tanks, a once-a-season emptying scenario is possible if used on weekends. Go to <http://www.airheadtoilet.com> or call 866-556-1571 for more info. Now boatowners can have a legal sanitation system that – like a sailboat – is designed to work in harmony with nature and without the odors, complexities, and uneasiness associated with holding 200-odd pounds of raw sewage in a beautiful boat. Naturally, I suggest a through investigation of alternatives to find the best solution for your particular application.

Geoffrey Trott
Eos Design, LLC
Mount Vernon, Ohio

Appropriate and timely
Having received my latest copy of *Good Old Boat* just before Christmas, I am a happy person. In a fit of enthusiasm, I have just acquired an Albin Vega that needs a holding tank (timely article) and needs heat (Tiny Tot article was appropriate – March 2001) and needs some TLC (all articles are appropriate). Thank you for putting out a super magazine.

Al Horner
Vancouver, British Columbia

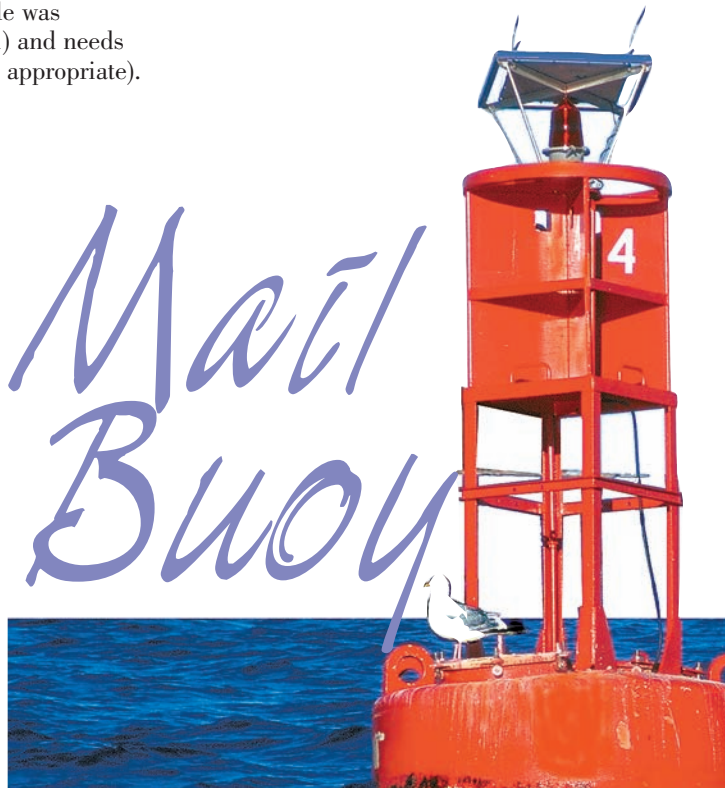
Fond memories of a Stone Horse
I've always loved the look and feel of traditional boats and really liked the piece on the Stone Horse (January 2002). I've owned a number of Alberg designs over the years (as I could never find a Stone Horse for sale), so I found the article on Carl Alberg, as well as Ted Brewer's comparison of the Stone Horse, Quikstep, and Sea Sprite, particularly interesting and well done. I owned a Sea Sprite some time ago and, if a boat could ever exceed an owner's expectations, that boat did. My gallant little Sea Sprite safely took me all over the Chesapeake Bay in all kinds of weather and provided some of the most thrilling and satisfying sailing I've ever had. I found its only shortcoming to be the maddening tradeoff between aesthetics and purpose: the long and low-aspect-ratio boom made it impossible to install a Bimini, a must for summer sailing on the Chesapeake. But I sure loved that little boat!

Warren Milberg
Lannandale, Va.

I second that
I received my first copy in November. What a great magazine! Just wish that I had discovered *Good Old Boat* at the outset. I was particularly delighted with the latest issue in which there was a very good article on the Stone Horse cutter. As a past owner of hull #75 (one of my good old boats), it brought back many good memories of this beautiful boat. To my knowledge, she was the only Stone Horse on Lake Ontario and often received admiring praise from those who saw her. I also appreciated the Ted Brewer article in the November issue on his early years sailing on Burlington Bay on the western end of Lake Ontario. As a member of the Macassa Bay Yacht Club located on Burlington Bay, it is nice to

Continued on 77

Mail Buoy



Falmouth Cutter 22:

by John Vigor

The British coastline is rugged and convoluted around Falmouth, Cornwall. The tides run fast, and the wind blows stormily from the southwest. A boat under sail needs to be strong, buoyant, agile, and weatherly to survive those conditions. Just like the Falmouth Cutter 22, in fact.

At first glance, you wouldn't connect Lyle Hess's feisty little cutter with that coastline. She looks too small, too vulnerable — and perhaps too darned cocky for her own good. But, in fact, in every respect except size, she shares the properties that earned the renowned Falmouth cutters their reputation for safety and seaworthiness.

She's old-fashioned, deliberately old-fashioned, as if she's delighting in carrying on an ancient tradition of full keels and simple fittings in an era when fin keels and electronic gimmicks rule the roost.

Lyle Hess designed this cutter with no regard for racing rules or modern fads. His aim was to create a pocket cruiser that could cross oceans, and his foremost concern was safety. You'll notice her resemblance to her bigger sister, the 28-foot Bristol Channel Cutter. In fact, only minor changes were dictated by her smaller size.

Although it wasn't a design priority, the Falmouth 22, with her 8-foot beam, turned out to be trailerable. She is not the sort of trailersailer you tow behind the family car and launch into the nearest lake for a Saturday afternoon jaunt, however. In the first place, she weighs 7,400 pounds, and you'll need at least a Suburban or a full-size pickup with which to tow her. In the second place, it would take you most of the afternoon to get her mast and rigging set up properly.

But the fact that she's trailerable and fully capable of ocean passages makes her very unusual and quite attractive to gentleman sailors who prefer not to sail to windward. For example, it's a nice downhill passage from Seattle to the

On the facing page, Ron Walton and Dieter Loibner sail Ron's Falmouth Cutter, **Mijita,** *in San Francisco Bay. At right, Keith Smith gets acquainted with his brand-new Falmouth Cutter in this photo, taken in 1995 in Avalon on Catalina Island shortly after taking delivery in Costa Mesa, Calif. She was christened* **Maid of Slapton.**

Old-fashioned, cocky, seakindly

Sea of Cortez, but it's a dreadful, endless slog against wind and current on the way back. With a Falmouth Cutter you can sail down in comfort and then tow her home against the prevailing wind at 50 miles an hour up Interstate 5.

Her shallow draft of 3 feet 6 inches gives her some wonderful advantages, too. She can sneak into pretty little coves and anchorages in the Florida Keys, or the Bahamas, that are denied to other ocean-going yachts with deep keels.

And there's another thing about a small boat that is often overlooked. Many people actually feel safer and more confident on a smaller boat because they feel more in control at all times. The sails are smaller and easier to manage. The engine is smaller. You can probably start it by hand. The tiller never becomes unwieldy. You can paint the bottom in a couple of hours with a gallon of antifouling. Everything is more human-sized and manageable. You never have to worry about your refrigeration going wrong because you don't have room for a freezer in the first place.

Basic design

The Falmouth Cutter 22 looks as if she should be built from wood. She has all those things that wooden boats have: bulwarks, a bowsprit, a boomkin, a tiller, a saucy sheerline, an outboard rudder, and a full keel. But she's made of fiberglass all right, and it's a solid, hand lay-up, not cored, so that the finished hull weighs about 1,100 pounds.

The Sam L. Morse Company, which builds the cutter in Costa Mesa, California, says the thickness of the hull varies from 5/16 inch at the sheer to 15/16 inch near the bottom of the hull. According to the company's sales brochure, "The actual thickness at the bottom of the keel is greater than 1 inch because we overlap layers at this location."

The lead ballast, a 2,500-pound block, is pre-cast and then placed inside the hull cavity. It's fixed in place by poured resin and covered with three layers of glass mat and roving.

Unlike the hull, the 22's fiberglass deck does have a core. It's not the usual edge-grain balsa, however, but ½-inch marine plywood encapsulated in glass mat and 24-ounce roving. This makes a very strong, stiff deck on which you can mount hardware of your own without worrying about compressing the deck when you tighten the fasteners. Extra layers of plywood are used where the mast and mooring bitts penetrate the deck.

The sidedecks are reasonably wide and unobstructed by shrouds, which are

Bob Grieser

Bob Grieser

taken outboard to their fullest extent for more efficient mast support, and you can do your work at the base of the mast in greater security because of the flat deck space between the coachroof and that cute little scuttle hatch a couple of feet forward of it.

Like her big sister, the Falmouth Cutter 22 has a plumb bow that sweeps around fairly sharply beneath the waterline and then takes an almost straight line aft to the deepest part of the keel under the cockpit. This is not exactly a high-lift airfoil fin, but it's alleged to be more efficient than it looks. Although it's long and shallow, Lyle Hess seems to have found a way to make this keel perform to windward. The sales brochure claims it gives the boat "as much or more windward ability and speed as other, now more common, cruising keels with skeg or spade rudders." In the absence of proof to the contrary, and making due allowance for the breathless prose of the sales staff, we have to give the brochure the benefit of the doubt.

Her outboard rudder is attached directly to the keel and the transom, which lines up with the end of the keel. This is undoubtedly the simplest and strongest way to attach a rudder and, if anything should go wrong, it's the most accessible for repair.

The self-draining cockpit is small and shippy, safe at sea when you have to leave the boat to look after herself. The tiller sweeps over a good deal of it, but no bluewater sailor is going to complain about that. And in port you can remove the tiller completely and lock it down below for security reasons when you leave the ship. Nothing deters a boat thief more than not being able to steer what he's stolen.

Most people will want the inboard engine with this boat, but depending on the kind of sailing you do most, it might also make a lot of sense to choose the outboard option. The inboard engine sits quite deep in the cutter's capacious nether regions; so much so that the propeller shaft runs almost horizontally. The standard power plant is the Yanmar 1GM10, a single-cylinder, 9-hp diesel that drives a two-bladed, 14x10-inch prop. The 15-gallon fuel tank is situated under the cockpit, high enough in comparison with the engine to obviate any fuel lift problems. With this amount of fuel and using about half a gallon an hour at full power, she'll have a range under power of about 180 miles at a little over 6 knots. Throttled back to a gentle cruise, she should do 250 miles or so at 4½ to 5 knots in calm weather.

***Ron Walton peeks into* Mijita, *above. At left and below, stem to stern,* Mijita *is shippy and seaworthy. Ron is the editor of the newsletter for owners and lovers of these Lyle Hess-designed sailboats, the* Falmouth Cutter News. **Check his Web site, <http://homepage.mac.com/rwsailor/>, and also that of the Sam L. Morse Company, <http://www.samlmorse.com>.**

Accommodations

One of the first things you notice about the Falmouth Cutter 22 is that she's all wood down below. The Morse company does not use plastic hull liners or molds for the furniture. It's all done by hand from scratch. One big advantage here is that if you have any special requirements for the interior that differ from the standard layout, the company can build it exactly the way you want it, and it may not even cost you any extra.

Practically speaking, the lack of liners means you can get to any part of the hull in a hurry, so when you have to stuff a blanket in a hole in the chine, you won't have to waste precious time chopping away acres of plastic.

There's headroom down below for all normal-sized people, at least under the cabintop and for a square foot or two under the hatch in the fo'c's'le, although you'll have to duck as you pass from one area to the other.

That forward cabin contains the head, a hanging locker, a vanity dresser, and a double berth to port. Alternatively, according to Roger Olson, former president of the Sam L. Morse Co., you can have a double berth aft that runs athwartships, or even — if you opt for an outboard engine instead of an inboard — an enormous wall-to-wall bunk. Some owners do opt for the outboard version, not necessarily for the pleasures of the oversized bed, but because of the large amount of stowage space it opens up.

Aft of the forward cabin, the galley lies to port, consisting of a large stainless-steel sink and a gimbaled twin-burner cooker with oven, with stowage outboard for dishes, cutlery, and condiments. Propane for the cooker is stored in aluminum tanks concealed in two mahogany deck boxes on either side of the mast. Across the gangway, to starboard, there's a big icebox with a top cover that doubles as a chart table.

Aft of the cooking/navigation area there are two settees that tuck in under the cockpit seats to become quarter-berths. A table slides out from beneath the cockpit for use in the seating area.

Bob Grieser

The rig

As her name implies, she has a simple, single-spreader, masthead rig of Bermudian mainsail and two headsails, a forestaysail and a jib.

The 107-square-foot Yankee jib is flown from a bowsprit with just the right amount of steeve (the angle of the bowsprit) to create the illusion of a much larger boat, and the 98-square-foot staysail tacks down to the stemhead. The mainsail (171 square feet) is narrower and taller than you might expect on this type of boat, but its increased efficiency obviously contributes to good windward ability.

The boom runs the full length from the mast to the transom, which makes for easy positioning of the mainsheet but tends to complicate the backstay arrangement. As a consequence, the

Mijita's *forward spaces, above, and a look at the interior of* Maid of Slapton, *at right and below. Keith Smith describes* Maid *as "pretty much a standard Sam L. Morse boat." He took delivery in 1995 and enjoyed cruising the California coast before shipping her home to England.*

Bob Grieser

Bob Grieser

backstay is led clear of the boom and the mainsail leech by a bumpkin that you could almost describe as petite if it weren't so determinedly rugged (see photo on Page 6).

Performance

When we talk of performance, we really mean two things: speed, especially to windward, and seakindliness. You have to be realistic about the speed of any boat that is less than 21 feet on the waterline and displaces more than 7,400 pounds. Then, having reined in your expectations, you can prepare to be pleasantly surprised. The Falmouth Cutter 22 is not going to sizzle around an Olympic course as would a club racer like a J-22, or even a Santana 22, but she will not disgrace herself in the company of other cruisers.

And when it comes to seakindliness and seaworthiness, she wins hands-down against the racers. She will keep going to weather in seas rough enough to knock the lightweight club racers back to the shelter of the yacht club bar. In the trade winds she'll have that slow easy motion that makes a heavy displacement vessel so popular for long voyages, and she'll display her ability to track down the face of large swells without the need for constant sawing at the helm and the constant wearying threat of broaching to.

Known weaknesses

There must be some known weaknesses, apart from the "nuisance" weaknesses such as the bowsprit and bumpkin, but they are nowhere particularly evident.

The cockpit might be a little exposed in rough weather, perhaps, but we can hardly hold that against her. And by the time things are shaping up for a bad storm, you might want to shut yourself down below and let her look after herself, in any case.

Given that a good big boat is safer than a good small boat, the Falmouth Cutter 22's size is theoretically a weakness. She is so conservatively designed, however, and so ruggedly built, that you eventually are forced to the paradoxical conclusion that she suffers only from the best and strongest kind of weakness.

Owners' opinions

People who own Falmouth Cutters are unreliable arbiters of her desirability. The kind of sailor who buys this boat is

Ron Walton sails on San Francisco Bay, above. Keith Smith at anchor off Catalina Island, at left. Keith says, "Seven years after launching my Falmouth I am as enthusiastic about her as I was back in March 1995."

biased from the start, a hopeless romantic who knows from the beginning that only a boat with charm, character, craggy good looks, and the highest standards of seakindliness will satisfy him. Or her, as it happens. Several women have crossed oceans in them.

Mary White, owner of *Sapo,* sailed singlehanded. After the 31-day crossing from Mexico to the Marquesas, she said she gave thanks to Lyle Hess and the Sam. L. Morse company every day. And when she got farther west she added: "People keep asking to buy my boat, I even have an offer here in Tonga."

Some restless people truck their Falmouth Cutters all over the place. Gary Felton sailed his boat, *Angelsea,* directly from San Diego to Cabo San Lucas, Mexico. After seven months in the Sea of Cortez, he borrowed a trailer and took her back to San Diego. Then he trucked her to Fort Lauderdale, Florida, and made a 21-day trip to the Virgin Islands.

Mitch Kilgore ran into heavy weather with his *Hopscotch* en route to the Bahamas. "As soon as it got dark, the wind freshened to 25 knots, and the seas built to 8 to 10 feet." The cutter kept beating hard to windward with plenty of spray and great motion, yet Mitch felt quite safe. "*Hopscotch* was in her element," he said. "The crossing was somewhat scary for my family, but they got over it fast, being preoccupied with the Bahamas. I bet if more gentlemen owned Sam L. Morse boats, they'd sail to weather more often."

Conclusion

This is a very modern old-fashioned boat, one that retains the best characteristics of traditional design and blends them with the latest boatbuilding technology. If it's true that the best things come in small packages, then the Falmouth Cutter 22 proves the rule.

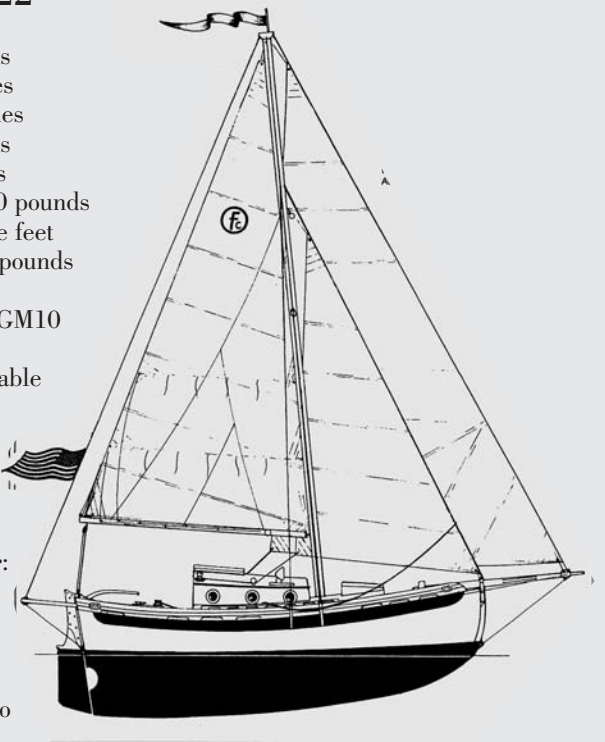
It also proves the rule that small things are not necessarily inexpensive things. The basic price of a new boat from the factory is $116,000 *(semi-complete for $83,650 and hull and deck only for $27,200. Ron Walton says the best deals are used boats, of course, and he knows of at least one that has never been launched* ***–Ed.****).* But, considering what you get for the money, it's good value. And used boats are a lot cheaper, although you rarely come across one on the open market because they're snapped up so quickly and quietly. It's the Falmouth Cutter cult at work, you know. They look after their own.

John is a professional journalist. The author of The Practical Mariner's Book of Knowledge, The Sailor's Assistant, *and* The Seaworthy Offshore Sailboat, *he has worked for major newspapers around the world and is a frequent contributor to leading sailing magazines. He has sailed for more than 40 years in boats 11 to 40 feet in length and logged some 15,000 miles of ocean voyaging. In 1987 he and his wife, June, and their 17-year-old-son sailed their 31-foot sloop from South Africa to the U.S. This series of boat reviews is based on articles from John's book:* Twenty Small Sailboats to Take You Anywhere, *which is available from The Good Old Bookshelf (see Page 65 for more information).*

In short

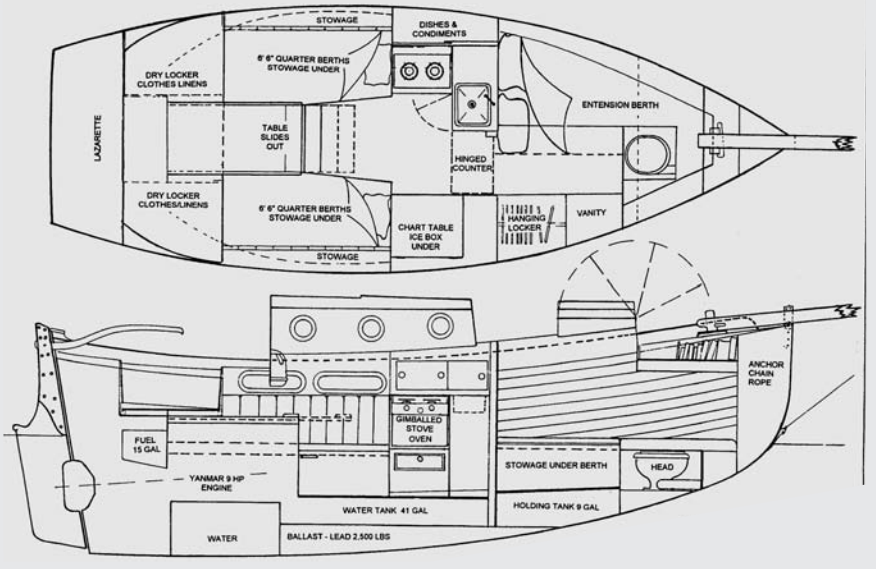
Falmouth Cutter 22

Designer: Lyle Hess
LOA: 30 feet 6 inches
LOD: 22 feet 0 inches
LWL: 20 feet 10 inches
Beam: 8 feet 0 inches
Draft: 3 feet 6 inches
Displacement: 7,400 pounds
Sail area: 403 square feet
Ballast: Lead, 2,500 pounds
Spars: Aluminum
Auxiliary: Yanmar 1GM10 9-hp diesel
Designed as: Trailerable pocket ocean cruiser



In comparison

- **Safety-at-sea factor**: 7 (Rated out of 10, with 10 being the safest.)
- **Speed rating:** Reputedly quite fast to weather and good passagemaker.
- **Ocean comfort level:** One or two adults in comfort.



Better, more reliable
Furling systems

Choosing and installing a roller furling system . . . options and opinions

by Dan Spurr

Back in the late 1980s, when my wife, Andra, and I were cruising aboard our 1965 Pearson Vanguard, all our headsails were hank-ons. One of the most annoying jobs was stuffing a genoa into its bag, made more difficult because we left all the hanks on the forestay except the bottom one. To get the bag off the deck, we'd clip the jib halyard to the webbing on the bottom of the bag and hoist it. It didn't help that the bags always seemed too small.

Some years later, after Fred Cook and I had installed a new Schaefer furler on our C&C 33, I took Andra for an inaugural sail. As we returned to the harbor she said, "Don't you think you ought to drop the genoa?" I pulled the control line, which rolled the sail up like a window blind.

Andra watched in amazement, asking, "How come we didn't have one of these when we were *cruising*?"

Good question.

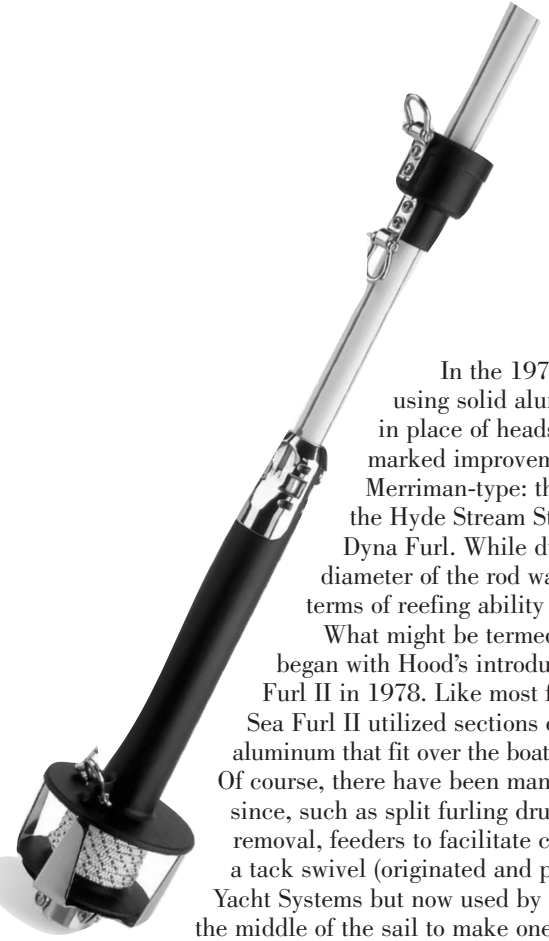
Roller headsail furling is one of the most significant recent advances in sailboat technology. Along with electric and self-tailing winches and windlasses, roller furling more than any other device has enabled short-handed crews to manage larger boats. Indeed, where 15 to 20 years ago most cruising couples felt that 35 to 38 feet was the maximum size boat they could handle, today older couples are routinely circumnavigating in 50- and 60-footers — thanks largely to headsail furling.

And it's not just cruisers. Single-handed ocean racers depend on roller headsail furling. You couldn't do the Around Alone or Vendee without it. The open-class 60s typically are rigged as double-headsail sloops with headstays and inner forestays, each fitted with roller furling. Where 20 years ago failure of these mechanisms was not uncommon (remember watching the battered crew of some boat enter harbor with the tattered remains of its headsail flogging in the gale?) today they are remarkably reliable. Failures are surprisingly few. An override on the drum of the control line is probably the most common problem and that can be avoided by keeping a little tension on the line as the sail is let out . . . rather than letting the sail unfurl with a bang.

Headsail furling isn't just for big boats. While it is true that the smaller the sail the easier it is to trim, drop, and bag, nothing is simpler than making the sail disappear by simply pulling on a line.

History

While various and simple means of reducing headsail areas have been around as long as the sails themselves, the first mechanical systems did not appear until the twentieth century along the English Channel. The British Wykeham-Martin furling gear is mentioned in the book, *Single-Handed Cruising*, by F. B. Cooke, published in 1924, and in the 1940s Merriman introduced its wire luff system which gave small boat owners an alternative to hanked-on sails. Swivels top and bottom permitted the sail to be furled around the sewn-in luff wire, which was independent of the headstay. Sag, however, increased terribly as the wind built, and sail shape suffered proportionally.



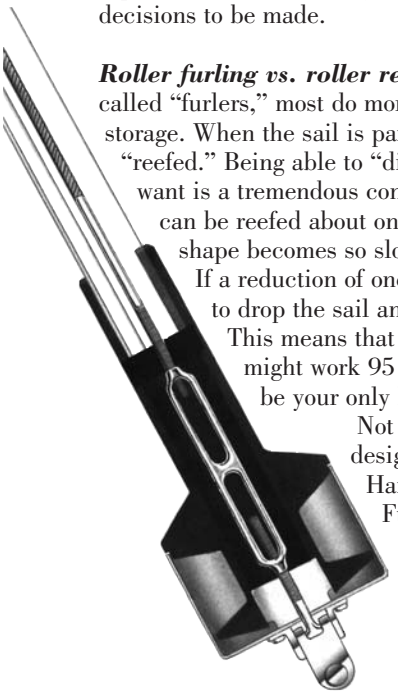
In the 1970s, three systems using solid aluminum extrusions in place of headstays represented a marked improvement to the Merriman-type: the Hood Sea Furl, the Hyde Stream Stay, and the Stearn Dyna Furl. While durable, the small diameter of the rod was a drawback in terms of reefing ability and sail shape.

What might be termed the modern era began with Hood's introduction of the Sea Furl II in 1978. Like most furlers today, the Sea Furl II utilized sections of hollow extruded aluminum that fit over the boat's existing headstay. Of course, there have been many refinements since, such as split furling drums for quick removal, feeders to facilitate changing sails, and a tack swivel (originated and patented by Hood Yacht Systems but now used by others) that allows the middle of the sail to make one full turn before the tack, thereby keeping the middle of the sail from bellying out. The basic idea, however, remains the same.

The same technology also has been applied to mainsails, though these systems are found almost exclusively on large boats because most require custom masts, which are very expensive. Recent improvements to in-boom mainsail furling gears make them viable alternatives to in-mast mainsail furling.

Choosing a system

If you're in the market for a headsail-furling system, and especially if this is to be your first, there are, naturally, decisions to be made.



Roller furling vs. roller reefing. Though most systems are called "furlers," most do more than just roll up the sail for storage. When the sail is partially furled it is said to be "reefed." Being able to "dial in" the amount of sail area you want is a tremendous convenience. Generally, most genoas can be reefed about one-third of their area before sail shape becomes so sloppy that it's unwise to continue. If a reduction of one-third isn't enough, then it's best to drop the sail and hoist a smaller jib or storm sail. This means that though a roller furling genoa might work 95 percent of the time, it shouldn't be your only headsail.

Not all systems, however, are designed to be reefed. Some, such as Harken's and Schaefer's Small Boat Furling Kits, which consist of drums and swivels but not luff extrusions, are for completely furling the sail only, so be sure you know what you're buying. These are best suited to daysailers with small jibs that you wouldn't be likely to reef anyway.

PVC flexible foils vs. aluminum extrusions. Cruising Design Inc. pioneered the use of flexible, one-piece, PVC foils in place of extruded aluminum sections. These flexible furlers are ideally suited to trailersailers because they are much less likely to be damaged during frequent steppings and unsteppings on the launch ramp. They are not, however, as rigid as aluminum foils, so headsail sag will be somewhat more pronounced. CDI customers, however, have very few complaints.

In the past few years, Hood, Harken, and Schaefer each tried to grab a piece of CDI's trailersailer market share by introducing lower-cost furling systems with one-piece foils. Harken's Heli Coil used PVC with a polypropylene interior and braided stainless steel for more torsional rigidity, but Harken's supplier went out of business, forcing the Heli Coil off the market. Schaefer's Snap Furl has a round, single-groove PVC foil. The foil for Hood's Sea Flex is flat PVC, like CDI's Flexible Furler.

Flexible foil systems are generally targeted at owners of boats up to about 25 feet, though CDI has models for boats up to about 30 feet. Limiting factors are headstay length (for example, 33 feet for CDI's FF4 model), headstay diameter (3⁄16 inch diameter) and turnbuckle pin size (3⁄8 inch diameter).

Aluminum foils are the way to go for larger boats, especially those that don't have their masts frequently unstepped, and for those owners who want premium sailing performance.

Not all systems with aluminum luff foils, however, are created equal. A few companies, most notably Hood, offer several levels of quality — the SL model is a sort of economy version of the main line Sea Furl 5. (The Hood LD or line-drive model with continuous control line has been discontinued, but parts are still available.) If you don't plan on sailing your boat long or hard, one of these systems can save you some money.

Most other major companies — Furlex, Harken, Schaefer, Profurl, Reckmann, and Reef

Opposite page, a Catalina sails with a CDI Flexible Furler. Furlers, this page clockwise from top left: Schaefer's Snap Furl, Harken's Unit 1, and CDI's Flexible Furler.

A Harken furler on a Pacific Seacraft 40.

Rite — incorporate the same essential features in all sizes and models.

Plastic bearings vs. steel bearings. A major reason for the improvement in modern furling systems lies in how loads are handled. Today's furlers incorporate multiple races of low-friction ball bearings, both in the bottom drum bearing and top swivel *(see cross-section drawing on Page 14)*. Engineers have experimented with various ways of orienting the races so the ball bearings aren't unduly stressed when loads come from unexpected directions. Harken says its bearing system is "omni-directional," and Furlex says its bearings "float" on pivot points to handle the "offset" loads of tack and halyard. Schaefer says its races have "angular contact" surfaces. Theoretically, such features should translate into easier furling, which is about all the average owner cares about. Unfortunately, most owners don't get to try three or four systems for ease of furling before buying one.

Bearings may be plastic or steel or a combination of both. Most plastic bearings are actually Torlon, much tougher than nylon or Delrin, but not as hard as steel, so they can compress under severe loads. That's one good reason to buy a furler properly sized to your boat. Torlon bearings won't corrode but, because they generally run in open races which can collect salt deposits and dirt, they should be periodically flushed with fresh water.

Steel bearings are, of course, harder. Furlex uses stainless-steel bearings in open races. Profurl's carbon steel bearings run in sealed, grease-packed races that should last many years before water intrudes, thereby requiring replacement and repair. In a rather odd concession to what it perceives as a consumer fondness for Torlon, Hood's Sea Furl 5 has both stainless steel and Torlon ball bearings, though the steel bearings do all the work — the Torlon bearings carry no load. Hood's bearings run in open races and require freshwater flushing.

There isn't a wrong choice here, but in my experience steel bearings make for somewhat easier furling.

Method of connecting extrusions. Especially if you're going to install your own furler, you'll be interested in how the foil extrusions connect. The methods are as varied as the number of manufacturers, each of which seems to think it has developed a better mousetrap.

Set screws, such as used by Profurl and Harken, have the advantage of being removable, but must be set in a thread-locking compound to keep them from falling out.

Rivets are strong and secure, but if you ever have to disassemble the extrusions, you'll have to grind off their heads as you may have to also on Hood's old button locks.

Others, like Furlex, use ingenious snap-together extrusions that are assembled without fasteners and can be taken apart without destroying anything.

"These flexible furlers are ideally suited to trailersailers because they are much less likely to be damaged during frequent steppings and unsteppings on the launch ramp."

PVC Foil Furlers for 24-footers

Make	CDI	Hood	Schaefer
Model	FF4	Sea Flex	Snap Furl
Average discount price	$425	$480	$500
Max headstay length	33' 0"	33' 0"	31' 1"
Max wire diameter	7/32"	3/16"	3/16"
Max pin size	3/8"	3/8"	7/16"
Cage type	Closed	Closed	Open
Extrusion shape	Flat	Flat	Round
Extrusion fasteners	n.a.	n.a.	n.a.
Bearings	Plastic	Torlon	Torlon
Adjuster	No	No	No
Tack Swivel	No	No	No

Extrusion shape: round vs. elliptical. Here's the dilemma: the larger and rounder the foil, the tighter the sail wraps around it. But there's also more wind resistance just where you don't want it, at the leading edge of the sail. So in the name of performance, some makers, like Harken and Furlex, compromise by offering elliptical foils, which are more aerodynamically efficient. Hood's Sea Flex and CDI's Flexible Furler PVC foils are nearly flat. Some companies, like Profurl, offer both shapes — cruising and racing. Unfortunately, you can't have both, flipping back and forth according to your whim.

"Aluminum foils are the way to go for larger boats, especially those that don't have their masts frequently unstepped, and for those owners who want premium sailing performance."

Cage type: closed vs. open. Cages are the drum enclosures that hide the coiled-up furling line. There's not a lot to choose from between the closed and open styles. In closed types, the line and bearings are somewhat better protected from the weather, but overrides are more difficult to clear. A polished stainless-steel cage, like the one on the Sea Furl 5, is stylish, and cages provide a place for the manufacturer to stick its logo. Profurl, Schaefer, and Harken use open drums; the legs that connect the top and bottom drum parts help retain the control line yet allow access to line overrides in between.

Headstay tension method: original turnbuckle vs. screw. A few furlers, notably Furlex, provide a headstay-tension adjuster. The others use your existing headstay turnbuckle. An advantage of the integral adjuster is the elimination of the bulky torque tube that has to fit over the existing turnbuckle. Fat torque tubes connecting to skinny foils tend to make the sail wrap up unevenly.

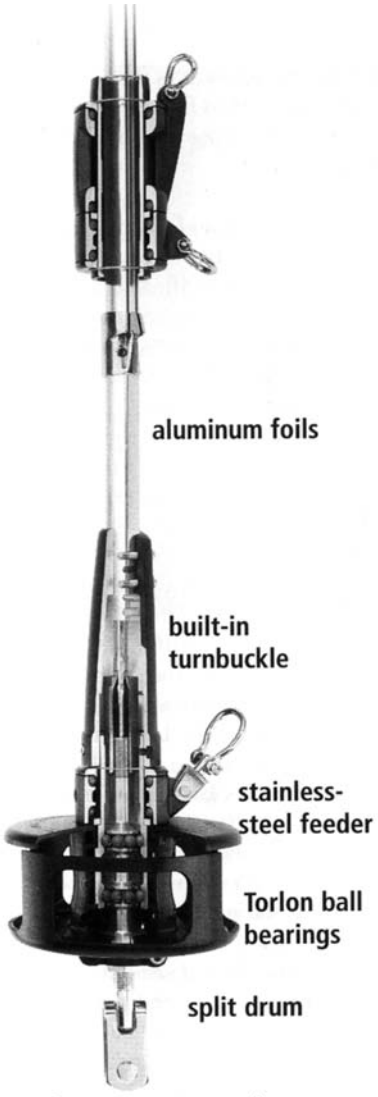
Tack swivel. Years ago Hood patented a tack swivel that allowed the middle of the sail to make one furl turn before the foot. This made for a tighter furl without as much bag in the middle. Some other companies, like Furlex and Harken, paid Hood a royalty for its use. That patent has since expired, but not all companies have adopted its use.

Split drums for racing. If you like to race occasionally (if you race a lot, you don't want roller furling) but still like the convenience of roller furling the rest of the time, you'll want to consider a split drum. This feature makes it quick and easy to remove the furling drum, allowing you to hoist the largest headsail possible, that is with its tack closer to the deck than would be allowed with a drum high off the deck. If you're not a club racer, a removable split drum probably won't be a feature worth paying extra for.

Single- or double-luff grooves. Most foil extrusions have double grooves. In race mode, with the drum removed, they allow inside-out sail changes in which you hoist a second headsail before dropping the first. In cruise mode, they enable

Aluminum Foil Furlers for 30-footers

Make	Furlex	Harken	Hood	Hood	Profurl	Schaefer	Reckmann	Reef Rite
Model	200	Unit 1	Sea Furl 5	SL 707	NC32	1100	RS 2000-10	6/40
Average discount price	$2,150	$1,850	$1,200	$849	$1,500	$1,525	$2,250	$1,734
Max headstay length	50' 6"	52' 8"	40' 0"	46' 0"	40' 0"	43' 3"	50'8"	custom
Max wire diameter	5/16"	9/32"	9/32"	1/4"	5/16"	1/4"	5/16"	1/2"
Max pin size	5/8"	1/2"	1/2"	1/2"	5/8"	7/16"	1/2"	custom
Cage type	Closed	Open	Closed	Open	Open	Open	Closed	Open
Extrusion shape	Aero	Aero	Aero	Round	Round	Round	Aero	Aero
Extrusion fasteners	Plates	Screws	Plates	Screws	Screws	Rivets	Screws	Rivets
Bearings	SS	Torlon	SS/Torlon	Torlon	Steel	Torlon	SS	SS
Adjuster	Yes	No	No	No	No	No	Yes	Yes
Tack Swivel	Yes	Yes	Yes	No	No	No	Yes	No



Cross section of a Harken Unit 1.

you to fly twin downwind sails. A few furlers have just one groove, and while most owners probably will never miss the second groove, it hardly adds to the cost of the system. Two grooves are recommended.

Can you install it yourself?

With a good manual, any reasonably handy owner can install a furling system. The most important requirement is patience. Read the instructions from beginning to end — at least once — before starting the job. Call the company with any questions; most have good customer service staffs.

Most headstays have to be shortened, and probably the worst mistake you can make is cutting it too short. The manual will tell you how to determine the correct length, but more than one overanxious owner has gotten confused and cut in the wrong place. Measure twice (or thrice!), cut once. The same goes for cutting the foil sections to the correct length.

Furlex and Reef Rite offer the most complete kits, which include a new headstay as well as furling line, blocks, and more. This explains why these companies have prices which are somewhat higher than the rest.

Most installation directions ask that you fit a mechanical terminal to the cut end of the wire headstay — Sta-Lok or Norseman. These may or may not be supplied by the manufacturer. Installing a mechanical terminal isn't rocket science, but if you haven't assembled one before, you might feel more confident asking a professional rigger for assistance; after all, the entire rig depends on this fitting.

Installation is nearly always easier with the mast down, laid across several sawhorses or other supports, but it can be done with the stick up. You'll need to rig a temporary headstay, like a halyard to a foredeck fitting, because the permanent headstay has to be unfastened at the stem for shortening and sliding over it the upper swivel, foil extrusions, and torque tube/lower bearing/drum assembly. Be sure your boat won't roll a lot; choose a dock where you won't be subjected to large waves or wakes from passing boats, and choose a calm day. Remember that most systems require you to go up the mast.

Tools required are few and ordinary — hacksaw, screwdrivers, pliers, and so on. If the extrusions fasten by means of rivets, you'll need a rivet gun, of course. Those extrusions that use screws generally must be set in Loctite or other thread-locking compound, often supplied by the manufacturer.

If you don't feel comfortable installing your new furler, a professional rigger can do the job for you. If you bought the furler from a dealer, he can give you a quote. If you bought the furler from a discount catalog, you'll have to find a rigger experienced with furler installations . . . and you may have to pay a bit more because he didn't get a commission on the sale of the furler. To be fair, and for better future service, if I planned to have a rigger do the installation, I'd buy from him, even if it cost me an extra hundred bucks.

Sails

Many sailors insist they can use an existing headsail with the new furler. Sometimes you can, but if the sail is old, chances are you'll be much better off investing in a new sail. And let's face it, one of the worst mistakes made by sailors is keeping sails far too long. Yes, they are expensive, but they are the engine that powers your boat, and good sails make a huge difference in speed, pointing ability and, therefore, safety. If your sailmaker says your old genoa is too stretched out to be satisfactorily cut down, take his advice and bite the bullet for a new sail.

If your sailmaker is willing to cut down an old sail, it still will cost you his labor and some materials. New reinforcements must be sewn in as well as a luff tape that slides up inside the luff grooves in the furler's foil. You also should consider adding UV protection in the form of a sacrificial piece of sailcloth.

An option well worth having is a foam pad sewn into the luff. One brand name is Aeroluff. A padded luff helps fill the belly of the sail so it doesn't bag out as much when partially furled. This is another approach to solving the same problem addressed by the tack swivel.

Using furling gear

A common criticism of sailors is that they have baggy sails and don't know how to trim them. Well, when you get roller furling, the onus is on you even more. At times, you'll likely be sailing with the headsail partially furled and not always the same amount. The more you roll in the headsail, the farther forward your sheet leads need to be in order to maintain proper trim. Therefore, adjustable sheet leads are important.

If your boat doesn't have genoa tracks, consider adding them. The simplest type of adjustable sheet lead is to have cars with pin stops. To move them forward or aft, you must leave the cockpit, move to the sidedeck, lift the pin stop, and slide the car to its new position.

A more sophisticated system is to have the car slide freely on the track, with a shock cord to pull it aft and a control line and set of blocks to manually pull it forward. With this set-up you don't have to leave the cockpit to adjust the sheet leads. Considering that the usual reason for adjusting sheet leads is high winds (which necessitated furling the headsail in the first place), it's a time when you don't really want to leave the cockpit anyway.

It's not quite a maxim, but it may as well be: roller-furling headsails shouldn't be furled more than about one-third. Furling them more than that results in unacceptable sail shape. So a 200-square-foot headsail can be reduced to about 134 square feet and still retain a reasonable shape. Of course, you'll notice this much more going upwind than off the wind where just about any shape works. If, with the jib open to two-thirds of the headsail area, the boat still isn't behaving the way you want, you're probably better off dropping the furling

headsail altogether and proceeding with either a smaller headsail (preferable) or no headsail at all (dubious, because it's hard to balance the boat even with a double- or triple-reefed mainsail).

On smaller boats, you should be able to furl the sail without putting the control line on a winch, assuming the system has minimal friction and the wind isn't blowing a gale. Still, it's helpful to have a winch handy. Control lines are usually of a smaller diameter, say 5/16 inch, which can be hard on the hands. If you don't have a winch available, keep a pair of gloves ready.

Maintenance and care

Modern roller-furling gear is relatively maintenance-free. The most obvious chore is flushing bearings in open races with fresh water. Without a periodic rinse, salt incrustations will cause more friction and more difficult furling.

When at the dock, I like to hose down as much of the system as I can reach, including the furled sail and, if exposed (as at the end of the season because I've already removed the sail), the foils, too. Salt isn't good for much of anything. Read your instruction manual and perform whatever other maintenance is prescribed.

If you take the mast down for winter layup, be extra careful handling the headstay foil — the sections are aluminum and easily kinked. For transport across the yard, tie or tape the foil to the mast every so many feet. Most foil sections come in 6-foot-plus lengths, and they can be replaced, but it will be a pain that's easily avoided with a little care.

Limitations of roller furling

So does roller furling seem like the be-all and end-all? Well, it ain't. It does have its disadvantages.

First, with roller furling you tend to make do with the one headsail, whatever size that may be. Usually, it won't be bigger than about 135 percent of the foretriangle. In light air, you may wish for a 150 percent or larger headsail. In strong winds, you can only furl it to about a 100 percent headsail, which may be too big. With hanked-on sails, you could drop, say, the #2 genoa and hoist in its place a small storm jib. With furling, dropping the sail is a bit more difficult because of the friction of the luff tape in the luff groove — you'll probably have to pull it down with some force. Then hoisting the storm jib will be more difficult if only because you have to feed the luff tape into the luff groove. A prefeeder helps, but it still can be arduous. It helps to have two sets of hands, one to feed the sail and the other to hoist the halyard. Also, you can't gather the sail at the bottom of the stay like you can with hanks; as the luff tape is fed into the luff groove, the sail has to go up, thereby catching the wind and often flapping violently and making the boat accelerate.

An alternative to dropping the regular genoa and hoisting a storm jib is to leave the regular genoa furled and hoist something like the ATN Gale Sail that has a big sort of hem that wraps around the furled headsail and is attached back to itself by means of a hook-and-loop closure.

So how do you choose?

Ah, so many details, so many decisions! Let's see if we can't simplify this a bit.

If I owned a trailersailer, I'd buy a furler with a flexible PVC foil. CDI is the pioneer here but not the only choice. Too bad Harken's elegant unit is no longer available, but the Schaefer Snap Furl is well engineered, too.

The tables on Pages 12 and 13 may help you make comparisons. If you're an occasional racer, you'll want a split drum (all models shown have them) and an aerodynamic elliptical foil. If you don't race, a round foil gives a bit more leverage furling and does a somewhat neater job.

Torlon plastic bearings won't rust but can crush more readily under extreme loads than steel bearings.

Having owned or sailed on boats with all of the major brands of furlers, I can honestly say that as a class they've evolved into highly reliable and very comparable devices. There doesn't seem to be a bad choice among them.

When price shopping, check to see what's included in the standard package. Furlex and Reef Rite include everything. Others may not give you the furling line and lead blocks, prefeeder, and so forth.

Once you've worked your way through the decision tree and actually got one installed on your boat, you'll wonder how you got along without one.

Dan was editor of Practical Sailor *for 11 years. He and his family recently moved to Montana where he continues to write books and articles for marine publications.*

Manufacturers/distributors

Anzam Yacht Refurbishing
(Reef Rite distributor)
4520 Robertson Ave.
Sacramento, CA 95821
916-489-5431
<http://www.reefrite.co.nz>

ATN Inc. (Gale Sale)
1509 SW 1st Ave.
Ft. Lauderdale, FL 33315
800-874-3671
<http://www.atninc.com>

Cruising Design Inc. (CDI)
P.O. Box 1250
Concord, MA 01742
978-922-5936
<http://www.sailcdi.com>

Euro Marine Trading
(Reckmann distributor)
62 Halsey St., Unit M
Newport, RI 02840
800-222-7712
<http://www.reckmann.com>

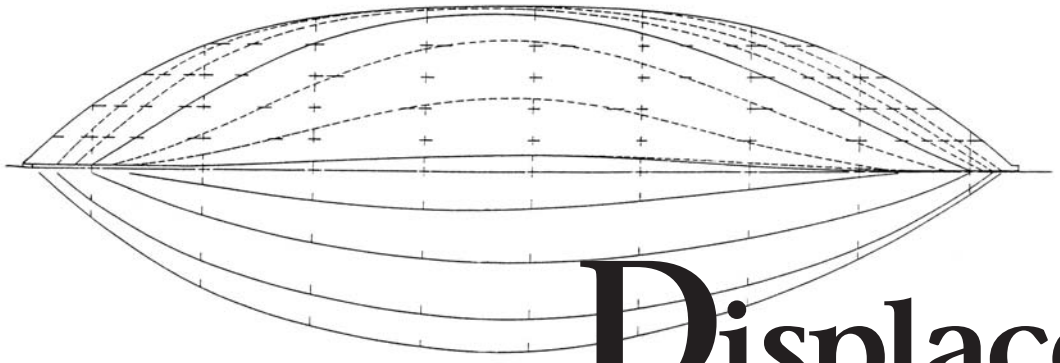
Furlex, Selden Mast, Inc.
4668 Franchise St.
N. Charleston, SC 29418
843-760-6278
<http://www.seldenmast.com>

Harken Yacht Equipment
1251 E. Wisconsin Ave.
Pewaukee, WI 53072
262-691-3320
<http://www.harken.com>

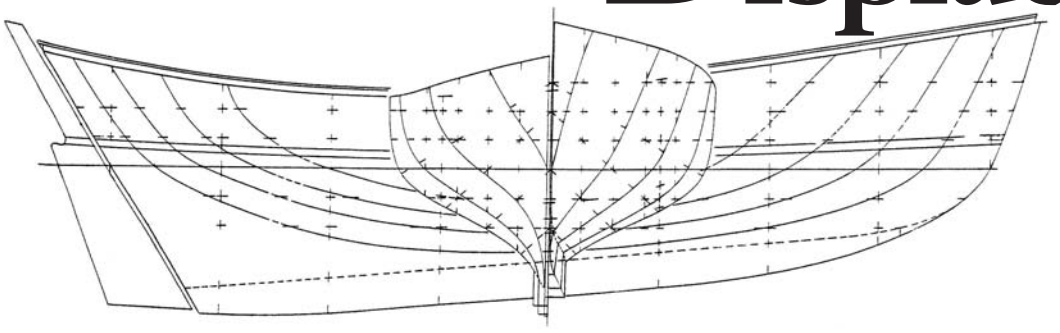
Hood Yacht Systems (Pompanette)
7712 Cheri St.
Tampa, FL 33634
813-885-2182
<http://www.pompanette.com>

Profurl
401 N.E. 8th St.
Ft. Lauderdale, FL 33304
800-272-9511
<http://www.profurlusa.com>

Schaefer Marine
158 Duchaine Blvd.
New Bedford, MA 02745-1293
508-995-9511
<http://www.schaefermarine.com>



Displacement: Heavy



Sunshine: ***With a displacement of 23,900 pounds on a 30 foot 4 inch LWL, this double-ended sloop is at the upper end of the "heavy" category. Her displacement/length ratio of 382 is the highest I can find in my designs. She'd have a comfortable motion but might be a bit wet in heavy seas.***

by Ted Brewer

The displacement/length (D/L) ratio is a non-dimensional figure by which we can compare boats of different lengths. It's obtained by dividing the displacement in tons (1 long ton equals 2,240 pounds) by the cube of 0.01 times the waterline length, or $Dt/.01WL^3$. In general, for sailing yachts, a figure of under 100 is considered super-light, 101 to 200 is light, 201 to 300 is moderate, 301 to 400 is heavy, and over 400 is ultra-heavy.

For example, my 1971 *Black Velvet* design, with 24,800 pounds displacement on a 35.33 foot waterline has a displacement/length ratio of 251, so she would be considered to be of moderate displacement for her waterline length today, although on the light side when she first came out.

Displacement/length ratios have been dropping over the years due, in part, to the elimination of the Cruising Club of America rule for rating cruiser-racing yachts. The CCA rule was in use up until 1970 or so and took the actual displacement of the vessel into account, giving a rating credit for heavy displacement and penalizing light displacement.

In addition, the rule penalized long waterline length so it was common to see yachts with as much as one third of their length in overhangs. For example, *Clarion of Wight*, a cruiser/racer designed by Olin Stephens in the early 1960s, was 43.5 feet in length overall (LOA) and 30.0 feet in length on the waterline (LWL). Her overhangs amounted to 31 percent of her length, yet she had a very successful racing career and was, as well, quite a handsome yacht to my eyes.

High ratios

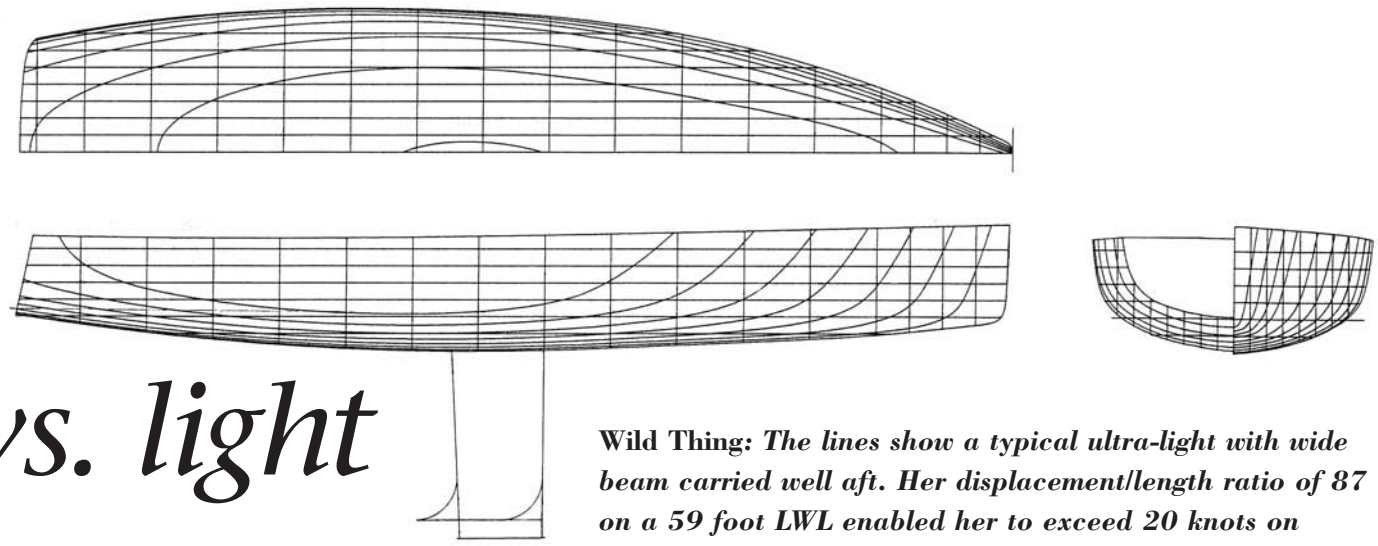
The result of the heavy displacement and short waterline of these yachts was, of course, very high displacement/length ratios. *Clarion* displaced 22,200 pounds and had a D/L ratio of 367. Bill Luders' 39-foot sloop, *Storm*, with 17,500 pounds displacement on 27-foot waterline, had an even higher D/L ratio of 397!

Generally, cruising yachts are successful cruiser/racers so the cruisers, the good old boats of the 1950s and '60s and even the early '70s, had the long ends, short waterlines, and husky displacement of their ocean-racing sisters. Conversely, today the trend is all to shorter ends and longer waterlines both in cruisers and racing yachts, so lower D/L ratios naturally result. An example in point is the mid-1960s Luders design, *Duchess of Devonshire*, 44.5 feet LOA, 30.5 feet LWL, 12.0 foot beam and 24,000 pounds displacement, for a D/L ratio of 378. Compare her with a handsome and moderate new cruising yacht by Mark Ellis, *Alize III*, 46 feet LOA, 35.67 feet LWL, 13.25 foot beam, displaces 25,000 pounds and has a D/L ratio of 246, substantially lower than the 1960s-era *Duchess*.

The differences may not be quite that great actually. A long-ended yacht will pick up more waterline length as she heels, and *Duchess*, with her substantially narrower beam, will undoubtedly heel to a greater degree in any given wind to pick up even more waterline than the stiffer *Alize*. If she gains four feet of waterline length in a good breeze, *Duchess'* D/L ratio drops to 261. Assuming the shorter ended *Alize* picks up about two feet of waterline in the same breeze, her D/L ratio drops to 209. Thus the difference in the D/L of the two boats underway may be less than half what it was in the at-rest condition — but *Alize* still has the edge by far. Of course, *Alize* is a very moderate design by today's standards, and there are many new cruising yachts being built with D/L ratios in the 150 to 160 range, thanks to modern construction materials, extra-generous beam, and other features.

Finer lines

The big difference in the newer yachts is not just the lighter displacement, but the fact that they are carrying that displacement on longer waterlines. This means their lines are finer with less rocker to



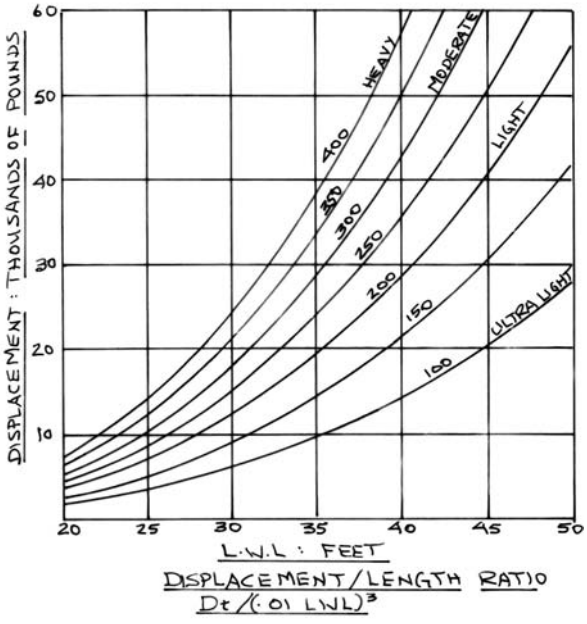
vs. light

Wild Thing: ***The lines show a typical ultra-light with wide beam carried well aft. Her displacement/length ratio of 87 on a 59 foot LWL enabled her to exceed 20 knots on many occasions.***

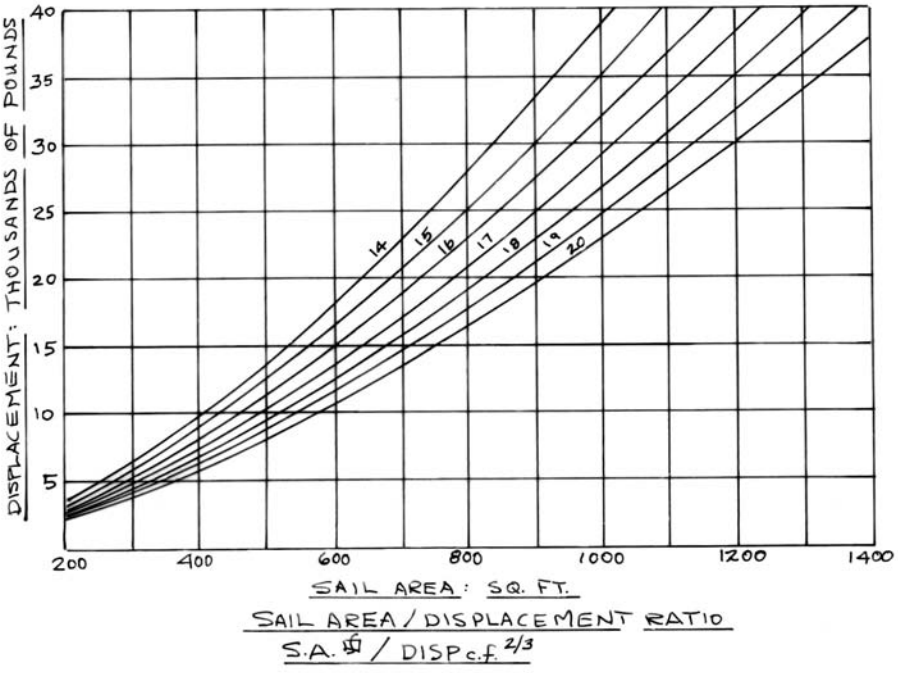
the canoe-hull profile and a much flatter buttock angle aft. This reduces separation of flow while, at the same time, the lighter displacement also reduces wave-making resistance, further enhancing overall performance and increasing potential top speed in a good breeze.

Despite what many believe, the older heavy-displacement boat is not necessarily a poor performer in light air. Her wetted surface may be little, if any, more than that of her longer-waterline, beamier, and lighter-displacement cousin. Thus, if she is given the sail area appropriate to her displacement, she should have no problem keeping up with the rest of the fleet. The problem with many older boats is that they were undercanvassed by today's standards, due to the influence of the CCA rule, which encouraged low-aspect-ratio rigs and permitted 150-percent genoas to be carried without penalty. Very few cruising yachts carry genoas that large today and many older boats

A designer's view of the compromises involved



Curves of constant displacement/ length, shown above, allow us to compare boats of different lengths. At right, the ratio of sail area to displacement is an indicator of boat speed.



could substantially improve performance if they were given a taller rig and set a smaller 130- to 135-percent genoa. They'd be a lot easier for a short-handed cruising crew to handle, as well.

On the other hand, when conditions really get squirrelly no yacht can be driven to high speeds with safety, so the light-displacement cruiser may well have to slow to a speed that the heavier boat is handling with stately aplomb. Heavy displacement does assure motion comfort, as the heavier craft will scend more slowly in any given sea condition than a lighter yacht of equal size. *Duchess'* comfort ratio works out to 38.76 while the larger *Alize III* comes in at 31.64, a fairly significant difference. However, *Alize* is very definitely a moderate-displacement design and a fine sea boat compared to many of today's very-light-displacement crop. Indeed, I just ran the figures on two new cruisers, a 56-footer with a D/L ratio of 123.3 and a comfort ratio of 23.8 and a 68-footer with a D/L ratio of 88 and a comfort ratio of 23.1. These are, undoubtedly, very fast cruisers in moderate air but I, for one, would not want to be aboard either of those yachts in a real storm at sea.

"Generally, cruising yachts are successful cruiser/racers so the cruisers, the good old boats of the 1950s and '60s and even the early '70s, had the long ends, short waterlines, and husky displacement of their ocean-racing sisters."

More form stability

Adding to the heavier boat's advantage in severe weather is the fact that the modern, beamy, light-displacement hull has much greater form stability than the older, narrower hulls of the 1950s to 1970s. The boat with great form stability wants to be perpendicular to the surface of the water at all times. In heavy beam seas she will tend to react quickly to the angle of the wave and have a snap roll that can be very upchucking. The heavier, narrower yacht will roll more slowly and to a lesser degree as she will not fight as hard to remain perpendicular to the wave's surface. This can make a great difference in crew comfort.

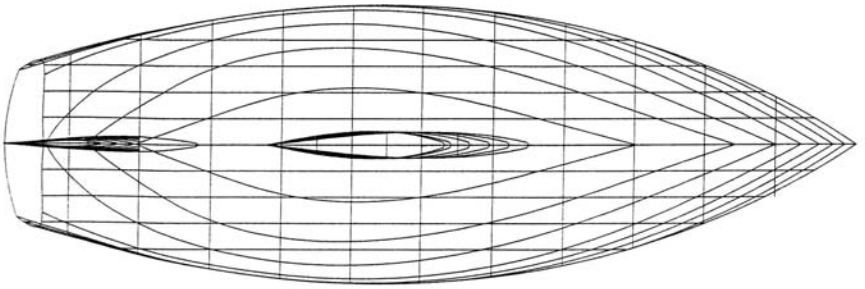
In truly extreme conditions, beam and displacement can be critical factors. This was recognized by a USYRU committee on capsizing when they came up with the Capsize Screening Formula (CSF). This is simply the maximum beam divided by the cube root of the displacement in cubic feet ($B/\sqrt[3]{\text{Displ cf}}$). The higher the number, the greater the chance of capsize and remaining inverted when capsized. The lower the number, the less chance of being capsized or remaining inverted for long periods of time. The divisor between coastal and offshore cruisers was considered to be 2.0. Of course, this formula is rather simplistic since it ignores hull shape, the amount of ballast, and the location (depth) of the ballast, all vital considerations in a complete stability assessment. However, the CSF number is an indicator.

As examples, the CSF number of the *Duchess* is a very conservative 1.67 and *Alize* works out to a safe 1.82. However, the two lightweights I mentioned come in at 2.05 and 1.96 respectively, definitely not yachts I'd want to be aboard in any of the rougher waters of this globe. I've heard the argument that these new high-speed cruisers, given the advantage of weather-fax and modern communications, can stay out of a storm's path or even outrun it. *(Sure* they can!)

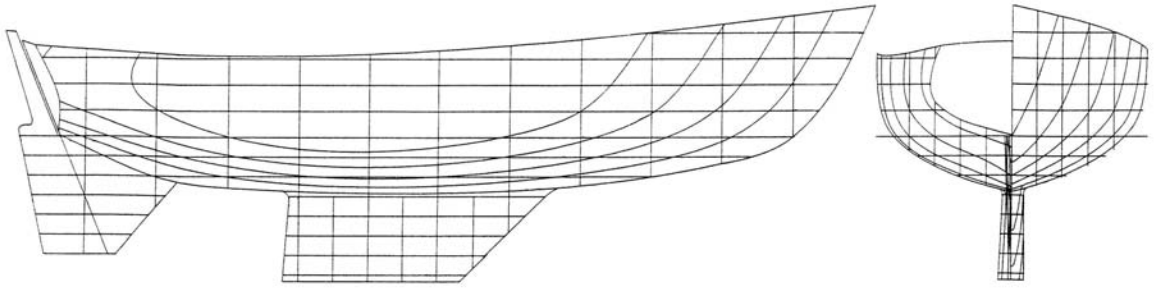
Extremely heavy

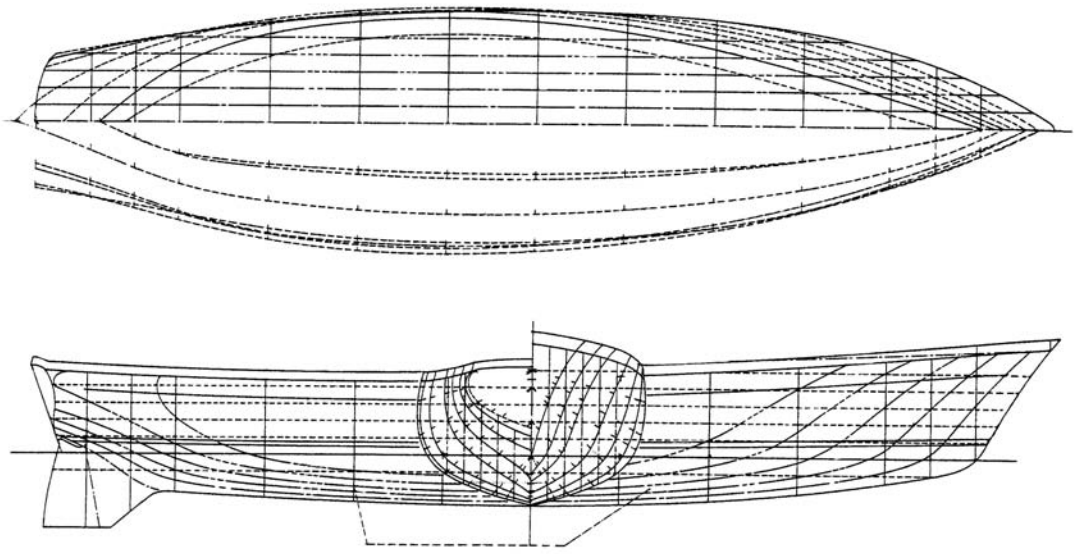
Of course, things can be overdone, and there is a limit to the benefits of heavy displacement as well. I know of one extremely heavy ketch that displaced some 90,000 pounds on about a 46-foot waterline, a D/L ratio of 413. She had short ends and so gained little reserve buoyancy from them. She certainly must have had an easy motion, but her owner declared she would scend so slowly that she was swept like a half-tide rock in any heavy sea. He had me design a replacement for her, slightly larger and with a D/L ratio of 240, thanks to light aluminum construction. This vessel was very successful.

Heavy displacement does allow a



Prospector: ***A wooden 33-foot cutter with 13,900 pounds displacement on a 28 foot 3 inch LWL, she has a displacement/length ratio of 275. This is typical of many moderate displacement draft and produces a fine bluewater cruising yacht.***





Arden: ***Not all light displacement yachts are super beamy. With only a 14-foot-beam, this cored fiberglass 60-footer has a displacement/length ratio of 147 on a 52 foot 6 inch LWL. A heavier steel sistership still kept her displacement/length ratio under 200 and was reported to cruise easily at 10 knots in medium winds.***

yacht to carry substantial supplies of stores, water, fuel, spares, and equipment for extended cruises, and there may still be ample displacement left for all the amenities that make life aboard more pleasant, such as gen sets, air conditioners, heating systems, washer/dryers, pianos, and you name it. The heavy displacement yacht will simply be less affected by the weight of stores and gear required for a long voyage than will a vessel of similar size and lighter displacement.

Four people setting out on a long voyage could easily add two tons of weight to their yacht. Consider: their own weights (600 pounds); clothing and personal gear (300 pounds); food for a month, plus a week's spare food (500 pounds); 25 gallons extra water (200 pounds); beer, wine, and other medicinal supplies (150 pounds); portable generator (50 pounds); extra propane; outboard gas, lamp oil, and so on (100 pounds); spare parts, oil, lubricants, engine belts, tools, and so on (200 pounds); life raft and emergency supplies (200 pounds); and now we're up to 2,300 pounds plus. Add on the bedding, heavier ground tackle, fishing gear, books, charts, spare sails, spare rigging wire, spare lines, bosun's stores, cleaning supplies, tools, portable radio, spare battery, folding bikes, barbecue, extra fenders, and all the other essentials and non-essentials that cruising couples simply have to take along, and you can see why it can readily add up to two tons, or even more.

*"I've heard the argument that these new high-speed cruisers, given the advantage of weatherfax and modern communications, can stay out of a storm's path or even outrun it. (**Sure** they can!)"*

Interesting comparison

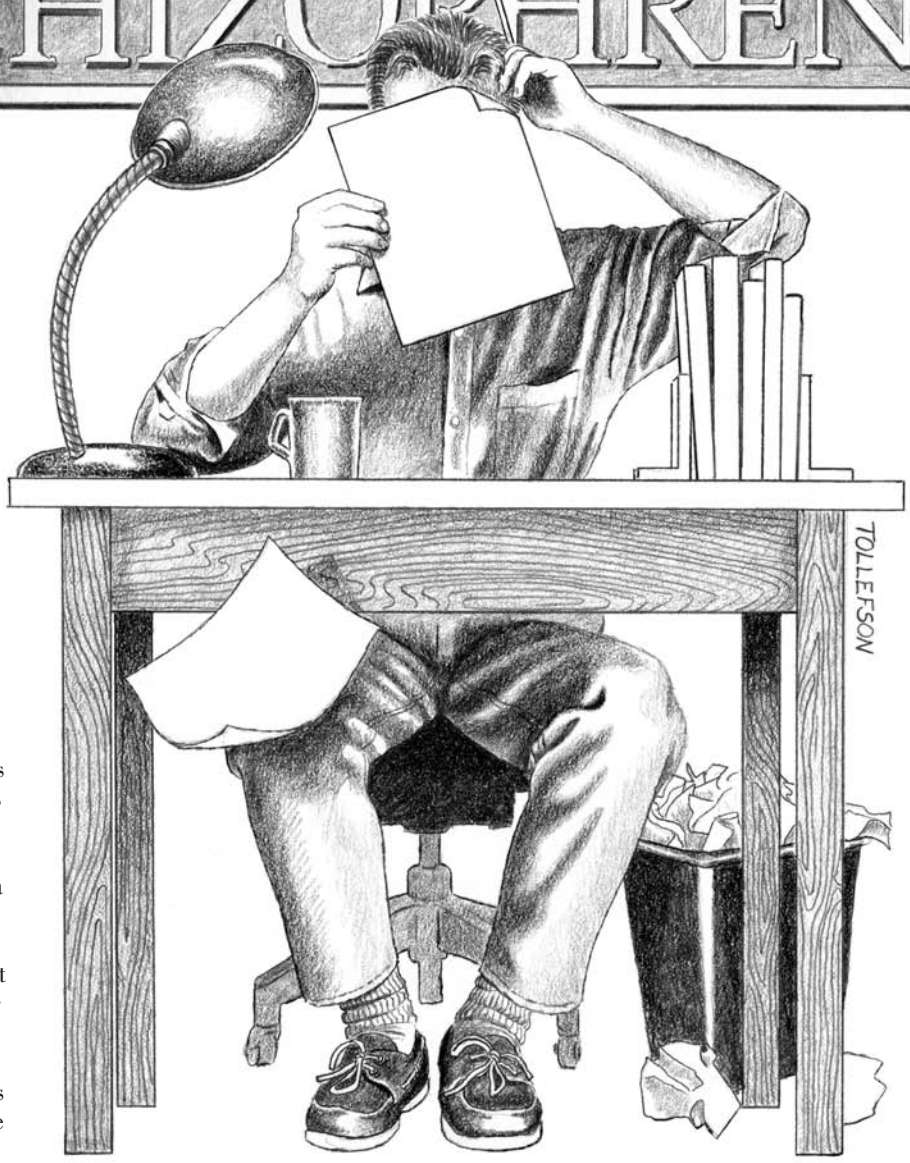
Consider two 35-foot-waterline yachts setting out for a long voyage, each with a crew of four. One, a light displacement cruiser, with a D/L ratio of 150 and the other a moderate displacement cruiser with a D/L ratio of 270. If we add a modest 3,000 pounds of cruising gear to each, then the D/L ratios jump to 181 and 301 respectively, a 20.7 percent increase for the lighter boat and only a 11.5 percent increase for the heavier. If both yachts started out with a sail area/displacement (SA/D) ratio of 17.0, the SA/D ratio of the boats, ready to cruise away, will drop to 14.98 for the lighter yacht and 15.79 for the heavier. Obviously the lighter displacement yacht will be more affected by the additional weight and will suffer the greater loss in performance.

As you may have discerned, I am not fond of very-light-displacement yachts, despite their enhanced performance, nor am I fond of ultra-heavy yachts; even my husky 70-foot *Tree of Life* schooner only had a D/L ratio of 297. There is a happy medium and, for the average cruising yacht, I feel that yachts designed with D/L ratios of between 240 and 300 can provide their owners and crews with comfortable accommodations, reasonable storage capacity, adequate tankage, all around good performance, motion comfort, and seakeeping ability in heavy weather. Skippers wanting the added performance of lighter displacement should consider how much comfort — and safety — they're willing to sacrifice. And if they insist on heavier displacement to obtain even greater comfort and amenities, they'll have to decide how much performance they are willing to give up.

Yacht design is full of compromises and there's no free lunch!

Ted is one of North America's best-known yacht designers, having worked on America's Cup boats and on boats that won the Olympics, the Gold Cup, and dozens of other celebrated ocean races.

THE SAILOR'S SCHIZOPHRENIA



by Tom Lochhaas

A couple of years ago I crossed that last threshold of sailing consciousness and announced I was preparing for a transatlantic voyage. With limited funds, a full-time job and family, and a good old boat that may last have seen blue water two decades ago, I figured it would take me two or three years for the outfitting. The New England sailing season is short, and there are 200 miles between home and our mooring in Downeast Maine.

Two or three years seemed not too bad, however. There was lots of gear to buy, and half the fun would be researching what I needed and which brands to buy. I started making lists immediately. I also began rereading the classic sailing narratives of circumnavigators and ocean-crossers, taking notes on what gear was most essential for them. I paged through old copies of *Sail, Cruising World, Good Old Boat*, and *Practical Sailor*. The lists grew longer. Soon I had to make a master list just to keep track of all the other lists.

After a few months the lists were edging out of control. I was still discovering questions, more and more things to attend to, and I hadn't even begun researching the right answers. The spring when I was scheduled to start implementing the first year's boat improvements rapidly approached, and I hadn't even finalized my lists, much less developed a priority plan.

One day, staring at the computer screen and the piles of printouts and clipped articles drowning my desk, I realized I'd become Sisyphus. You may remember Sisyphus — that guy the Greek gods condemned to push a rock up the mountain forever. When he reached the top, he watched the boulder roll back down the mountain, and then he followed it down to begin pushing it up again. For all eternity. I couldn't remember exactly what he had done to make the gods angry enough to punish him this way. Probably he'd dared to announce he was outfitting his boat to sail across the Aegean.

Still, it was fun for a while. Stacks of sailing magazines were a lot lighter to push around than boulders. Sisyphus also probably didn't have all those pretty color photos of boats to look at.

Worse than the rock of lists, however, was an insidious sailor's schizophrenia that split my brain. While the articles and ads in *Sail* exhorted the virtues of 12 brands of self-steering windvanes costing thousands of dollars, and *Practical Sailor* ran endless tests comparing them, Joshua Slocum and Harry Pidgeon told me about their cruises alone around the world using their own steering systems of sheets tied to the tiller. While I studied the Web sites and brochures of products to

protect me from being run over by a tanker while I slept — radar and radar reflectors and radar detectors and sonar detectors and alarm clocks that woke you to check the horizon every 10 minutes — I was also reading how John Guzzwell and Vito Dumas solo circumnavigated and slept without a worry in the world as their ships simply sailed on. And just when I thought I'd at least completed that particular list of gear, I realized I needed electricity to power my radar and radar detector and sonar alarms and so started a new list of equipment to research: wind generators, water-towed generators, solar panels, auxiliary generators.

My right brain reread Robert Manry crossing the Atlantic alone in 13½-foot *Tinkerbelle* with no more power than flashlight batteries, and Howard Blackburn doing the same alone almost before batteries were invented. Meanwhile, my left brain calculated the amp-hours required to run everything from navigation software on a marinized notebook computer to the latest expensive LED tricolor running lights.

One night my right brain shoved 20 pages of lists through a paper shredder.

In the morning my left brain found those lists on my hard drive and emailed them to my entire address book so that copies would be available no matter what my right brain did.

"Seamanship!" shouted my right brain. "Fail-safe gear and redundant systems!" shouted back my left.

On the next weekend cruise my right brain searched the boat's lockers and made lists of gear to take off the boat. The next day my left brain installed padlocks everywhere and hid the keys.

My right brain recalled Slocum's half-dinghy strapped on the foredeck and told my wife that she could have a week in Paris spending the savings I'd earmarked for a life raft. My left brain got up in the middle of the night and ordered so much survival gear — EPIRB, backup GPS, strobe lights, personal watermakers, parachute flares and smoke canisters, signal mirrors, night-vision binoculars, survival suit, spear gun, emergency dental kit, and so on — that even the 6-man life raft it also ordered couldn't have held it all.

My right brain was a rock happily rolling down a mountain. My left brain laboriously pushed it back up.

My right brain canceled the Internet orders and went sailing. On foggy days it went to bookstores and found still more narratives of the great days of sail before electricity was invented and when survival gear consisted of a fishhook and line.

My left brain threatened not to even get on the !%*$*%# boat again until I'd followed the latest advice of *Practical Sailor* and installed redundant system backups for the backup systems of all primary systems.

The sailing season was slipping by without major boat improvements. I started worrying that if I ever did get started on a transatlantic, my right brain might simply push my left brain overboard, and I wasn't sure where I, myself, would end up if that happened.

Preparing for an Atlantic crossing may be inherently more arduous than the crossing itself

Approaching age 50, I now became concerned that I had only two or three decades left to resolve these issues before I was too old to sail across the Atlantic.

One night, taking time off from the West Marine and BoatU.S. catalogs, I was reading a computer magazine and got to thinking about virtual reality software. Breakthroughs were predicted imminently, using direct neurological connections, that promised simulated experiences indistinguishable from reality. A computer flight simulator, in other words, so real you would black out from too many Gs or too little oxygen. Long before I entered a nursing home I'd be able to put on a sensorineural helmet and sail around Cape Horn without leaving my bed. Indeed, if someone slipped the helmet on me when I wasn't looking, I'd not even know that in fact I wasn't rounding the Horn or crossing the Atlantic.

That thought haunted me for some time. Could I still take my own boat on my simulated cruise, or would I be forced onto some carbon-fiber hull with unstayed mast and Kevlar sails? If money for virtual gear were no object, how many GPS units would I take aboard? Might I even have a weatherfax — something that had not made any of my lists so far? Would there be any reason not to have all the very best and most expensive gear on my virtual yacht?

Was that what they meant by arm-chair sailors? Were all those high-tech gear reviews in magazines written for people who actually sailed only in their imagination?

My left brain bristled, but even it couldn't escape obvious conclusions. Crossing the Atlantic encased in a self-contained rescue pod tracked constantly by satellite to ensure rescue and a warm bed within 17 minutes of the onset of any emergency wouldn't be much of an adventure. It's enough to give you pause.

When I'm 90 and off my boat at last, all I can hope is that some old sailor-programmer of virtual reality software sends me to sea with no engine, no high-tech gear, in fact no electronics at all . . . and no left brain.

But meanwhile, I'm still planning my transatlantic crossing. Having gone through all this, I now feel, has provided some benefit. My lists are shorter and more realistic, and I cross off more items than I add. As the boulder tumbles down the mountain, it gets worn and is smaller and easier each time to push back up. That's sort of like having an old sailboat, I think. The modern gods may have thought they were punishing us when they chained us to our old boats, but some of us wouldn't have it any other way. After all, there is no such thing as virtual freedom when sailing.

Tom sails Allegro, *a 1971 Albin Vega, in Downeast Maine, and really is outfitting for an eventual trans-atlantic passage.*

USCG photo by PA3 Robin Resseler

Stand by

Most of the time, when your rearview mirror is full of blue lights, you can bet the officer observed some sort of traffic violation. In fact, the police cannot stop you without probable cause. Not so for the U.S. Coast Guard. This is a difference with a distinction.

The Coast Guard's authority emanates from a variety of federal statutes that afford members of this service much broader enforcement powers than their shoreside counterparts. Federal law permits members of the Coast Guard to board vessels subject to the jurisdiction of the United States at any time for the purpose of making inquiries, examinations, inspections, searches, seizures, and arrests. For recreational boaters, this can mean an afternoon interrupted for no reason at all.

Most of us have suffered through the discomfort of a traffic stop, but a Coast Guard boarding is a different ballgame. Knowing what to expect may help you streamline the boarding process, calm your guests, and get on with your afternoon.

A typical boarding is initiated by the approach of a Coast-Guard vessel and their signaling of intent to board your boat. During the day, you can identity the Coast Guard by their ensign and red racing stripe on the bow. If the boarding is at night, remember that the Coast Guard may patrol without running lights, so you should ask them to illuminate these characteristics, although they probably will have done so already.

Once the Coast Guard representatives have identified themselves and announced their intent to board, the Coast-Guard vessel will maneuver closer. Getting the boarding team on your boat is the Coast Guard's problem, so follow their cues and directions to the extent you feel they do not compromise the safety of your vessel. Remember, while federal law requires that a vessel underway heave to, or maneuver in a manner to accommodate a boarding team, you are still the master of your vessel and bear the attendant responsibilities. Depending on the circumstances, the Coast Guard will usually have the vessel operator maintain a steady course and slow speed while they jockey into position.

"If the Coast-Guard boarding team determines that an 'unsafe condition' exists, they may exercise their authority and terminate your vessel's voyage."

Request compensation

No matter what the conditions, transferring personnel between vessels at sea can be risky. If the Coast Guard damages your boat while landing the boarding team (or for that matter at any time during the boarding) you may request compensation. Some individuals like to ask the boarding officer for compensation forms even where no apparent damage is noted. Then, on returning to the dock, a full inspection can be performed.

The boarding team will generally consist of one officer and one or more Coast Guard personnel. If you have guests aboard, it's a good idea to let them know that the members of the Coast Guard team will be armed and that you'll need everyone to cooperate as you direct. It's not a bad idea to let your guests know that, unless they are questioned directly, as captain you will do the speaking.

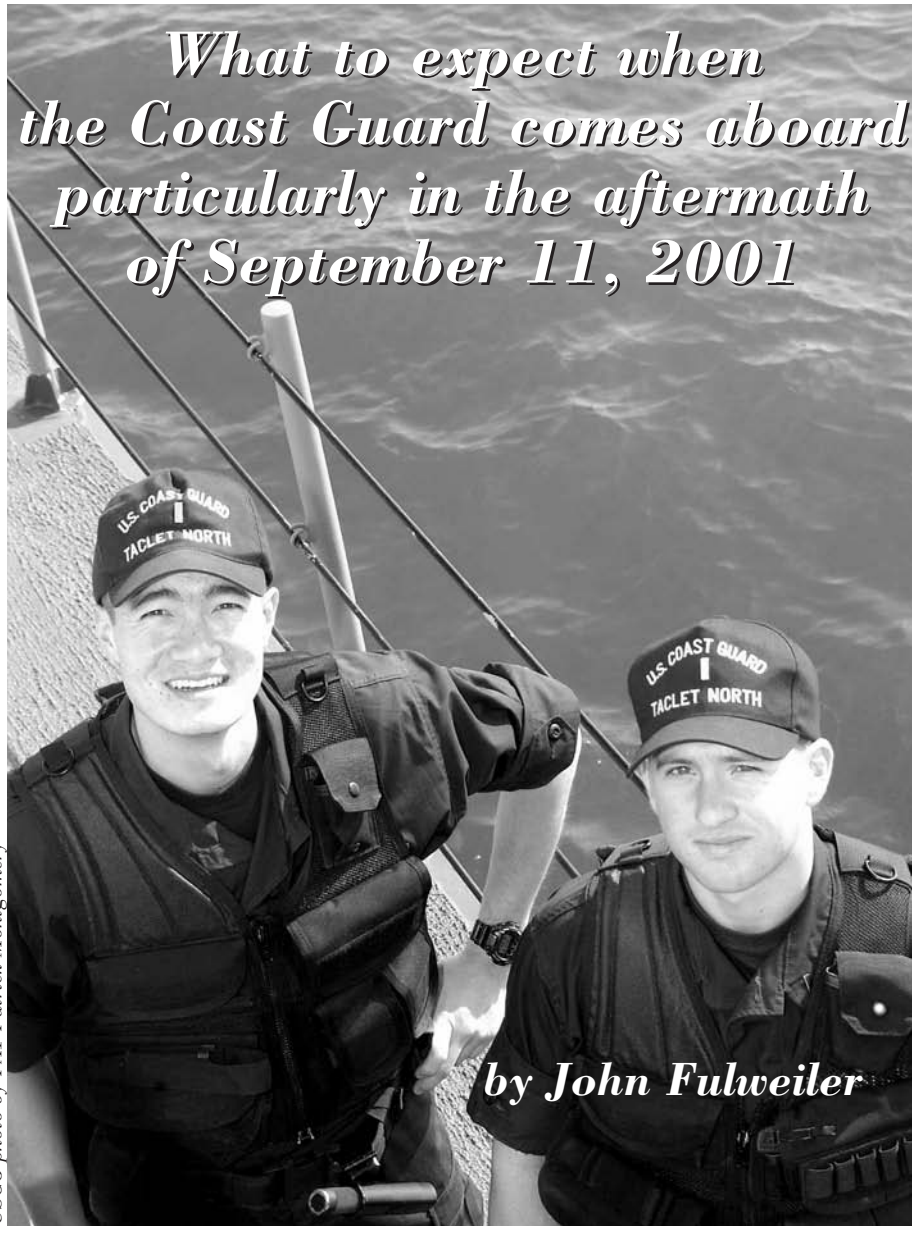
Once aboard, the Coast-Guard boarding team begins by conducting a quick sweep of the vessel to identify any obvious hazards. After that, the visit starts to feel a lot like your typical traffic stop. One difference is that your boat may still be making way, so it's a good idea to have someone else take the helm.

The Coast-Guard personnel will ask to see your yacht's registration or documentation and will, in most cases, conduct a cursory examination of your vessel. On the recreational side, they will look to ensure compliance with personal floatation device (PFD) requirements, check for fuel leaks, and otherwise give your yacht a once-over. Unless something catches their eye, or you're returning from foreign waters, you can pretty much expect the Coast Guard to leave your closed spaces and personal items untouched.

to be boarded

What to expect when the Coast Guard comes aboard particularly in the aftermath of September 11, 2001

by John Fulweiler



USCG photo by PA1 Patrick Montgomery

The unwritten goal of the boarding team is to complete a boarding report (the 4100 in Coast-Guard parlance), and the more assistance you can give them the sooner they'll be on their way. This report resembles a patrolman's automobile accident sheet and is a checklist of federally mandated requirements that the Coast Guard wants to make sure you have satisfied. It generally covers safety fundamentals. It's not a bad idea to obtain a copy of the form from the Coast-Guard Web site in advance, so you know what to expect. These safety precautions should be at the forefront of every prudent skipper's mind anyway.

Terminated voyage

If the Coast-Guard boarding team determines that an "unsafe condition" exists, they may exercise their authority and terminate your vessel's voyage. What this means is that if your boating soirée got underway with insufficient PFDs or fire extinguishers, if you are displaying improper navigation lights, or if your vessel does not meet fuel and engine ventilation requirements, you may find that the Coast-Guard team issues you a citation and, worse,

On facing page, Annapolis Coast Guard personnel conduct a boarding. At right, members of the Tactical Law Enforcement Team in Yorktown, Va. The Coast Guard has done hundreds of boardings since the events of September 11, 2001.

terminates the voyage and follows you back to port.

If you should be confronted during the inspection with a violation, there's no reason to panic. The boarding officer usually has the choice of issuing a warning rather than a notice of violation. As a result, it pays to keep your cool and reason with the officer. Often the boarding team will give you a break if, for example, your flares have expired or your oil-pollution and garbage placards are available but not displayed as required. On the other hand, if you have fewer PFDs than required, don't expect much leeway.

The Coast Guard is able to assess monetary penalties for the violations it finds, although the process for doing so is complicated. Once a notice of violation is issued, a copy of your boarding report is forwarded to the commander of the district in which the violation arose. Upon review, the district commander has three choices: (1) take no action; (2) issue a letter of warning; or (3) forward the violation to an independent hearing officer. If it is sent to the hearing officer, the evidence will be reviewed and where it is found to sustain the violation, a letter of notification will be sent to you advising you of your rights and setting forth a proposed fine.

Appropriate evidence

You can simply pay the proposed penalty or submit a rebuttal statement with any accompanying evidence you feel appropriate. When you submit a written statement, you have the choice of contesting the entire violation or seeking a reduced penalty. If you feel the written statement doesn't do your side of the story justice, you can request a hearing. Whatever path you choose, read your letter of notification carefully as it will have specific time limits by which you must make such requests.

A word about the worst-case scenario seems appropriate. On any occasion where government interests and individual rights clash, the legal waters can be murky. The savvy skipper will remember to protect his own concerns while accommodating the demands of the Coast Guard. Be smart and cooperate as much as possible. Let the coasties know if you recently had a courtesy inspection by the U.S. Coast Guard Auxiliary or if you have additional safety equipment aboard. Assist them in completing the boarding report. And promptly identify and produce any weapons you may have, when they ask.

At the same time, volunteering too much information can open the proverbial cabin door and risk exposing you to unintended violations. If the boarding has turned serious, and you face penalties for operating while intoxicated or where drugs are involved, you may want to consider invoking your right to remain silent and seek the aid of your attorney. All too often, statements and admissions made at the time of an incident come back to haunt you. *(We encourage our readers neither to operate their boats while intoxicated nor to allow illegal drugs aboard* ***–Ed****.)*

When you return to the dock, take a moment to review the boarding report. If there are any violations or warnings identified, fix them immediately. It's a good idea to save proof of your prompt repair by maintaining the receipt or work order, and noting it in the vessel's log. In this way, should you get boarded again, you'll be able to demonstrate that the problem was promptly corrected. If you are facing a violation, such proof of immediate repair might help you petition for a lesser penalty.

Coast-Guard boardings are about as much fun as beating your way up a weather shore. Still, they have their uses, and all skippers worth their salt will use the threat of a boarding to make sure their vessels meet the Coast Guard's minimum requirements.

John was raised on the shores of Rhode Island and got his first sailboat, a 15-foot Lawley, at the age of 12. Launch driving and sail charters in the summers were followed by an upgrade in his USCG license and a five-year stint as a captain for a New England-based towing and salvage company. Leaving the wheelhouse behind, he now practices admiralty and maritime law in New York.

This article is meant to convey information, it is not considered to be a legal opinion.

Security is increased following the September 11 terrorist attack

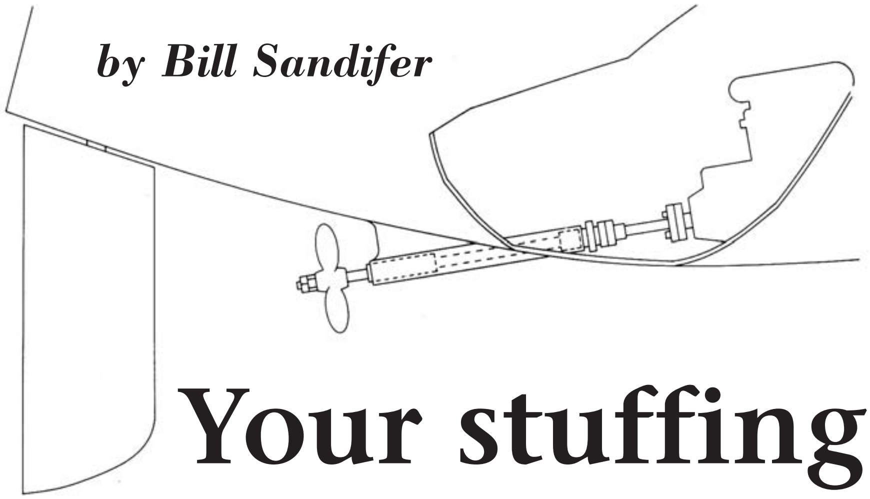
Much of what recreational sailors need to know about passing a boat inspection is available at <http://www.uscgboating.org>. Once you are there, click on the regulations and publications tab, and then select the federal requirements link. On this page you will find an extensive explanation of what the U.S. federal government requires of you and your boat. It will take you several hours to carefully read through this material, and you may want a printout to take to your boat. If you are not connected to the Internet, this information is available in print. Call the U.S. Coast Guard Info Line at 800-368-5647 and ask for Federal Requirements & Safety Tips for Recreational Boaters and Coast Guard Boarding Policy, (which will include the information on Form 4100).

by Jerry Powlas

We contacted the USCG to see what additional comments they might have in view of the additional activities they have become involved in since the attacks on the World Trade Center and the Pentagon. The following is a condensation from a press release quoting Captain Scott Evans, Chief of the U.S. Coast Guard Boating Safety Office in Washington, D.C.

He encourages recreational boaters to enjoy the 2002 boating season and points out that there will be tighter security measures during the upcoming season. Recreational boaters should avoid all secure areas and commercial port operation areas, especially those that involve military, cruise line, petroleum, and other fuels. Do not approach military, cruise line, or commercial ships as there is a 100-yard security zone around these vessels. Recreational boaters are also encouraged to be observant and alert and to report any suspicious activities to local authorities, the Coast Guard, port and/or marina security.

While a pre-season vessel safety check will not eliminate the possibility of a Coast Guard boarding, it may make it less likely and smoother if your vessel is boarded. Vessel safety checks can be performed by the U.S. Coast Guard Auxiliary or the U.S. Power Squadron, as well as by regular Coast-Guard personnel. Boaters are encouraged to get these safety checks from the auxiliary or power squadron volunteers to allow Coast-Guard personnel to devote their time and resources to more serious security requirements.



Jim Sollers

by Bill Sandifer

This cutaway drawing provides "ideal access" to this stuffing box. In the real world, you will be standing on your head with a flashlight in your mouth.

Your stuffing box:

It lets the shaft turn but keeps the ocean out

Stand proud and tall (if you can) once you've repacked or adjusted your boat's stuffing box

A stuffing box by any other name — shaft seal, packing gland, rotating seal, packing box — is of interest and concern to all owners of inboard-powered boats. Sailboats in particular, because of their narrow keels and engine placement, are a nightmare when it's time to adjust the stuffing box or replace the packing. In some boats, unless you are a contortionist, about all you can do is *look* at the stuffing box. You can't quite touch it, at least not with tools that fit. There are special stuffing-box wrenches. I even bought one in a moment of weakness. But in the space that is available, they work no better than my 50-something-year-old, square-jawed, small monkey wrench and medium channel-lock pliers.

The long and short of it is that traditional stuffing boxes require some access and attention, and designers and builders will normally have made this possible, if not easy. In fact, if stuffing boxes were not so important, they could easily be ignored. As a matter of fact, they generally *are* ignored in spite of their importance, unless they leak too much.

Stuffing boxes come in two kinds: rigid and flexible. The rigid types are hard bolted to a structural member while flexible ones are attached to the boat by a heavy-duty rubber hose and hose clamps. Most sailboats have a flexible stuffing box. This discussion will focus mainly on the flexible type of installation, but the same principles apply to either method of mounting.

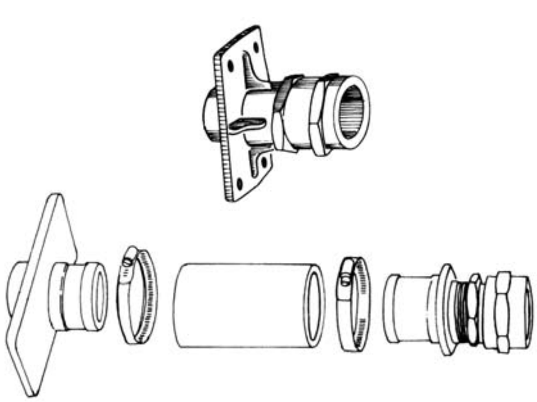
When I was building small commercial tugs, I used a rigid-mounted stuffing box. I have seen old wooden sailboats with a long deadwood (cavity through which the shaft runs) with an externally mounted stuffing box that faces aft and outboard instead of facing forward and inboard. These have to be adjusted during a yard period or by a diver. The reason for using external stuffing boxes on wooden boats is that there is no way to apply antifouling paint to the long narrow hole in the deadwood. The worms would eat the shaft log right up. In fiberglass construction, this problem is eliminated.

Different requirements

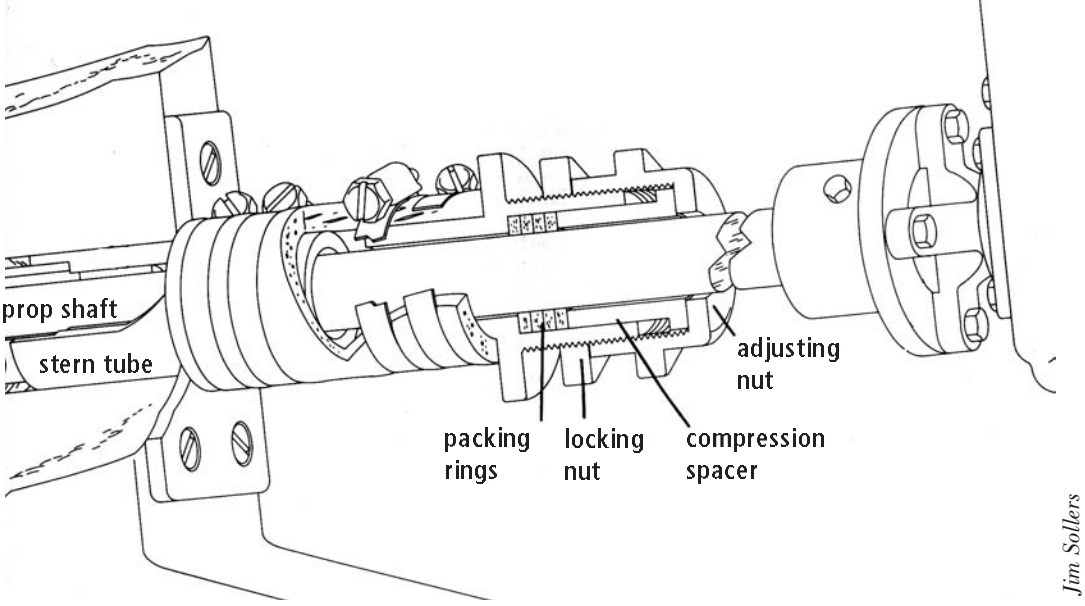
The problem with any inboard marine drive is that we want one end of the prop shaft to be in the water while the other end is in the air of the machinery space. We want to prevent the water from entering the hull, but we want the shaft to rotate freely and not heat up at the seal. We would like to prevent the water from entering the hull when the shaft is stopped but allow a little water to cool the shaft when it is turning. Too little cooling water when the shaft is turning, and the shaft will be scored and will heat up or bind; too much water, and we will have to pump the bilge too often. Better too much water than too little, though. In the case of a conventional stuffing box with a packing, this means we may have to tolerate a little leak when the shaft is turning, but we would like to have none when the shaft is stopped. For many stuffing boxes this is the ideal adjustment.

Many types of machinery use this same device. Externally driven water pumps all use stuffing boxes or shaft seals of some sort. On ships and oil rigs, ballast pumps have stuffing boxes sealing 3-inch shafts.

On fiberglass sailboats, flexible stuffing boxes are mounted to the shaft log with a special hose. The cylindrical cast-bronze housing contains the packing rings and compression spacer. An adjusting nut forces the spacer against the packing rings, which causes them to compress and seal against the shaft.



A rigid stuffing box, top, and a flexible stuffing box, bottom.



Jim Sollers

A locking nut prevents the adjusting nut from rotating after adjustment is made.

Snug enough

In a perfect world, the shaft nut would be snug enough to prevent water from entering the boat when the shaft is stopped and loose enough to allow some cooling water to circulate around the shaft when it is turning. This water will make a slow drip into the bilge. This perfect world is what we are trying to achieve when we pack and adjust our stuffing boxes. But it is a relatively difficult thing to achieve. Too tight, and the shaft overheats, gets scored, and permanently drips. Too loose, and the stuffing box drips all the time so we must frequently run the bilge pump to dispose of the water. If you have a traditional stuffing box with flax packing, a cool running seal with a slight drip is about the best you can hope for. There are rare stuffing boxes with flax packing that are so fitted and adjusted that they neither drip, nor overheat. It is possible, but don't hold out for this. In most cases a little drip while running is as good as it gets.

Our choices for packing are greatly expanded from when our fathers owned powered sailboats. At the low-cost end of the packing choices is flax packing lubricated with tallow and/or paraffin. This packing is a satisfactory choice proven by years of use. There are improved flax packings that use PTFE (Polytetrafluoroethylene) as the lubricant. PTFE is sometimes known as Teflon, a DuPont brand name. Relatively new are packings made of PTFE and lubricated by PTFE. These and the flax packings, with either natural or PTFE lubricants, must have additional water lubrication and cooling; they typically have an occasional drip when the shaft is turning.

"The long and short of it is that traditional stuffing boxes require some access and attention, and designers and builders will normally have made this possible, if not easy."

Truly dripless

Up the scale in cost and performance are packing systems that use alternating flax and PTFE packings, both lubricated with a PTFE paste. These packing systems can achieve true dripless performance because they do not need any water flowing through them to function properly. The PTFE paste takes the place of the water. While these systems are suitable for sailboats, they are not necessarily a good choice for high-speed powerboats. If the shaft diameter times the shaft RPM exceeds 1,000 feet per minute, the paste may not stay in place. Typical sailboat applications are around half this figure.

Graphite packing is also available, but its use is controversial. The controversy has to do with graphite (a form of carbon) being high on the galvanic scale. It is thought that this may cause corrosion of the shaft. Nigel Calder mentions this material and the controversy in his book, *Boat Owner's Mechanical and Electrical Manual (from which the illustrations for this article were extracted. Our thanks to Nigel, artist Jim Sollers, and McGraw Hill/International Marine for permission to do so.* ***-Ed.****)* but says he has used graphite packing for seven years without problems.

I have tried Syntef, which is a brand name for the system that uses the paste and alternating rings of flax and PTFE. I had mixed results. Maybe I did not understand how to pack the claylike substance into the stuffing box. Syntef is also sold as a lubricant to add to traditional flax packing to allow you to compress the packing tighter with no adverse binding of the shaft. This allows you to seal out the water more completely.

Dry bilges

My boat has a conventional stuffing box packed with Teflon-impregnated flax packing. By careful adjustment, and changing out the packing every three years, I have been able to maintain a dry bilge (at least it was not filled by a stuffing-box leak).

One way to check if your packing is too loose is to see if it's dripping when the shaft is stopped. If it drips in this condition, it's too loose. Tighten it until the drip just stops. No more, or it will be too tight. Run the engine in gear for a little while. Then stop the engine and feel the stuffing box. If it is just warm to the touch, you probably have it adjusted correctly. My Teflon-lubricated stuffing box never drips, but the shaft never gets more then a little warm. This is perhaps better than should be expected from this kind of packing.

Beware the shaft

Incidentally, never touch the shaft with the engine running and the shaft turning. It is all too easy for the shaft or coupling to grab a piece of your clothing and wrap you into the shaft. Any internal combustion engine is stronger than you are, and it will not stop just because something is wrapped on its shaft. I once witnessed the result of a 1½-inch nylon hawser being wrapped into the prop of a tugboat. The hawser was secured on deck and became rigid. The engine continued to run until it tore itself off its beds, breaking all four mounting feet. It almost destroyed the tug before it was shut off. All this happened in a second, a very expensive

second for the tug's owner.

Over the last decade, two types of seals have been made available to the boating industry that completely eliminate the need for packing.

Face seals use two hard, flat, smooth disks. One is stationary, and one turns with the shaft. The sealing surfaces are normally two different materials to prevent galling. Face seals are used to seal automotive air conditioners.

Lip seals force a very narrow circular "lip" against the shaft with a spring that surrounds the lip. Lip seals are used to seal pump shafts and automotive wheel bearings.

In the marine industry, these sealing systems are called "packless," which distinguishes them from the traditional stuffing box that uses a packing. Several manufacturers make packless seals. PYI markets a Packless Sealing System using a face seal, and AB Marine markets a sealing system called Orca, which uses lip seals.

"In a perfect world, the shaft nut would be snug enough to prevent water from entering the boat when the shaft is stopped and loose enough to allow some cooling water to circulate around the shaft when it is turning."

Weigh advantages

It is an expensive job to convert from the traditional stuffing box to these newer devices, and one must weigh the advantages carefully. To install a new system, the boat must be hauled out, the shaft pulled, the old system removed, and the new installed. This is a very popular option on new construction, but I'm not sure of its usefulness on older boats compared to the expense of the purchase (about $200 for a 1-inch shaft) and installation costs.

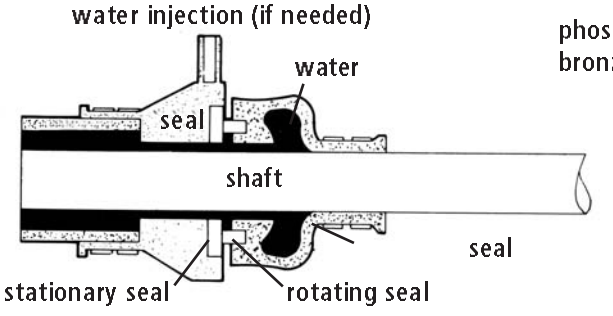
Some years ago I installed a new diesel in an older Pearson Commander that had never had an inboard engine. The owner decided to install a packless sealing system. It was a new installation, and he had already spent the money for the haulout so the only added cost was the packless device itself. I read the instructions and carefully installed the system. To my amazement, when the boat was launched the seal leaked like a river. I realized that the stationary seal was cocked at an angle to the rotating seal and was, therefore, letting the sea in. I snapped the stationary seal into correct alignment with its rotating counterpart, and the leak stopped. The manufacturer said the spring within the rubber bellows was too weak and allowed the misalignment. Newer models of this seal have a stronger spring. Even with its weaker spring, the boat has had this system for more than 12 years without a problem.

Constant pressure

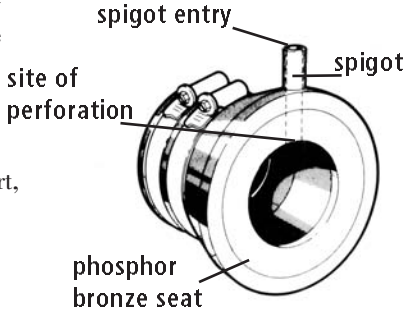
One of the newer systems uses a nitrile bellows and water pressure to produce a constant pressure on the stationary flange. Today, the learning curve has been overcome, and the products are very good, but do you really need them? I'm not such a traditionalist that I ignore new better ways to do something, but a little effort with some other packing materials may create your "perfect world" at little cost and minimal effort.

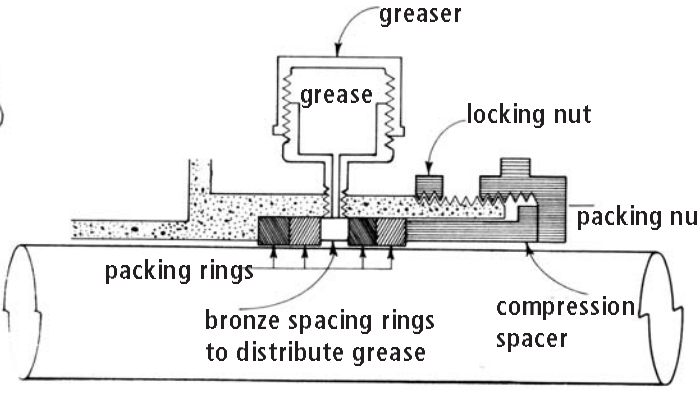
Let's say you have a constantly dripping stuffing box and want to fix it. Where do you start? The first step is to determine the shaft size. Measure the shaft with a caliper and then back off the stuffing box lock nut and unscrew the stuffing box nut. Measure the gap between the face of the shaft and the inside of the stuffing box. For a 1-inch shaft this will probably be around ¼ or maybe 3⁄16 inch. Try fitting a small piece of narrow wood, like a cut-down popsicle stick, in the space. Keep cutting the wood down until you have a slip fit with no wobble. Once you have determined the correct size of the shaft and the packing, you can buy your packing. Packing is sold in most marine catalogs and repair facilities.

The stuffing box can be repacked while afloat . . . but with caution. You cannot stop for a rest in the middle of the operation. Be sure you have all the tools you will need or a trusty helper to get them for you. A few old towels are always good to have on hand. Along with wrenches to back off the stuffing box lock nut and stuffing box nut, you will need a sharp knife, an ice pick, and a corkscrew. They sell a packing remover that looks like a corkscrew with a flexible handle to allow it to work parallel to the shaft. You'll have to decide if you really need one. I usually have enough room between the stuffing box and engine coupling to use an old corkscrew parallel to the shaft.



Packless shaft seal.





Stuffing box with grease cup.

All illustrations courtesy of International Marine/ McGraw Hill – Boatowners' Mechanical and Electrical Manual, 2nd edition, by Nigel Calder.

Make your own

You may have bought your packing in pre-cut rings or in a long rolled strip. If you don't have pre-cut rings, you will have to make them. You must do this before you remove the old packing if you are doing this job with the boat in the water. To make rings, wrap a tight helix of three to five turns on the shaft or on another shaft of the same diameter. Then make a diagonal cut across the rings with a sharp blade. This should produce rings that are sized to fit your shaft. Make five if you are unsure how many rings are in your stuffing box. Before you remove the old packing, make sure the new rings fit the shaft properly.

When you are sure of your rings, use the corkscrew to reach into the stuffing box cavity and remove all of the old packing. Get it all. Poke around with the ice pick. If you feel something soft, you still have packing in there. Remove it. At this point there will be some water running in over the shaft. This will not be a gusher, but a steady and controllable stream. Slow the influx with towels.

Fit the first packing ring around the shaft and slide it into the packing cavity, noting where the two ends butt together. Fit the next packing ring with the butt joint offset from the first butt joint. Space the joints evenly at either 120 or 70 degrees, depending upon how many rings your stuffing box is designed to use. Continue in a similar fashion until all sections are around the shaft and inside the packing cavity. Push them in hard so you can slide the compression spacer down onto them and start the packing nut on its internal threads. Once the nut is started, turn it in by hand as far as you can. For the last turns, hold the stuffing box with your hand and use a wrench to snug up on the packing. Clean up the area and get ready to start the engine. (Perhaps I should remind you to remove the towels from the bilge. That's where mine usually end up.)

Check for leaks

Start the engine and engage the forward gear. Observe the stuffing box. Depending on how tightly you packed it, it may leak a little, not at all, or a lot. If it leaks a lot, stop the engine and take up a quarter turn. If it leaks only a bit, take an eighth of a turn. If it does not leak, back off a quarter turn and run the engine again. By trial and error you will come to the correct stuffing-box adjustment. Once you have adjusted it where you want it, tighten the locking nut and keep your eye on it until you're sure all is well. This probably took more than an hour, but think of all the money you saved and the knowledge you gained. The packing will wear in over time, and it will need to be tightened up a little more. But that's easy now that you know how.

There are several variations on the standard traditional stuffing box. If the shaft log is especially long and there is insufficient water supply from the sea to cool the shaft, water will have to be provided from the engine cooling water. No matter that it is hot, it will provide a water lubricant anyway. Special stuffing boxes are built with an injection pipe to allow insertion of water from the engine. Some stuffing boxes have a grease fitting and grease distribution ring built in as part of their casting. The original boatbuilder usually knew what type of stuffing box was required for the boat and provided the correct hardware.

Notched nuts

In rare instances, the old stuffing box will be so corroded that it will need to be replaced. If you want to stay with the traditional style but have a hard time gaining access to adjust the packing nut, consider the stuffing box from Spartan Marine. It uses a notched packing nut and notched lock nut so it may be tightened or loosened with a hammer and flat-bladed screwdriver. Other than Spartan's, all the other traditional stuffing boxes are pretty much the same.

Before you get all cleaned up and out of the bilge, there is one more job. The stuffing box assembly is secured to the shaft log by a heavy-duty rubber hose. This hose is mounted to the stern tube by stainless-steel hose clamps, and here is the potential problem. On most boats you can only see about 270 degrees of these clamps. The most important part — the part facing down into the bilge — is almost impossible to inspect. Ask your assistant (you ***do*** have one, don't you?) for a dental mirror or any inspection mirror on a handle. Slide the mirror under the stuffing box hose and shine a flashlight on the mirror. It will light up the entire underside of the stuffing box hose and let you evaluate the hose clamps. If they are rusty, they need to be replaced. This job may be harder than adjusting the stuffing box, so be prepared. Most builders chose perforated hose clamps for their price. But they do not last as well as the boats on which they were installed.

If you have to replace the hose clamps, get the non-perforated 316 stainless-steel clamps or stainless-steel exhaust hose clamps with a tee bolt found — at great expense — at your favorite marine supplier. Check for the correct size. Do not be cheap about this. Your boat can sink much faster from a broken hose clamp than from any small leak in the stuffing box seal.

While you are in that awkward position, inspect the hose. It should be five-ply exhaust-type hose. This will last a long time, but sometimes it will split. If it looks questionable, try to feel how bad it really is. Changing it out is a yard job, and a very labor-intensive one at that. If it needs to be done, then do it, but examine it carefully first. It could just be the surface layer that is split. Maybe you can get the remainder of the sailing season out of it safely. If you think it needs to be replaced right away, make a yard appointment and get it done. Some general catalogs, as well as Buck Algonquin and Spartan can supply new shaft-log hose.

Not all jobs on a sailboat are fun. This one certainly falls in that category. But you get a great feeling of accomplishment from completing the job, along with an added sense of safety knowing that one potential leak has been removed.

Go ahead: you can try to stand up straight now.

Bill is a Good Old Boat *contributing editor.*

Suppliers mentioned:

PYI Inc.
12532 Beverly Park Rd.
Edmonds, WA 98037-1532
800-523-7558
<http://www.pyiinc.com>

AB Marine/Autoprop USA Inc.
P.O. Box 6194
Middletown, RI 02842
800-801-8922
<http://www.ab-marine.com>

Spartan Marine, Division of Robinhood Marine
HC33, Box 1460
Georgetown, ME 04548
800-325-3287
<http://www.spartanmarine.com>

Buck Algonquin Marine Hardware
370 N. Main St.
Smyrna, DE 1997
302-659-6900

by Don Launer

Tackle *your* blocks

Who's this gnome? We don't mean to frighten you, but look what happened to Don Launer before he learned to give his wooden blocks regular maintenance. Actually, he says the large one, which weighs more than 90 pounds, was used to hoist cargo aboard a World War II Liberty Ship.

Blocks, or to use the landlubber's term, pulleys, are as indispensable to the operation of a sailboat as an engine is to a powerboat. They can provide a mechanical advantage or a change in direction of the pull on the fall. Blocks have been used since sailors first hoisted sail, but in the last century the materials used and the internal parts used to reduce friction have seen a major breakthrough into high-tech. Although blocks made of wood were the first to be used and persisted for two millennia, they are seldom seen on today's recreational sailboats.

Galvanized blocks

In our great-grandparents' day most recreational sailboats used blocks and deck hardware of galvanized iron or steel. They were a practical, strong, reasonably long-lasting, and inexpensive way to set up the running rigging on a sailboat. Today, however, galvanized fittings are seen only on traditional workboats or as dock hardware. Galvanized blocks use a zinc coating to protect the underlying iron or steel from corrosion. Various processes are used to apply the coating to the iron. Of all these methods, hot-dip galvanizing, where the iron is immersed in molten zinc, is the most effective, providing a zinc coating of about .003 inch. Less preferable is electroplating, which results in a coating about half as thick. Usually the sheaves (pronounced "shivs") of old blocks were also galvanized and rotated directly on the shaft. Maintenance, in those long-ago times, consisted of an occasional drop of oil.

Make them last longer and perform better

Bronze blocks

A huge leap forward came when bronze blocks were introduced. Bronze blocks were used on the highest quality yachts from the Civil War to the middle of the 20th century. As late as the 1950s and 1960s, 12-Meter boats competing for the America's Cup used bronze blocks and hardware. But even in the mid 1900s, bronze blocks usually lacked bearings for their bronze sheaves. Legendary Nathanael Herreshoff made cast-bronze blocks in six sizes and two styles. For decades his were considered to be top-of-the-line. Bronze was universally considered to be the best material you could use, and bronze blocks were used on the finest yachts built for the richest men in the world during this period.

Although bronze was largely replaced by aluminum and stainless steel after the mid-1900s, bronze is now making a strong comeback on production and custom yachts. This is partly due to the introduction of modern materials as bearings. Bronze has the ability to last almost indefinitely in the marine environment and has several advantages over other materials such as stainless steel, which is subject to crevice corrosion and rust, or aluminum, which has galvanic surface-corrosion problems.

Although the shell of bronze blocks lasts indefinitely, the major problem with early bronze blocks was the plain bronze bearings that wore out and were not easily replaced. This problem has now been largely eliminated, and modern bronze-shell blocks make use of roller bearings that reduce the friction to almost zero — and there are some bronze blocks with easily replaceable axles, bearings, and sheaves. Roller

bearings for top-of-the-line bronze blocks are often made from such modern plastics as Delrin or the better and more expensive plastic, Torlon. Bearings made from these modern materials have proven to be highly reliable over the last 30 years and can handle loads equaling the strength of the blocks themselves.

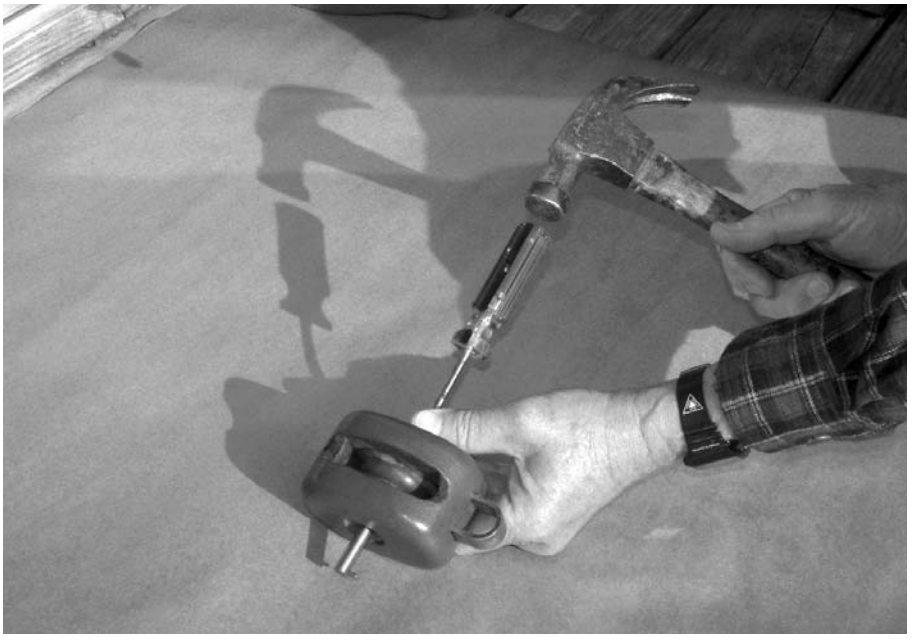
The durability of bronze in the marine environment is indisputable. Bronze artifacts that have lain on the bottom of the sea for more than 2,000 years show little deterioration. The major problem for the sailor who would like to purchase bronze hardware today is one of quality. A lot of the marine products now being sold as bronze are really brass with a high zinc and lead content, often cast overseas from scrap metal. This brass alloy is attractive to the manufacturer. It melts at a low temperature and machines like butter. This speeds up the manufacturing process, doesn't wear down the tools, and improves the profit margin. It's not a bad product for a pair of candlesticks, but it's a terrible one for important fittings in the marine environment.

These brass fittings have a low tensile strength, which decreases even more as dezincification begins and the zinc in the alloy turns into acetic zinc oxide. The resultant white powder attacks wood, causing it to rot. (If you've every noticed wood-rot around your "bronze" fittings, chances are these fittings aren't really bronze.)

"Blocks have been used since sailors first hoisted sail, but in the last century the materials used and the internal parts used to reduce friction have seen a major breakthrough into high-tech."

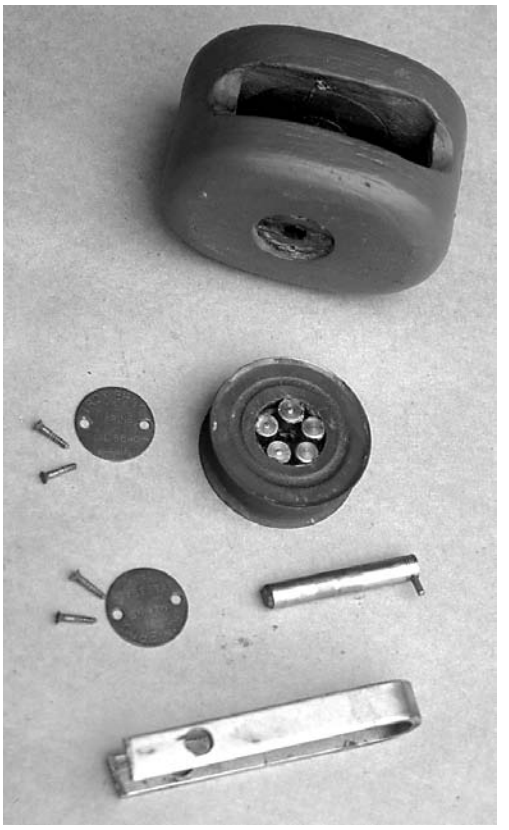
But if consumers are not metallurgists, how are they to tell? Although you would hope to rely on the big-name manufacturers who distribute "bronze" products, unfortunately many are more profit-oriented than customer-oriented, and their "bronze" is really brass. Consumers could ask whether zinc is used in the manufacturers' alloy, but chances are they couldn't get a straight answer — even if the distributor knew.

This is too bad, since real bronze blocks are maintenance-free (with the occasional addition of a drop of oil or Teflon spray). You have to sand and varnish wood-shell blocks, and stainless-steel blocks tend to bleed rust and are subject to corrosion, but a true bronze block can last the life of the owner — or even the owner's children and grandchildren.



One bronze manufacturer is Roger Winiarski of Bristol Bronze *(Good Old Boat,* May 2000). "There is no zinc in my alloys. I use silicon bronze for the majority of my castings, and springs are phosphor bronze," Roger says. Bristol Bronze has blocks with bronze sheaves and free-turning bronze axles. The sheaves and axles on these blocks can be replaced by removing the separately cast cheek pieces — this might have to be done 20 to 40 years after the block is put in service. Through an agreement with Harken, Bristol Bronze can now supply blocks with Harken sheaves that have Torlon roller bearings. Sheaves with Torlon bearings remain free-turning even under heavy loads and are superior to Delrin bearings, which can be chewed up by abrasives, change shape under load, and get brittle when exposed to ultraviolet rays. Bristol Bronze has

After the axle end plates are removed, the axle can be pushed out of the block, at top. At left, with the end plates, axle, and sheave removed, the support strap can be pulled out of the block, leaving the empty wood shell.



A disassembled Bristol Bronze block, above, and the parts of a wooden cheek block, at right.

introduced a bronze alloy that has a greater tensile strength than conventional 304 stainless steel, for those who need it in high-load applications.

Routine maintenance on bronze blocks consists of simply rinsing them out occasionally to flush away abrasives and adding an occasional drop of oil such as 3-in-1. Teflon spray may also be used and has the advantage that there is no oil to stain sails or wood. And Teflon doesn't attract dust. Aerosol spray cans of Teflon are available with small plastic tubes that can direct the spray directly into the bearings of the block.

As nearly perfect as bronze blocks are, there is one caveat: they shouldn't be used in direct contact with aluminum, due to their relationships on the galvanic table.

Stainless-steel blocks

For decades stainless-steel blocks have been the blocks of choice for most sailors and are nearly the exclusive block material in most recreational boating stores and catalogs. Most of these blocks are made by stamping out the pattern from stainless-steel sheet metal. Stainless steel has many advantages. It is strong, easily available, and good for direct attachment to aluminum. However, the name "stainless" may be a misnomer. Stainless steel is made from iron, and iron rusts. It is also subject to crevice corrosion; wherever there is a hairline crevice or crack or when the stainless steel is deprived of oxygen, rust will form (the rust we find on our topsides or sails is an example). Crevice corrosion occurs when stainless steel is deprived of the one thing that makes it stainless — oxygen. Stainless steel is also subject to failure when welded. This failure is called weld-decay, carbide-precipitation, or weld-migration, and the insidious condition usually progresses with little indication of a problem, until there is a sudden failure of that part.

Why do some of those stainless-steel fittings we bought 25 years ago still look bright and shiny while the ones we bought last year are showing rust stains? A couple of decades ago, stainless steel was treated with a procedure called passivation. In this process the stainless steel was immersed in an acid bath and the iron on the surface was eliminated, leaving bright and shiny nickel and chrome. In recent years, however, EPA rules on the disposal of these acid baths have made the process too expensive — except for parts being made for NASA or the medical industry.

"Bronze was universally considered to be the best material you could use, and bronze blocks were used on the finest yachts built for the richest men in the world during this period."

Most stainless-steel blocks use metal for the high-load components and plastic for the block cheeks. These plastic cheeks serve only to keep the line running smoothly on the sheave. Although some small, low-load stainless-steel blocks have sheaves that rotate directly on the axle, most mid-range and big-boat blocks now use roller bearings made of modern, high-tech materials such as Delrin or Torlon. The one small problem with these miracle plastics is that if heavy loads are left on the blocks for extended periods of time the bearings can temporarily deform slightly. Normally the bearings will return to their proper shape after being rotated, but there may be an initial resistance to rolling. Although big-boat-block bearings are generally resistant to this deformation, as a rule of thumb it's not advisable to leave strains on any hardware when the boat is not being used.

Most manufacturers of stainless-steel blocks who use Delrin or Torlon roller bearings recommend that no oil products be used to lubricate the bearings, since this can attract dirt and cause abrasion. The suggested lubrication is periodically flushing the bearings with water or detergent and water. Then a dry lubricant, such as a silicone or Teflon spray, or a proprietary product, such as Harken's "McLube," may be used.

Often, as stainless-steel blocks age and are exposed to the sun, their black plastic cheeks begin to turn a gray color. This doesn't affect their strength, and the discoloration may be removed with a fine abrasive. If an abrasive is used on these cheeks for cosmetic purposes, be sure to thoroughly flush out and re-lubricate the bearings after working on the block.

Wooden blocks

Many traditionally-rigged older sailboats and even some newer boats, use wooden blocks (or to be more accurate, wooden-cheek blocks). Although these blocks may appear to be old and out of date, they have several advantages over many of their modern counterparts. Not only are they beautiful and strong, but wooden blocks are designed to be easily disassembled in a matter of minutes for cleaning, lubricating, or part-changing. This can be an advantage over some of the more modern blocks, which can't be taken apart at all. A properly maintained wooden block can provide many decades of service. From the standpoint of preventive maintenance and ease of operation, these blocks should be serviced at least every few years. After wooden blocks have seen several years of use, bring them home at the end of the season. Then you can "play boat" during the winter months in the warmth of the workshop, garage, or at the kitchen table.

"After wooden blocks have seen several years of use, bring them home at the end of the season. Then you can 'play boat' during the winter months in the warmth of the workshop, garage, or at the kitchen table."

The first step in disassembling a wooden block is removing the two metal side plates that cover the ends of the axle. These side plates are usually made of bronze and are frequently embossed with the name of the manufacturer. Normally each plate is held in place with two screws. Sometimes on inexpensive or older blocks, nails are used. If the cover plate is fastened with nails, discard them at the first overhaul and replace them with screws. This will make your next maintenance job much easier. Once the screws or nails have been removed, most axle covers can be pried off, exposing the ends of the axle. Sometimes the end plates will be recessed into the wood cheek of the block. The easiest way to remove these is to pry them loose with an ice pick inserted into one of the end-plate screw holes. Infrequently, on some wooden blocks you may find axle covers that don't want to come off. This probably means that the covers are threaded onto the end of the axle shaft and will have to be unscrewed to be removed. Usually these can be unscrewed using a nail or ice pick in one of the screw holes, but for stubborn ones a "key," similar to a deck-plate key, might have to be fabricated (two nails driven through a small piece of wood usually does the job).

With the side plates removed, you can now push out the axle. The axle is supported by metal straps that run down close to the sheave on the inside the wooden cheeks. These metal straps take all of the load on the block. The wood cheeks simply keep the line from running off the sheave. In olden days, these support straps were made from iron, steel, or bronze, but in most of today's wooden blocks they are of stainless steel. The axle shaft is not supposed to rotate inside these support straps, since rotation will cause wear on both the axle and the support straps. To ensure that the axle doesn't rotate, there will sometimes be a key-pin inserted in one end of the axle shaft.

Using a hammer and a screwdriver, tap the axle out. Most axles can be removed from either side, but axles with a key-pin on one end, obviously, can only be driven out from the opposite side. With the axle removed, the sheave is free to be pushed out of the block. Sheaves can be made from various materials: wood, steel, bronze, Delrin and phenolic laminates such as Micarta. Although bronze is probably the longest-lasting and most maintenance-free, Micarta and Delrin are close seconds and offer the advantage of less weight aloft. If the sheave is bronze it will usually have stainless-steel or bronze roller bearings. Micarta sheaves generally rotate on an oil-impregnated "oilite" bushing, and Delrin sheaves frequently rotate directly on the axle or on bronze, Delrin, or Torlon bearings.

Most heavy-duty, top-of-the-line wooden blocks, have roller bearings. Usually roller bearings are locked captive into a race inside the sheave — but not always. When disassembling any block for the first time it's a good idea to do this inside a dishpan — and not on deck. We've all learned that when we drop something while on deck it has the habit of taking that one bounce, then, as if in slow motion, it neatly hops over the side.

Before re-lubricating the parts, clean them of old lubricant by soaking them in gasoline for an hour or two or overnight. This will usually eliminate the old lubricant. If any of the old lubricant remains, try scrubbing them with an old toothbrush.

Once they're clean, it's time to re-lubricate the bearings. Most block manufacturers today recommend lubricating blocks with a dry lubricant, such as generic products like a dry Teflon spray. There are also specialty dry lubricants specifically designed for this purpose. If you insist on a petroleum lubricant, manufacturers suggest that just a single drop of 3-in-1 oil is an alternative.

With the end plates, axle, and sheave removed from the wooden shell, you can now slide out the strap that carries the block's load, leaving only the wood shell of the block. This is the perfect time to sand, varnish, or oil the wood, without the worry of sawdust getting into the workings of the block. When you're completely finished, the block can be reassembled, good as new.

Older wooden blocks can often be upgraded by replacing the old sheave with a modern one using Torlon roller bearings. Many block manufacturers sell these sheaves separately in a variety of diameters, widths, and axle sizes.

Regardless of the type of block you use, with just a little periodic TLC you can keep your running rigging rolling smoothly and save the expense of re-rigging. It also pays off by making it easier to hoist sail and handle sheets.

Don built his traditionally rigged schooner from a bare fiberglass hull. Its running-rigging includes 21 teak blocks with bronze sheaves, all original, all more than 22 years old, and all working perfectly.

South shoestring

by Zoltan Gyurko

Zoltan's choice: Ray's Grocery Store or the great wide sea

It was my lifelong dream to buy a sailboat and take a voyage through the South Pacific. Countless times I stood on the edge of the ocean, vowing that someday I would see its scattered islands and exotic peoples, exposing myself to ideas and challenges far beyond my experience. But like many sailors, I lacked the funds for such a trip.

On lunch breaks at Ray's Grocery Store, I often sat alone, calculator in hand, punching numbers and hoping I would come up with a feasible financial plan. But after figuring in the purchase of a seaworthy 35-foot boat, a plethora of Makita power tools to maintain it, a 24-mile range Raytheon radar, a new hard-bottomed Avon, and full-coverage health insurance, I always came to an amount that was too large to handle.

As the months went by — slowly turning into years — stocking the dairy section grew unbearable. I began altering my expectations, sometimes even dropping them completely. First to go was the new hard-bottomed Avon; next I convinced myself a 30-footer would do; finally, I gave up on health insurance. Sure enough, my number punching was getting closer to realistic. A few months later, when my sister telephoned to tell me there was a full-keeled 26-foot Pearson Commander for sale in Santa Barbara for $3,000, I took the big dive and gave my two-week notice.

Seven weeks later, on August 9, 1994, I was underway on my Commander, *The Way*, ready to traverse the Pacific . . . and realize my dream. My first passage was a grueling one: 2,400 miles to Hawaii. Like many beginners, I committed every blunder possible during my 20 days en route. These mistakes — like dropping my spinnaker into the water in 18-foot seas — gave me plenty to do when I reached Hawaii. I spent more than a few days sewing all the rips back together. The rest of the week was spent hammering out the jib pole I had made into an "L" during the same incident.

Free advice

Because of my strict budget, getting a new pole or having my spinnaker professionally sewn was out of the question. I was forced to do it all myself. Luckily, the sailing community in Hawaii was willing to give me lots of free advice. I listened to it all and learned much in the two months I was there. By far the best and most unusual advice I received was to check the marina's dumpster on Thursday afternoons.

"The trash truck," my Hawaiian friend, John, told me, "takes away the goodies on Friday morning."

I was skeptical about climbing into a dumpster looking for loose boat items, but I decided to chance it. What I found amazed me. Bits of useful teak, canvas, and stainless steel filled the

thing. My first major score was under an empty 5-gallon paint bucket: a Class B EPIRB that needed a battery. Later I pulled out a ripped storm jib that required just two hours of fixing. For the next few weeks that I stayed in the Ilikai Marina, I was a regular on Thursday afternoons at the dumpster.

After Hawaii, I made my way south to Tabueran, a tiny atoll in Kiribati. In spite of the dumpster, Hawaii had really dented my budget, and I only had a few hundred dollars for the remainder of my journey. Soon I would be forced to find work if I wanted to carry on. Miraculously, after six months of anchoring for free off Tabueran and getting to know the locals like family, I still had a few hundred dollars left. In fact, I hadn't spent a cent. There just wasn't anywhere to spend it on Tabueran. Another great secret was revealed. I simply needed to stay in areas where I couldn't spend money. When my canned food and supplies ran low, the islanders taught me to climb coconut trees, catch lobster in the coral, and pick the best papayas. It was the ideal island life.

By far the best and most unusual advice I received was to check the marina's dumpster on Thursday afternoons.

Jimmy Hall

Cultural experiences

After Kiribati I made my way to Western Samoa, Tonga, and Fiji. I avoided the capitals and main ports in hopes I'd save money. It worked well, and by sticking to the isolated islands, I found authentic cultural experiences with the people there; I was also able to put off the job hunt. I thought all was going perfectly until I made a huge, costly mistake.

I was on passage to Santa Maria, an obscure Vanuatu Island. I went to sleep at 3 a.m., setting my alarm for 6 a.m. That would give me at least a 90-minute margin before I reached the nearest shore. At 5:58 however, I awoke to surf swamping my transom and *The Way's* keel grinding on coral. My chart was eight miles off, and the current was much heavier than I had anticipated. There were only a few minutes before I would be slamming against the cliffs of Santa Maria.

I jumped in the cockpit and tried to steer the boat through the surf. When I made it to the inside where the breakers were smaller, the water got a tad deeper . . . but not enough for me to stop grinding. My keel drew 4 feet, but the depth was only 3½ feet. With every wave my boat lurched atop the coral, creating the worst sounds a sailor could imagine. I raced to my bow and pulled down the jib. Next came the mainsail. That dropped the waterline a few inches. Now I needed to get my boat pointed toward the surf. I deployed my 25-pound CQR. When it caught, it whipped the nose around. It was too shallow for me to motor out so I waited for a few minutes, thinking, trying to gather myself, needing to figure out a sensible plan. With every wave *The Way* rose, then slammed back onto the reef. It made concentrating almost impossible. I knew the tide was dropping so I had to do something immediately. My dream was about to be lost.

On the previous page, Zoltan contemplates the endless horizon while under way to Palau Payar Marine Park. This page top,* The Way *sails near New Britain, Papua New Guinea. Behind the boat is the volcano that destroyed the town of Rabaul in the early 1990s. At left, the Pearson Commander is underway to Espirito Santo, one of the more populated northern islands in the Vanuatu archipeligo.

The Way ***is tied to a sunken barge in the lagoon of Fanning Island, Kiribati, at right. Below, Zoltan shops for eggplant in the Suva market in Fiji.***

Unloading weight

Finally an idea struck me, a very natural one under the circumstances. I began unloading hundreds of pounds (and dollars) worth of canned food from my bilge. Next went three portable five-gallon water tanks. Finally my dive belt, 35 feet of ⅜-inch chain, a 22-pound fisherman's hook, and my Suzuki dinghy engine went overboard. These 300 pounds made a difference, but not enough. There was still too much weight to make a run for it, even with the engine at full throttle. More had to go.

Inevitably, I was next. I jumped in the ocean. Since the boat was powered by an outboard, I could steer her from the water with it. I would use my hand, but I had to be careful a wave didn't throw me into the propeller. I waited for a few minutes, scanning the horizon for a set of waves. When they came, I jammed the throttle to full speed. *The Way* took off, grinding, bulldozing through the shallow sections — but moving fast whenever a breaker raised it above the reef. My idea was working — the set of waves was adding temporary depth under the boat. It was just enough to get *The Way* past the impact zone and into the open ocean.

After I pulled myself on board and made sure I was far from the breakers, I used my mask to examine the damage. Luckily, it was less than I'd imagined . . . a testament to the Pearson name. The keel held up remarkably well; there were lots of huge gouges but no leaks.

Cracked rudder

Unfortunately, the same couldn't be said about the rudder, which took the brunt of the 6,000 pounds of continuous slamming. *The Way's* rudder was cracked and bent out of shape. Permanently stuck to starboard, it was unusable. It required a complete rebuild with new wood and a strong outside layer of epoxy. I had a Hydrovane self-steering system with an auxiliary fin, so I was still able to steer my boat. But when I reached the next major port I'd be forced to make the repairs, buy the gear I'd thrown overboard, and restock the canned food I lost. The question now was how to pay for all this.

"... when my sister telephoned to tell me there was a full-keeled 26-foot Pearson Commander for sale in Santa Barbara for $3,000, I took the big dive and gave my two-week notice."

In Guadalcanal Island in the Solomons, I happened upon some luck. A group of surfers were looking to do some exploring. We struck a deal. I would act as their captain and *The Way* would serve as their exploration vessel — the result was $400 that would cover some of my losses. A few weeks later, my surfer friends flew back to Australia, my rudder was better than new, and I was underway to Papua New Guinea and Micronesia.

I finally curtailed my trip in Guam for a year when I found a fantastic full-time job as an archaeological salvage diver. It really wasn't a job because the true definition of my work was "treasure hunter." It's hard to compare diving for silver coins in perfect visibility with stocking the dairy section at Ray's Grocery Store. In addition, it paid the bills, got me completely caught up on my canned food (portable ballast for the bilge), and paved the way for more South Pacific cruising adventures. Soon I was on a fast reach to Palau — the beginning of another dream.

Zoltan continued to Greece via the Indian Ocean and the Red Sea to Greece. There he sold his Pearson Commander and returned to Los Angeles where he works as a freelance writer and videographer. His sailing travels have been incorporated into three Travel Channel productions, and he's currently working on a book about his journey in the Pacific to be titled, Seven Years of Fire: An Artist's Journey into Manhood. *He hopes to return to Greece within five years, buy a larger boat, and finish his circumnavigation.*

Deck makeover

Follow these instructions to give your deck a sparkling new life

by Don Casey

With much of the hardware removed, Don's deck is ready for prepping and painting.

A peek at how Don's finished deck will look. Handrails and hardware have not been installed, and the overlay is not adhered.

THE VERY FIRST DAY A NEW BOAT IS rolled out of the shop, the sun (or rain, or sleet, or hail, or hobnailed boots) beats down on the deck while at least half of the hull is sheltered. This defines the disparate lives of deck and hull. Ergo, the deck of a sailboat typically needs refinishing long before the hull, a need that largely goes unattended by most sailors.

Why? Because painting the deck is hard.

I cannot make it easy, but I can prevent you from making it even harder. And if you follow my guidance, your efforts will be richly rewarded.

Choosing your paint

As with painting the topsides (see *Good Old Boat,* January 2002), the best method for painting the deck is the roll/tip method. However, the deck is not a free expanse like the topsides, and you are going to find a lot of your deck area inaccessible to a roller. Because of this, a lot of sailors elect to paint the deck with a single-part polyurethane. One-part paints have a much longer "open" time for brushing them out around obstacles like stanchion bases and grab rails. In general, it is easier to get a nearly stroke-free finish on the restricted areas of the deck with a single-part paint.

To me, however, this is not a compelling argument. In the first place, a two-part paint will last two to three times as long as a one-part, and painting the deck is not something you will want to do again any sooner than you have to. Secondly, the majority of the deck is nonskid, where brush strokes are not an issue and the thinner consistency of two-part paint has less tendency to smooth out the texture. As for the smooth surfaces, a two-part paint gives a clearly superior finish where you can roll and tip. The logic of sacrificing this advantage for the majority of the deck to the promise of better results in the restricted areas eludes me. Besides, with a little forethought, you can get around most of the problems presented by the shorter open time of two-part paints. The result is usually a better finish over the whole of the deck.

All the prep work is the same no matter which paint you choose, but I urge you to plan on using a two-part polyurethane for the top coats. As you will see, we are going to paint the deck in sections, so if you are disappointed in your initial results, you can simply switch paints. However, I am confident that if you try it, you'll find it easier to get good results from a two-part paint than you imagine. And if you don't curse me now, you will bless me when you are sailing rather than repainting three years from now.

The nonskid issue

A major concern when repainting the deck is that you do not compromise the anti-skid surfaces. If the molded-in texture is aggressive, a coat or two of milk-thin polyurethane should not be significantly detrimental. Unfortunately, the best thing you can say about the "nonskid" texture on many older boats is that it is less slick than the untextured surfaces. Even that may not be true after you paint it.

If you don't want your deck to offer poorer footing, you have three choices: you can mix grit in with the paint, you can sprinkle grit onto wet paint, or you can eschew paint on the nonskid areas altogether and glue down a rubberized overlay. Your choice influences exactly

how you will paint the deck.

Of these three, rubberized overlay has the clear advantage as far as secure footing goes, but it's expensive and relatively heavy. Mixing grit into the paint is the easiest, and may be your best choice when the textured surfaces are a different color from the smooth surfaces. Sprinkling the grit requires an extra step for a two-color deck, but generally gives a more attractive result. On a one-color deck, the sprinkling method is preferred.

Preparation

Preparation for painting always begins with cleaning. The schedule is the same as for cleaning the hull; that is, a detergent wash (Wisk) followed by degreasing with MEK (or acetone) followed by dewaxing with a dewaxing solvent (Interlux 202 or equivalent). An unpainted deck will still have traces of mold release, so you must dewax the surface before you paint. I like boxed wipes for cleaning smooth surfaces, but use a brush for scrubbing and clean terry cloth for wiping textured surfaces.

High-gloss polyurethanes — single-part and two-part alike — do not hide flaws; they accentuate them. If you are trying for a flawless finish, you must be painting a flawless surface. The implications of this axiom depend on the condition of your gelcoat.

Where the gelcoat is simply dull, but in good condition, you only need to sand the surface with 120-grit paper to prepare it for paint. The gelcoat provides a fine base for the paint, so no primer is required.

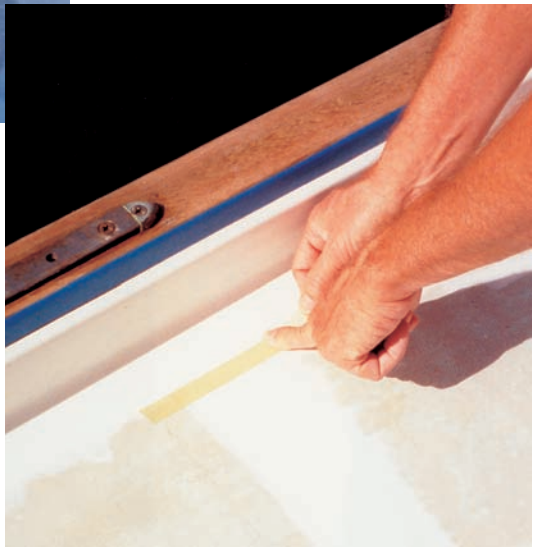
More often, the deck is showing its age with scratches, gouges, "break-outs," and perhaps crazing. Crazing has the look of a cracked eggshell and occurs over large sections of the deck. Do not confuse this with stress cracks that typically emanate from beneath stanchion bases or show up as parallel cracks in molded corners. Stress cracks require corrective measures beyond the scope of this article.

Repair gouges and break-outs with an epoxy filler and sand them fair. Prime the repaired areas with epoxy primer (Interlux 404/414 Epoxy Barrier-Kote Primer). Epoxy primer alone is the cure for crazing.

One "trick" to getting a professional finish is to remove as much deck hardware as practical. When you don't have to brush around some fitting on the deck, you lower the likelihood of having visible brush strokes in the finish at that location. This eliminates edges where the paint fails, since the new coating will extend under the reattached hardware. Think of painting the deck as the ideal opportunity to rebed deck fittings. The more deck hardware you are willing to remove before you start painting, the better your paint job will be.

"Think of painting the deck as the ideal opportunity to rebed deck fittings. The more deck hardware you are willing to remove before you start painting, the better your paint job will be."

All adjoining surfaces, including all hardware that you elect not to remove, will need to be masked prior to priming the deck. For separate surfaces, such as cleats, handrails, portlights, and toerails, blue Long Mask (3M #2090) is a good choice. To divide the deck surface into sections, use only Fine Line (3M #218) masking tape.



When masking toerails and hardware, blue Long Mask is a good choice, above, but use only Fine Line tape for dividing the deck surface into sections, at right. BUT WAIT! Don's not going to get any paint on that* Good Old Boat *T-shirt we hope!

Priming

If your deck repairs are extensive and widespread, you will get better results by priming all of the smooth surfaces. Priming is also required where the gelcoat has become porous. Sand all surfaces to be primed with 100-grit paper. Much of this sanding will have to be done by hand. It is essential to remove all gloss and to give the entire surface a good anchor pattern.

Allow mixed epoxy primer to sit for about 20 minutes before adding thinner, then thin according to the instructions on the can: about 25 percent by volume if you are using Interlux 404/414. You can simply roll the primer on with a foam roller, but you should get a smoother surface, which reduces sanding time, by tipping it with your badger-hair brush as though it were a finish coat. Epoxy primer does not take long to set up, so you must work quickly, rolling only a small area and tipping it immediately.

Crazing generally requires a second primer coat. Sand with 100-grit between coats. Sand the final coat of primer with 120-grit paper to prepare the surface for painting.

Textured surfaces should not be primed (repair areas excepted) unless you will be using grit in the paint to

Primer has been applied. Some portlights have been removed; some are masked.

enhance the nonskid properties. If that is the case, they are primed separately from smooth surfaces. If you are not priming textured surfaces and especially if you will be painting both smooth and textured surfaces the same color, you can simply "cut in" the primer around the nonskid panels without masking. Otherwise, mask their perimeters before you prime the smooth surfaces, placing the tape on the texture side of the smooth/texture border.

Keep in mind that while priming hides flaws, it can also introduce them. Allocate an entire day to do nothing but sand the primed surfaces to rid them of brush or roller tracks. The smoother you get the final primer coat, the better you can expect the top coats to turn out.

If your entire refinishing job takes place over a couple of weeks, it is possible to let the masking you do for the primer coats to also serve for the finish coats. However, there is some risk that the build-up of paint on the edge of the tape will get strong enough to lift the adjacent paint when you finally do peel the masking. It is better to remove the masking before you sand the final prime coat, then remask for the finish coats.

Priming nonskid

Primer will fill the texture of the nonskid areas. Consequently, you should not prime the nonskid surfaces unless you will be using the primer to adhere grit to the deck.

The process is quite simple. Mask the nonskid panel, this time with the tape on the smooth side of the texture/smooth border, and quickly roll on a coat of epoxy primer. If the texture is deep, you may need a roller cover with a short nap (rather than foam). While the epoxy is wet, cover the whole surface with grit sifted through your fingers or from a shaker. When the primer is dry, sweep off the loose grit (save it to reuse) with a soft brush. When you encapsulate the adhered grit with a top coat of polyurethane, you will end up with a painted surface with excellent nonskid properties.

Your grit can be a so-called nonskid additive, typically polymeric spheres, or it can be sand. Sand provides better footing but is harder on skin and sails. If you decide to use sand, you want #36 foundry sand or sandblasting sand. The impurities in beach sand make it an inferior choice. If you choose synthetic grit, it should be the coarsest you can find. It need not be from the same manufacturer as the paint.

"Two coats should be adequate, but if you think you can improve the results, you can repeat the process one more time."

You can skip the primer step and simply add grit to the paint, but I find that this results in an irregular dispersion that is less pleasing to my eye than sifted-on grit. To avoid your own disappointment, do a test application both ways on a scrap of plywood. This test will also allow you to decide if your selected grit is too aggressive or perhaps not aggressive enough.

Divide and conquer

If you have stayed with me this far, here comes the payoff. To get a sprayed-on look on the deck's smooth surfaces you must limit the roller application to a single wet edge, but how do you do this when the smooth surface branches, then branches again as it surrounds the nonskid panels? The answer is that you paint the deck in sections, masking off the branches.

For example, you might start by painting just the area between the toerail and the outside edges of the deck nonskid. Nonskid panels will be painted separately (and last) for reasons I will share momentarily. Consequently, the textured areas are either masked if you are going to paint them or, as in my case, simply unprimed because they will be covered with a nonskid overlay.

To limit your wet edge, put a strip of Fine Line masking tape across the end of every branch of the smooth surface that separates nonskid panels. In other words, you extend the outboard edge masking of the nonskid sections right across the smooth strips that divide them. What you are trying to do is create a narrow, continuous strip of smooth surface, without any branches, that continues right around the deck. If you start painting at one corner of the transom, you can roll and tip this strip all the way to the bow, then back to the transom on the opposite side of the deck, and finally across the transom to end up back where you

Painting the rail "strip."

The payoff: painting the deck rolling, at left, and tipping, at right.

started. You paint this section dealing with a single wet edge, which is the secret to a stroke-free finish.

Next, perhaps, you isolate the smooth surface between the inboard edge of the deck nonskid and the outboard edge of the nonskid on top of the cabin. This much wider strip includes the cabinsides, and unless the portlights have been removed, it necessarily branches around them. However, if you roll on the paint right to the end of the portlights, you can make this less like two wet edges and more like a middle section that does not need tipping.

Wait until the next day to paint the remaining smooth sections. Lay fresh tape edge to edge and on the painted side of the tape strips separating painted from unpainted, then peel up the old tape (see illustration on Page 76). This should give you a number of short, mostly athwartship sections, and perhaps a couple larger areas around a mast or hatch opening that need to be painted. Brush or roll and tip these areas one at a time. When they are dry, peeling up the tape separating them from the sections you painted the previous day leaves a nearly invisible joint line — much like a mold mark. You will have eliminated virtually all application delays — the primary cause of brush-strokes in the finish.

Painting the nonskid

It is obvious that nonskid areas get painted separately when they will be a different color or when you plan to use grit in the paint, but it may be less obvious that they should be painted separately even if they are the same color as the smooth surfaces. Consider this: if the molded texture is bold enough not to need grit added to the paint, it will be too deep for the foam roller you are using on the smooth surfaces. You could paint smooth and textured at the same time when painting over primer-adhered grit, but painting the nonskid separately makes it easier to divide the deck into easily manageable sections. Keep in mind that there is no need to tip the nonskid surfaces, so painting the smooth surfaces separately allows you to focus your effort where it will show.

Always paint the textured panels last. This is so the final masking is on the smooth surface, which will give a crisper line. Also, if you are painting the nonskid a color, the color covers any weepage of the white better than the other way around.

Weather

You can do the prep work in almost any kind of weather, but apply the top coats only in mild temperatures of between 50°F and 80°F. And as with painting the hull, the air must be dry. Don't paint too early in the morning or too late in the afternoon. Don't paint when rain is a threat. Don't paint when the humidity is above 70 percent. Break any of these rules and the paint will refuse to flow out for the stroke-free finish you are after.

"There is much to recommend using a flattening agent … in deck paint. Sun reflecting off a mirror-like surface is hard on the eyes."

Lighting is also an issue. In my experience, about half the time when you are painting a white deck, it is nearly impossible to get the light at the right angle to see how the paint is going on. In this case, you have to rely on routine. Get the rhythm down, and you will get a great finish even with limited ability to assess it as you go.

About the paint

Follow the mixing and thinning instructions on the can. For deck painting, I tend to use the maximum recommended thinner: about 40 percent by volume. The deck's mostly horizontal surfaces are very forgiving, and the paint tends to level out nicely. Watch closely for runs on vertical surfaces, particularly beneath portlights. If you get a run or sag in the first coat, you are going to sand it out. Give trouble spots greater care for the final coat.

There is much to recommend using a flattening agent (Interthane 2317) in deck paint. Sun reflecting off a mirror-like surface is hard on the eyes. If you are about to leave for a cruise, you will ultimately be happier if you tone the finish down to a low luster. However, for a boat that sits at the dock most days, it can be hard to give up the sparkle of a high-gloss finish. Whether you let practicality or vanity rule is up to you.

It's still a sprint

As with painting the hull, the quality of your finish is greatly influenced by how quickly you can roll and tip. Roll a short section (not more than two feet) then tip it immediately with your "dry" brush. Work quickly, urging yourself to go faster.

For painting a narrow strip, such as inside the rail, cut a foam roller cover to an appropriate length. Paint stores sell adjustable trim handles that can accommodate narrow covers.

In addition to your badger-hair tipping brush, spring for a narrow

Continued on Page 76

The tropical perspective

# of Ed Carlson

After 20 years as an officer with the U.S. Army and 10 in the civilian defense industry, Ed leapt aboard a sailboat in pursuit of a more peaceful lifestyle sailing the waters of Florida and the Caribbean. He celebrates his cruising ground with a paintbrush and an eye for beauty. He and his wife, Pat, sail Skywind, *a ketch-rigged Cape Dory 30. More about Ed and their boat at their Web site: <http://hometown.aol.com/skywindmcm/>.*

PLASTIC SURGERY

Give your boat's name a facelift with vinyl letters and graphics

by Barbara Theisen

Your boat's name probably reveals a bit about you. How that name appears on your boat can also reflect on you. So take pride in your boat's name. Show it off, jazz it up, add your own personal touch. Today's computer-aided drafting techniques make adhesive-backed vinyl lettering easier and less expensive than you'd imagine.

Vinyl letters and graphics are more durable than painted ones. In a side-by-side comparison, the vinyl still looked bright long after the painted lettering had faded and worn. Tests done under harsh Florida sun showed vinyl lettering to have a five- to seven-year lifespan . . . about twice as long as that of painted letters. The adhesive-backed vinyl can be used on fiberglass, painted or varnished wood, and on metal-hulled boats.

Vinyl lettering gives you the option of applying your name and graphics yourself. This can save the do-it-yourself boater about 50 percent of the total cost. Add the superior durability, and it's easy to see that vinyl lettering is the way to go.

Your local sign company is one place to look for vinyl lettering. Most sign companies have the computer equipment to design your boat's name and graphics. Prices vary across the country but are generally competitive with those of mail-order companies. A local company, however, gives you the ability to deal with someone face-to-face. This can help when you're not sure what size letters or placement will work best on your transom layout, for example. *(Jeff Schuster of The Vinyl Image <http://www.thevinylimage.com> cautions buyers to ask for "high-performance," rather than "intermediate," vinyl. The 2-mil holds up better than the 3-mil product, he notes, but there's a price to pay for the better material. –**Ed.**)*

Reasonable prices

Prices vary, but by applying it ourselves, the entire cost for lettering and graphics for our boat was around $40. *(Prices vary around the country. Others suggest $50 to $75 might be a ballpark figure. –**Ed.**)* Of course the end price will depend on a great many factors, such as how complicated your graphics are, the size of your lettering, whether your name and graphics appear on two sides of the boat, versus just one name on the transom, and how much time the sign company spends designing your graphics.

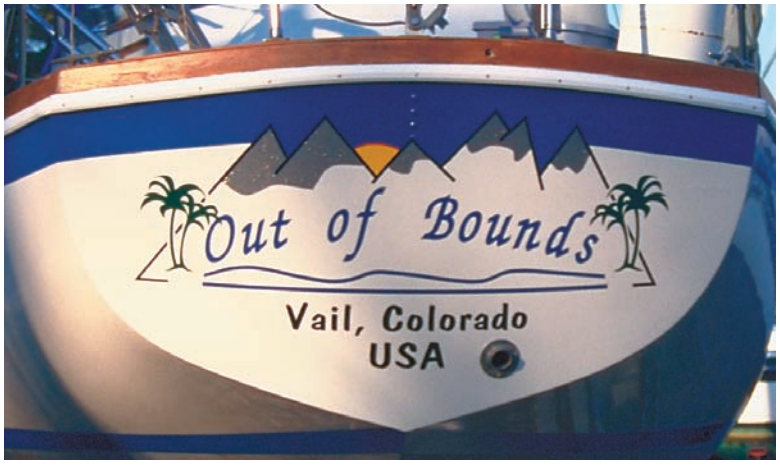
If your local sign company doesn't offer vinyl lettering, there are a number of mail-order companies which will be happy to serve you. Once you've found a company to do your lettering, the next step is to create an idea.

Creating an idea may be as simple as choosing a style and color for the lettering, or it may be more complex as you add borders, shadows, arcs, and, of course, graphics. Choosing the graphics that are just right for your boat will take some thought.

Our boat received its name from one of the favorite places my husband and I liked to ski. Former Vail ski instructors who were trading in our skis and our mountain life to live aboard a sailboat, we held on to a bit of our old life by naming our boat *Out of Bounds*, not the name of an actual ski run but rather what skiers call the back-country area you enter when you leave the ski area's boundary. For us, this name meant even more than a place to ski. It meant adventure, it meant going to places that might be considered out of bounds for most people.

Graphic ideas

Once you think about your boat's name, ideas for graphics generally present themselves. I knew I wanted mountains behind the name. Although I'm no artist, I do sometimes feel creative. Starting with my mountain idea, I scribbled on a piece of paper and came up with an idea I liked. To me, palm trees signified sailing to paradise, to someplace out of bounds. Our sign company took these scribbles and came back with a drawing I thought was perfect. I especially liked their suggestion of bringing the mountain peaks up into the boat's top stripe. If you have an idea in your mind (or already in scribbles), they can add the finishing touches to make it look professional. If not, they can start your design at the beginning. But the more you can do yourself, the more money you'll save.



Remember any Coast-Guard documentation specifications that apply (4-inch or higher letters for name and hailing port, for example). Also take into consideration the size and shape of your transom or the area along the sides of your boat, depending on where your name is to be placed. Chainplates, exhausts, and ladders can affect the placement of your letters and graphics.

Many sign shops will let you see a computer drawing of your name and graphics in full color. This gives you a chance to make any final changes. Then the computer will draw and cut your letters and graphics on adhesive-backed vinyl.

Easy to apply

Applying your new name is a fairly easy task. It can be done while your boat is in the water, although this will require the use of a fairly sturdy dinghy or a swim platform on a calm day. It certainly is easier to apply the name while your boat is in dry dock. Choose a day with temperatures above 60°F.

The first step is to strip off any wax and thoroughly clean the surface. Fresh paint must be allowed to dry a minimum of one week. Follow any specific directions given to you with your lettering.

Start by taping up your pounce pattern (if you have one). This is a sheet of paper with hundreds of tiny holes punched in the pattern of your design. Gently pat the pounce pad across the pattern *(see top photo this page)*. Removing the pattern will leave you with a temporary design on your hull. This gives you a chance to check for proper alignment. Once aligned, make light pencil marks on key areas for correct placement of the vinyl lettering.

Now thoroughly clean the graphite from the pounce pad off your hull, leaving only your pencil marks.

Depending on the size of your lettering and graphics, you may have just one or several sheets of vinyl lettering. Each sheet comes with the vinyl lettering or graphics sandwiched between two protective liners.

Tape it up

Line your first sheet up with your pencil marks and tape along the top edge only, allowing it to drape down onto the hull. Lift the entire sheet up and lightly spray the hull with your adhesive spray. If you were not given an adhesive spray, use a solution of one-quart of water to which a drop of liquid dishwashing detergent has been added (or follow specific instructions given to you). Now pull off the bottom protective liner, exposing the back side of the vinyl. Lightly spray this exposed back side and carefully place the vinyl back down against the hull.

Pounce pattern: little holes punched in the paper in the pattern of your design provide a method for lining up the vinyl sheets.

Squeegee: squeeze out all air bubbles and wrinkles trapped in the vinyl.

The unveiling: slowly pull the liner toward you and down to reveal your letters and graphics.

Using a squeegee, squeeze out all air bubbles and wrinkles *(see center photo)*. Allow this to dry for several minutes. Now untape the top protective liner and pull it slowly toward you and down, leaving your vinyl lettering attached to the hull *(see bottom photo)*. If any air bubbles or wrinkles remain, place a piece of the liner over the area and squeegee again. Repeat the entire process with any remaining sheets of vinyl lettering. Be sure to clean off any spray adhesive that has dripped down the hull before you start on your next sheet.

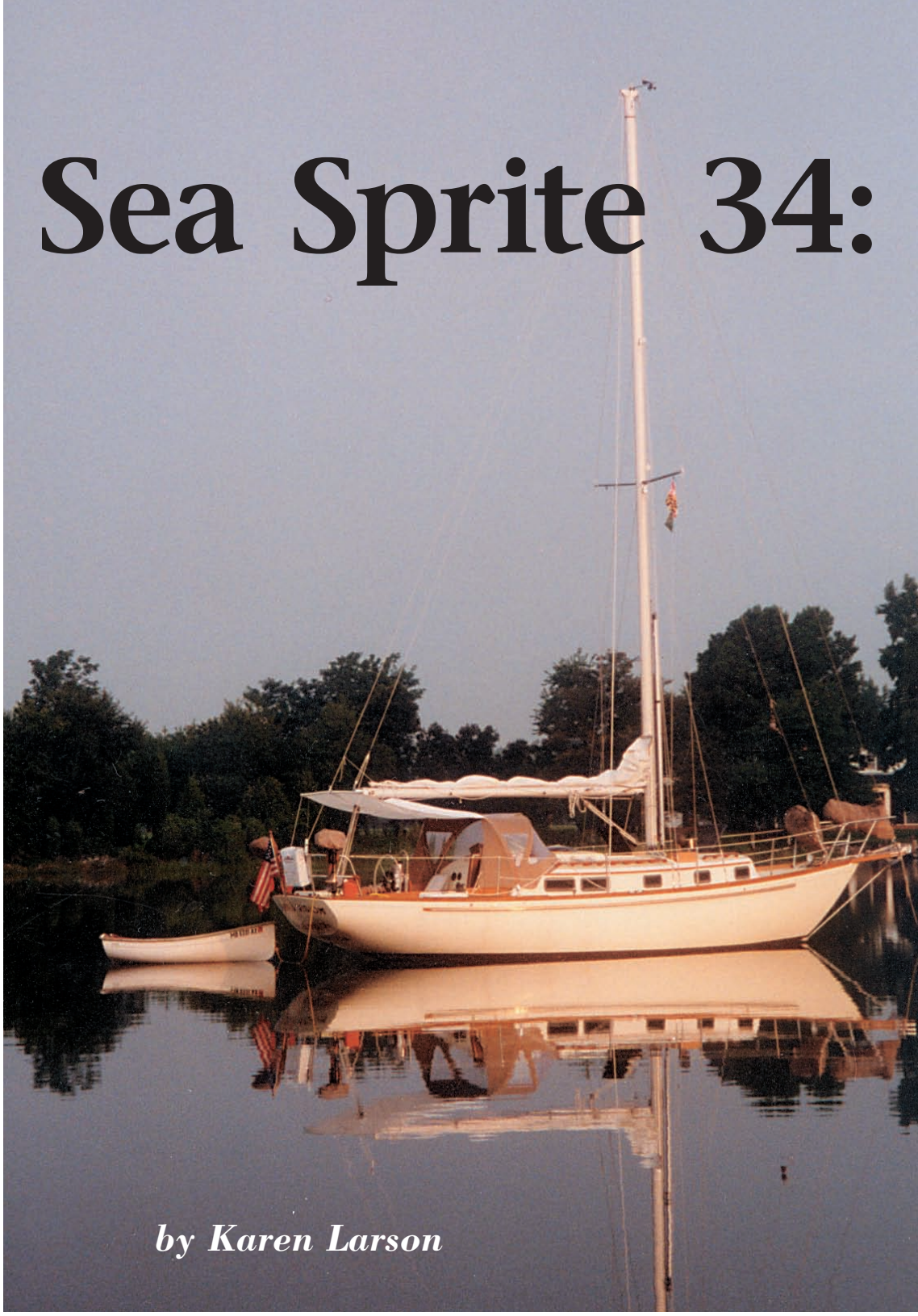
Now it's time to sit back and admire. Oh yes, and listen to the compliments. When it comes time to give the boat a cleaning, treat your vinyl lettering just as you would your boat's hull, with your usual cleaning solution, water, and a non-scratching brush. Your vinyl lettering will give you many years of satisfaction.

An added bonus of using vinyl lettering is that the design can be stored on computer for future use. The lettering is also easy to remove. Simply heat the letters with a heat gun or hair dryer and peel them off.

When we bought our boat, she needed a lot of spit and polish along with some major upgrades. We found that applying vinyl lettering and graphics was an easy, inexpensive project that greatly enhanced our boat's appearance.

Barbara has spent more than 10 years living aboard Out of Bounds *with her husband, Tom, and daughters, Kate and Kenna. They have cruised the Great Lakes, the East Coast, the Bahamas, and the Northwest Caribbean. Visit the Theisens' Web site at <http://www.TheCruisingLife.com>.*

Sea Sprite 34:



by Karen Larson

"One big do-it-yourself project." According to Bruce and Nancy Worster, this accurately describes their marriage, raising a family, and in particular their pursuit of happiness. After 35 years spent together figuring it out as they go, the Worsters agree that they've stayed together because "we still like each other." There's clearly an understatement in there somewhere.

"Pursuit of happiness" has often meant sailing for the Worsters. First they learned how to sail and incorporated two young and growing girls in their sailing activities. Then they bought an unfinished Sea Sprite 34 in 1983 from C. E. Ryder in Bristol, Rhode Island, as a "Stage 3 Completion Model." It was built to their specifications. Of the 45 to 55 Sea Sprite 34s built, #13 is cutter-rigged. She has a deck-stepped mast, a masthead rig, and a tall-profile toerail. The Worsters chose inboard shrouds as well. The variability in numbers of completed Sea Sprite 34s has to do with whom you ask and what got counted. Bruce notes that Ryder was cautious about keeping the owner-completed hulls separate from those finished by the plant, since the factory was not certain that owners would finish them to Ryder standards.

C. E. Ryder offered owner-completion kits as Stage 1, 2, or 3 boats. Stage 1 offered a bare hull with only the deck attached. Stage 2 offered the addition of bulkheads and an operable engine in place. Stage 3 offered all running and standing rigging, an essentially finished exterior, a mounted and operable engine, bulkheads, a companionway ladder, galley, icebox, and some interior furniture, such as the chart table. All finishing and completion of the interior and systems was left to the owner. While not a completely bare hull, major systems were missing. There was no plumbing. There were no pumps. No head. No sinks. No steering system. No sails. No stove. No ground tackle. No bunk cushions. No electronics. These were finishing items that required a lot of labor and provided the greatest opportunity to save costs.

Finishing instructions

"We were provided a box of labeled parts (mostly rigging) and a checklist to follow during commissioning . . . we were given a book on general finishing instructions on Ryder boats and, at my

An ongoing DO-IT-YOURSELF project

request, a complete set of blueprints for the cutter-rigged Sea Sprite 34," Bruce recalls.

"Nancy and I began by doing what we have done our whole married lives. We applied our learned skills, mine in engineering and hers in sewing. We divided the work to be done and divided the tasks into doable chunks. We decided where to start and began."

They first applied and glassed ribs to the hull so they could line the hull with ash battens. Then they built a dinette table, drawers and doors for the cabinets, and doors for the head and V-berth. Bruce is "reasonably skilled at woodworking," by his own admission. Nancy trained as a nurse and spent years working in doctor's office, hospital, and research settings. But she is also a talented seamstress in her own right . . . the kind who isn't afraid of industrial-strength sewing machines and tasks.

"Bruce gave me my first sewing machine in 1965 when I was graduating from nursing school," she recalls. She made clothes, draperies, and the like for the family and did some tailoring. Then she expanded her talents to create upholstery, sailbags, sail covers and other canvaswork for the new boat. Most daunting of all, she made the sails, although she notes that she did *not* make the dodger or the roller furling sail when they later added that convenience. This new talent eventually led to the end of the nursing career and the beginning of a career as a canvasworker and sailmaker for Nancy, who then sewed sails for smaller boats, such as Hobie Cats. She also did a great deal of contract work for Sailrite, which was located nearby.

Sailing again

Hoosiers for most of their lives, Bruce and Nancy raised their daughters and rediscovered sailing in Fort Wayne, an Indiana town not more than a few hours' drive to lakes Michigan and Erie. Even before that, Bruce spent summers growing up in a cabin on Chapman Lake in northern Indiana

Crystal Vision, ***a Luders-designed Sea Sprite 34, at anchor on facing page, and on the road from Fort Wayne, Indiana, to her new home on the East Coast.***

and sailing a Sea Snark. "That's a small wet sailer," Bruce says. "I had a ball with that. It was upside down most of the time." While still young, Bruce vowed that he'd have a boat by the time he was 35.

Indeed, by the time he was 32 or so, a career man, the father of two young girls, and firmly planted in northern Indiana, the sailor in Bruce was allowed to re-emerge. The Worsters bought an AMF Paceship PY 23 and named her *Finesse*. The price was $7,600. "It was all the money in the world," Bruce remembers. Nancy adds, "I thought you were out of your mind." But the broker promised the couple, "If you don't like sailing, bring it back; I'll give you ***all*** your money back." Of that offer Nancy says, "He knew he could always sell that boat." They did not give him the opportunity.

Finesse is fondly recalled by the two as "a boat that went like a banshee" and "you could sail it in a zephyr." The first day, however, was a bit of a trial for Nancy, who'd never been sailing. "We took delivery on Lake Erie on a gusty day," she says. The boat, which was equipped with a 170-percent genoa and a full main without reef points, was a handful for a couple of inexperienced sailors in gusty conditions.

Learned the terms

"I thought I'd never live to see shore again," Nancy recalls. "When we did make it back, I said, 'I won't be comfortable sailing until I can do what you do.'" And she made that her goal. "I had to learn the terms, had to feel confident, had to take the helm," she says. They trailered this boat all over Indiana and to Great Lakes destinations, cruising and doing some one-design racing, but primarily using it as a family boat on Lake Wawasee, not too far from home.

Daughters Jennifer and Stephanie were 4 and 7 when they became sailors. "The whole reason for getting into sailing at all (besides the fact that I love it) was that it was a family activity," Bruce says. But *Finesse* got small as the family grew, he points out, and it was time for a larger boat.

Belowdecks* Crystal Vision *shows off the complementary skills of Bruce and Nancy Worster with saw, sandpaper, and sewing machine.

The next boat was another trailerable boat: a 26-foot S2 that they named *Jubilation*. They did a great deal of family cruising in this boat, but it was not the sailer the Paceship had been. In one case they hobby-horsed in some large waves without being able to point adequately or make headway. Nancy recalls screaming at no one in particular that she'd take five cents for the boat right there on the spot. She might have sold the boat, but there was no one with a ready nickel within range of her voice. That was the end of that boat's career with the Worsters, however.

They began a quest for a bigger boat and, because of the memory of not being able to point when they needed to, they overreacted when they did find their dream boat. They had their Sea Sprite built with inboard shrouds, a decision they now regret, since movement on the sidedecks is restricted by three shrouds.

Full-keel vessel

Their quest was more like a process of elimination. They agreed on the type of boat they wanted. It should be a full-keel vessel with relatively heavy displacement. It should be 30 to 35 feet in length. It would have relatively low freeboard, be cutter rigged, have no more than a 5-foot draft. They deliberated about a deck-stepped mast versus a keel-stepped mast. At one point Bruce called Bull Luders, who advised them to go with a keel-stepped mast if they planned to be doing offshore cruising. They considered this but then selected a deck-stepped mast for the sake of additional space, particularly in the head. In the end, Bruce says, Bill Luders agreed that a deck-stepped mast, as built by Ryder, would do well wherever they sailed it. They have not regretted this decision and have since decided that their sailing is mostly limited to coastal cruising anyway.

"I began research that included the Goderich 35, Jason 34, and Southern Cross 31," Bruce says. "I knew that the cost would dictate that we do some, if not all, the finish work. Because of the various owner-completion options offered by Ryder, their line of boats offered the most options and the least amount of pain for achieving our goal."

The Southern Cross was their favorite, so they visited the Ryder plant while on vacation on the East Coast. While discussing Tom Gillmer's Southern Cross 31, which was built there, they were also shown the Sea Sprites at the plant. Ryder was building Sea Sprite 23s, designed by Carl Alberg, as well as the 28, 30 and 34, designed by Bill Luders. They were intrigued by a 34 under construction that was being made into a cutter with high-profile toerails. Then, Bruce recalls, on another trip east he requested a sail on one of Ryder's Sea Sprite 34 models before committing to an order. "I was hooked, and the hook was well set," he says.

September delivery

"In early 1983 we placed an order and got on the Ryder build schedule for delivery late in the summer . . . we took delivery in September 1983, named her *Crystal Vision*, worked hard on her all winter, and christened her in June of 1984," Bruce says. "We got familiar with *Crystal Vision* and grew rapidly to love her.

The Sea Sprite 34 offers a comfortable cabin with a seagoing galley and fold-down dining table. Evidence of the Worsters' fine workmanship is everywhere on hull #13. This is an owner-completion boat worthy of pride by hull manufacturer C. E. Ryder.

"Once *Crystal Vision* was completed, I lined up a truck, brought her to Indiana, and put her in a secure area at a friend's manufacturing facility in Ft. Wayne. The boat was about 15 or so miles from our home, and we worked nights and weekends all winter to complete as much as we could before spring. We completed the ash lath and most of the cabinetry. I installed foot-pump operated faucets and galley and head sinks. I also installed a bladder holding tank and a manual head. I installed the steering system, a Richie compass on the binnacle, and automatic and manual bilge pumps. I completed some of the wiring to such things as lamps. I also installed the galley stove and pressure alcohol tank.

The next step was to rig her and take her sailing. The sails were completed in the spring of 1984 with final handwork done on board over the Fourth of July. After we rigged her, we christened and commissioned her on June 23, 1984. In late July and early August we took her up the Detroit River into Lake Huron.

"The finishing work has been going on most of the 18 years she's been in the water," Bruce says. The Worsters say *Crystal Vision* continues to be "a work in progress." Although she was sailable, they continued to add refinements and their own modifications. They added shelving and caned cabinet doors. They made the chart table flat to accommodate their Sailrite sewing machine. Over the years they replaced the hanked-on jibs with a furler and added self-tailing winches. After, as Bruce puts it, "we kissed a piling" they added a teak rubrail a few inches down from the hull-deck joint.

Still more to do

Since boatwork is never done, there's still more to do of course, but perhaps if they have come to the point of replacing original parts, the Worsters will soon conclude that their work-in-progress was completed at some point after all and now is being upgraded like so many good old boats in marinas everywhere.

Not long ago, they added pressure water. Now they're planning to add refrigeration. They'll replace the stove. They'll add radar. They want to replace the port glass, the dodger, and the hatches. Eventually, they'll redo the deck, Bruce says, since it is showing a bit of crazing. "We do something new and enjoy it for two to three years," Bruce says thoughtfully.

"Then it's time to redo it." But he notes the hull is sound, and they have had no laminate/core separation. "Ryder did an excellent job of building this boat," Bruce shrugs.

The following summer Bruce was transferred to Virginia, and the boat, which they'd trucked to Indiana, was

in the wrong place. "My new boss was kind enough to give me enough time to move *Crystal Vision* by water," Bruce says. "We traveled across Lake Erie stopping in Ohio and Pennsylvania on the way to the Black Rock Canal outside of Buffalo, N.Y. Once through the Black Rock Canal, we stopped at the entrance to the Erie Barge Canal and lowered the mast in order to go through the canal. That was quite a trip: under some 315 bridges and through 33 locks to exit in the Hudson River. We raised the mast again at a yacht club just outside the canal at Albany and proceeded down the river to Sandy Hook and offshore to Cape May, N.J. From there we went north up the Delaware Bay to the Chesapeake and Delaware Canal and into the Chesapeake to Annapolis. What a great trip. We would like to do it again when we have more time."

Not enough time

Of course that wasn't the end of it. Bruce was transferred back to Indiana in 1991, just six years later. On this round there wasn't enough time to move a boat by water, so *Crystal Vision* was loaded on a truck once more and hauled west. But once they were back home again in Indiana, the Worsters longed for Chesapeake sailing. "Lake Michigan is cold even on the Fourth of July," Bruce notes. "In 1996 we moved her again by truck and simply drove to Maryland a few times that year for vacation. In 1996 I was fortunate enough to get a job with a company in Maryland. I might point out that trucking a large sailboat is hard on it. Notwithstanding the diesel soot caused by the truck, which is difficult to get off teak and fiberglass, the constant flexing results in cracks that were not there before. I don't recommend it. Boats belong in the water."

Rather than live near the beltway and commute to their boat, Bruce elected to locate near their boat and commute to the job in D.C. They built a home a couple of blocks from *Crystal Vision's* slip. "I know there are many sailors who would give their eye teeth for our situation. We are happy here," Bruce says. To put icing on the cake, he is now commuting to a job only 30 minutes from home (and the boat, of course).

Life is so good, in fact, that even as retirement looms, the Worsters say they feel no compulsion to sail around the world. A year in the Bahamas might be nice . . . a trip to the Great Lakes wilderness destinations they enjoyed so much . . . or perhaps to Maine. "Otherwise we mostly will do coastal cruising and can sail well into our 70s in comfort on *Crystal Vision*," Bruce says. A few other (larger) boats have occasionally caused them to be briefly unfaithful (lusting only in their hearts) to their Sea Sprite 34, but they agree they're content with their choice. "This boat is a great boat and very capable of coastal cruising," Nancy says. "We're glad we don't have a big investment in a boat and plans for circumnavigation."

Karen is editor of Good Old Boat.

The Sea Sprite 34

A Luders 33 by any other name would sail as sweetly

by Ted Brewer

The Sea Sprite 34 is one of the few Luders auxiliaries created since 1960 that I didn't have a hand in. On the other hand, I may have had quite a bit to do with it in a roundabout way, as I'm convinced the Sea Sprite is really a slightly modified Luders 33. I was very involved in *that* project in the mid-1960s.

It has to be more than coincidence that the Sea Sprite 34 and Luders 33 have the same waterline length, the same draft, and the same displacement. It is obvious, to me at least, that the Sea Sprite's added 8 inches of length was obtained by the simple expedient of increasing the angle of her transom. The Sea Sprite does claim 3 inches more beam, but that may be just advertising hyperbole, or the hull may have been given a touch more flare above water.

The only major difference in the hull is in the rudder. The Sea Sprite's rudder has been given more rake, cutting a few square feet off the wetted surface, possibly because Bill, who had sailed the 33 extensively, felt this might give a better helm. He redesigned the sail plan also, and that may be another good reason for the rudder change as the center of effort was moved forward slightly with a shorter mainsail foot and taller luff.

Some people will say that the boats don't look alike, but that's easy to explain. The cabin trunk that was designed originally for the Luders 33 looked exactly like the one on the Sea Sprite. But Allied, the builder of the 33, already had a deck mold for their Seabreeze 35 so, rather than build another deck mold, they simply used what they had and made minor changes abaft the transom so it would fit.

The biggest change from the 33 is in the taller ⅞ rig. I do like the newer sail plan better. It appears that Bill took about 12 square feet out of the 33's foretriangle and added it to the Sea Sprite's mainsail so both yachts still have identical sail area. The 33's main, with its low 2.29 luff/boom ratio, was a product of the CCA rule and the Sea Sprite's 2.90 ratio is much more efficient. It should make the boat easier to sail for a shorthanded cruising crew also as she will handle better under main alone.

The taller rig raises the center of effort slightly but the Sea Sprite can stand up to that quite easily as she has to be considerably stiffer than the 33, thanks to an additional 500 pounds of ballast below and less weight above. Obviously, her cored hull saved enough weight over the 33's solid glass construction that additional ballast could be fitted with no increase in the displacement.

The boats shown in the comparison chart are all ultra-heavy yachts by contemporary standards, but they were considered to be quite normal in their day. The two Luders designs, in particular, would pick up a couple of feet of waterline when heeled down in a good breeze, thanks to their long overhangs. This would reduce their displacement/length ratio (D/L) to a more reasonable 325 and, to a large degree, accounts for their good performance. Indeed, a Luders 33, with Bill at the helm, won Block Island Week, first overall, in the early 1970s against some fierce competition.

The shorter-ended Nicholson and the Seawind II would not fare quite so well and would be further disadvantaged by their low sail area/displacement ratios. These two are really best suited to blue-water sailing, where their heavy displacement will add to motion comfort, and their relatively short sail area will be easy to control and not be a great handicap to performance. This is not to say that the Luders designs are not quite capable of ocean voyaging, of course, as both are solid offshore cruisers.

With sail area/displacement ratios just above 15, the Sea Sprite 34 and the Luders 33 are somewhat undercanvassed by today's standards. The 33, in particular, was designed when 150-percent genoas were the norm and large sail areas were heavily penalized by the CCA rating rule. The Sea Sprite's rig is only a minor redesign with no additional area. If I had a Sea Sprite today I'd rig her with the forestay moved to the masthead. This would increase her sail area to about 555 square feet, a D/L ratio of 16.3 and allow for the use of smaller, more easily handled genoas, with no loss of performance.

Regardless of performance, the Luders 33 and her even prettier sister, the Sea Sprite, will receive admiring glances wherever they sail, whether it's harbor hopping along the coasts or crossing the oceans of the world.

Ted is a Good Old Boat *contributing editor.*

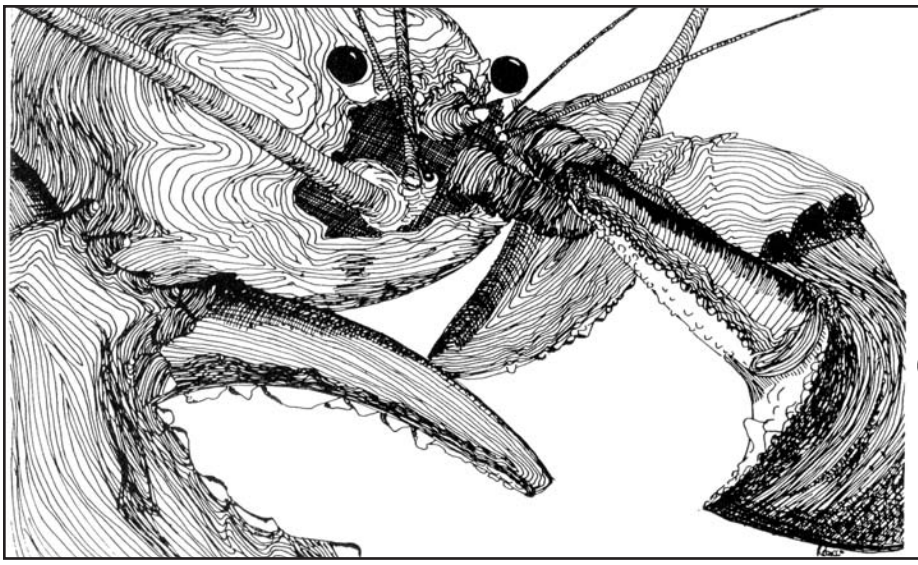
Sea Sprite

Luders 33

Nicholson 31

Seawind II

	Sea Sprite	Luders 33	Nicholson 31	Seawind II
LOA, feet	33.87	33.08	30.6	31.6
LWL, feet	24.0	24.0	24.2	25.5
Beam, feet	10.25	10.0	10.25	10.4
Draft, feet	5.0	5.0	5.0	4.5
Displacement lb.	12,800	12,800	14,750	14,900
Ballast, lb.	5,000	4,500	5,300	5,800
Sail area, sq. ft.	524	524	497	512
Ballast/Displ. ratio	41.7	35.2	35.9	38.9
Displ./Length ratio	413.4	413.4	464.6	401.2
SA/Displ. ratio	15.3	15.3	13.2	13.5
Comfort ratio	32.8	34.2	39.0	36.9
Capsize Screen Fig.	1.75	1.71	1.67	1.68



More from the cruising chef

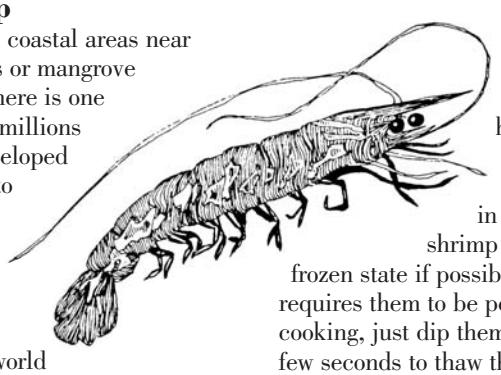
The culinary delights of shrimp, crab, and lobster

Michael Greenwald told us how to collect and cook clams, mussels, and other delights in the November 2001 issue. ***Can the man cook?*** *He's a Paris-trained chef.* ***Does he sail?*** *He's earned his USCG 100-ton master's license (power and sail) and has sailed 55,000 miles, some of which included solo crossings of the Atlantic and Pacific. He is currently out there cruising.* ***What more?*** *Michael was a combat medic in the U.S. Army and U.S. Army Reserves. And he's written two books,* The Cruising Chef Cookbook *and* Survivor. *"Renaissance man" has been an overused term in recent years, perhaps, but we've got to call Michael "well rounded" at the very least. Once again, from* The Cruising Chef Cookbook, *published by Paradise Cay, Michael offers everything you ever wanted to know about shrimp, crab, and lobster but were afraid to ask.*

by Michael Greenwald

About shrimp

Shrimp abound in coastal areas near brackish estuaries or mangrove swamps. Where there is one shrimp, there are millions — and a well-developed commercial fleet to harvest them. Shrimp have become a commodity, like oil or auto parts. There is a world price for them, which varies little from place to place, and bargains should be considered suspect. The local shrimper with his handmade net is getting hard to find and so are fresh local shrimp, which are the pinnacle of fine cuisine. When you find them, buy them.



Fresh or recently defrosted shrimp should be heavy, firm, and translucent; freshly caught shrimp are about as translucent as ice. Their shells are shiny. Old frozen and defrosted shrimp are limp and opaque, the shells are dry, and their tails do not retract.

Selection

Shrimp can be purchased green (whole), headless, or peeled. The head segment contains the guts, which are full of flavor and used in sauces. The head is also the most perishable part of the creature. Try to avoid buying peeled shrimp; they lose moisture in the shelling process.

Buy shrimp that are still frozen, rather than those that have been defrosted, since defrosting results in loss of juice. Cook shrimp directly from the frozen state if possible. If a recipe requires them to be peeled before cooking, just dip them in hot water for a few seconds to thaw the shell, which can then be removed.

Prawns are freshwater shrimp and are less flavorful than ocean shrimp. Wild or river prawns are delicious but more delicate in flavor than ocean shrimp. Cultured or pond-raised prawns are downright bland. Buy them at a really good price or not at all and dominate them with a spicy sauce.

The bigger the size, the higher the cost. Do not buy big, expensive shrimp if your recipe calls for cut-up or cleaned shrimp in a sauce. Buy the cheaper, smaller variety and save, save, save. Big shrimp should be served whole as the centerpiece of your meal. You can also buy just one or two giant shrimp per person as a centerpiece and complete the entrée with smaller shrimp.

Cultured, farm, or pond-raised shrimp

Wild shrimp eat plankton that flavors their flesh with that strong "shrimpy" taste. Farmed shrimp eat commercial "shrimp chow," which results in their indifferent flavor. They aren't worth the price. The most common farmed shrimp is the tiger, with black bands and spots, grown in the Philippines, Ecuador, and Thailand. Shrimp from these countries are usually cultured. Other countries are developing this industry and culturing other varieties. Alas, once these critters have been removed from the package, there is no way to tell what you are getting until you taste them.

The cleaning operation reduces the weight of the shrimp by half. One pound uncleaned (green), yields a half-pound of meat. Shelling shrimp reduces their

Shrimp and potato lasagna

You can use a mixture of crab, scallops, or other seafood in this simple, delicious dish.

Ingredients:

3 large potatoes, peeled, thinly sliced lengthwise
2½ cups raw seafood, chopped
1 cup onions, finely chopped, sautéed
½ cup scallion ends, chopped
Salt and pepper

The sauce

1½ cups Bearnaise sauce
¾ cup dried mushrooms, reconstituted
1½ cups white cheese, grated
½ cup butter or oil
1 cup heavy cream
2 egg yolks

Layer a buttered and oiled baking dish with potatoes. Add a layer of seafood and sprinkle with cheese and onions. Repeat. Mix eggs and cream, pinch of salt and pepper. Pour mixture over all. Use a fork and also shake the pan to get some of the mixture down into the potatoes. Bake at 375° F until bubbling. Cut into squares and serve with Bearnaise sauce over all. Garnish with scallions.

weight by about a third. Six to eight medium cooked shrimp per person are a main-course portion.

Cleaning

To clean shrimp, twist off heads, pull off legs, then remove the shell, prying from the underside with your fingers. Larger shrimp are sometimes shelled by cutting the shell on the dorsal side and slipping it and the legs off in one piece.

We usually devein only jumbo shrimp, but if yours have a pronounced dark gut, slit them along the top with a sharp knife and rinse.

For butterfly shrimp, make a deep dorsal cut from head to tail, leaving a bit of meat to keep the halves together. Press between plates to flatten.

Canned shrimp require no cooking, but should be lightly rinsed in cold water to reduce saltiness. Soaking will reduce their flavor and make them soggy.

Pickled shrimp with onions

This is one of the most delightful shrimp appetizers I've ever tasted. It's so good that it brings pangs of sweet remembrance, even as I write these words. The shrimp should be cooked in the shells. Squid, scallops, octopus, and other shellfish may be added. You can add flavor to this dish by including the shrimp shells with the shrimp boil.

Ingredients:

1 pound small or medium shrimp, peeled and in the shell
1 onion, chopped
2 cups rice vinegar
2 cloves garlic, finely chopped
1 cup celery, chopped
1 cup corn oil
1½ ounces of crab and shrimp boil
1 teaspoon salt
½ teaspoon celery seed

Wrap shrimp boil mixture in two pieces of cloth to confine it in the pot. Boil one pack for 20 minutes in one cup vinegar plus enough water to cover. Add shrimp. Remove from flame; drain and let stand for 20 minutes covered. Remove boil spices; shell shrimp, drain; place shrimp shells in a gauze and add to the mixture. Add other ingredients and remaining pack of shrimp boil. Place in Ziploc bag, refrigerate, and let stand for at least one day before eating. Longer marinating is better. Toss occasionally. Serve with crackers. Pickled shrimp keep in the refrigerator for about a week. They will last longer but taste deteriorates.

Cooking techniques

Baked shrimp: Shellfish are usually baked with thinly sliced or precooked ingredients that reduce oven time and prevent the shrimp from overcooking.

Boiled shrimp: Shrimp are delicate little beasts, and great care must be exercised not to overcook them. Use plenty of water, stock, or shrimp boil (water with prepared spices) to prevent a significant drop in water temperature when shrimp are added. Bring water to a rolling boil; add shrimp, bring to a rolling boil again and remove from the heat. Let stand for a few minutes, drain, and allow to cool to room temperature.

Braised shrimp: Breaded fried shrimp can be dropped into a pan of simmering sauce, such as soy, beer, garlic, or a BBQ sauce and tossed for a few minutes until the sauce bonds with the breading.

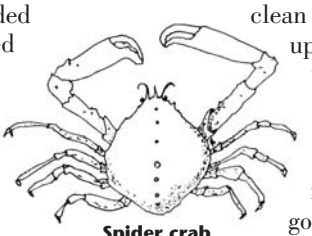
Sautéed shrimp: This means simmering very gently in a sauce. The cooking time for shrimp should be very brief, not more than 10 minutes. Finish the sauce and have it simmering when the shrimp are added. Outstanding sautéing sauces include marinara, curry, butter, and a roux.

Shrimp stock is usually made from the shells, particularly the heads, which are full of flavor. Simmer them for a half-hour in white wine with a bouquet garni and vegetables in a small pot. Drain and reduce by simmering. Use in sauces, thicken into a roux, or cool and add to fresh mayonnaise.

About crabs

Every crab I ever met I "et," and it was delicious! Whether it is a crab from land or from the sea, the fine textured flesh and delicate flavor made it an esteemed culinary delicacy. In my opinion, every crab is delicious, the only question is whether they are large enough to be worth the trouble of cooking and cleaning.

Generally speaking, when it comes to saltwater crabs, the colder and deeper the water, the larger the crab. The huge **Alaskan king crab,** which may exceed eight feet from leg tip to leg tip, is typically taken at the 100- to 150-fathom line. **Blue crabs,** which weigh less than a pound, inhabit shallow bays.



Spider crab

Tiny crabs may be too small to clean but they can be chopped up and cooked with vegetables in a little wine and water. Bring the liquid to a boil and allow to cool. Pour into a narrow bottle and give it a good shake. Loose crab meat will swirl up into the liquid, and the shells will fall to the bottom. Quickly pour off the liquid. The resulting rich broth can be thickened and used as a soup.

Buying crab

Except for "softies," crabs should be purchased either cooked or alive and not merely "breathing." They should start moving as soon as you pick them up or be too dangerous to pick up by hand. If not, they are "dead crab," not a good sign. Dead crabs spoil very quickly.

Crabs cooked alive often break off their own legs and claws as the temperature rises, so kill them before cooking. The easiest way to kill crabs is to force a screwdriver between their eyes and "pith" them by wiggling the screwdriver around, destroying the brain. Crabs may be steamed for 15 minutes in a large covered pot with a half-inch of sea water, or they may be put in cold sea water brought to a boil for 5 to 10 minutes depending on size. After cooking, drain and let the crab cool.

One pound of king crab legs will

feed two. A two-pound whole **Dungeness crab** or a pound of Dungeness crab legs or two cups of cleaned crab meat will serve two.

Some crabs have considerable body meat. Other species have most of their meat in the legs and claws. Even these crabs have a large lump of meat where the leg joins the body. Do not break the legs away from the body. The only way to get the meat is:

1. Remove the upper shell. If you pry the shell forward from the rear, it will lift like the hood of a sports car. Don't be discouraged by your first glimpse of the insides; remember, it's well worth the trouble for that superb flavor.

2. Scrape the crab butter from inside the shell. Crab butter is a yellow paste that adheres to the upper shell inside the "points." It is delicious and may be made into all kinds of pâtés or sauces. Some people mix the fat with butter as a dip for the meat. Delicious.

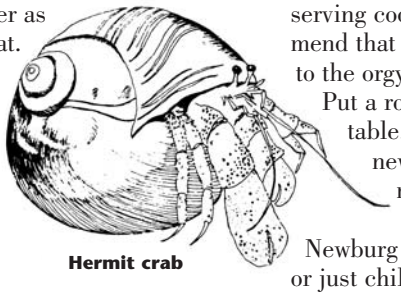
3. Tear off the "tail" and remove internal spongy material. This includes the thin cover tissue, the gills, and all viscera.

4. Most crabs sold commercially are males. If the crab is a female with eggs under the tail, carefully snip off the tail and save; crab roe is delicious raw or steamed. Pickling the eggs in salt for a few days, then rinsing, improves their texture.

5. Break the crab in half along its midline.

6. Separate by breaking the body and legs into sections. The legs and claws may be cracked with a lobster cracker. Meat can be freed from the body segment by tapping it sharply against a bowl.

This is a messy job. If you are serving cooked crab legs, we recommend that only good friends be invited to the orgy as shells fly everywhere. Put a roll of paper towels on the table. Cover the table with newspaper. Cleaned crab meat may also be used in all mixed seafood recipes, Newburg dishes, fritters, devil sauces, or just chilled and eaten with cocktail sauce.



Hermit crab

Woked shrimp

This is a true gourmet one-pot main course that can be served over rice. Like most wok recipes, this dish moves right along, so have everything ready for instant use.

Ingredients:

- 12 shrimp, thinly sliced lengthwise
- 1 cup dried mushrooms, reconstituted
- 3 tablespoons butter
- 2 carrots, sliced thin and long
- 1 cup vegetable of opportunity
- 1 onion (or 3 shallots), julienned
- ¼ cup oil
- 1 chicken bouillon cube
- 1 tablespoon miso (optional)
- 2 hot peppers, thinly sliced
- 6 garlic cloves, crushed
- ¼ cup cilantro, chopped
- ¼ cup soy sauce corn starch
- 1 cup beer

Make a mixture of beer, soy sauce, and a chicken bouillon cube. Use miso instead of soy if desired. You will use only part of this mixture to thicken. Get oil very hot in a wok and add the onion and carrots. Stir fry until carrots get soft. Add butter and additional vegetable, fry one minute. Add beer in dribbles to make steam. Stir frequently until done. Skim vegetables onto a bed of hot rice. Add oil, hot peppers, and garlic to wok. Stir fry over high heat for 2 minutes. Add shrimp and stir fry for 2 minutes. Add mushrooms and stir fry until everything is bubbling. Add corn starch thickener dissolved in water a little at a time and allow to thicken. Do not boil. Pour over vegetables.

Fried shrimp

The secret of tasty fried shrimp is to plunge them into oil that is almost smoking hot. Fried shrimp are usually battered or dipped in a milk/egg mixture and then bread crumbs. A batter can be made lighter and more crispy by adding a bit of soda water or shaved ice. The gas in the soda and the vaporized water from the ice virtually explode in the oil, making the batter crisp and fluffy.

Ingredients:

- 1 pound raw shrimp, shelled
- 1 tablespoon cognac
- 3 teaspoons Worcestershire sauce
- ½ cup seasoned flour
- 2 eggs, beaten
- 2 tablespoons butter, melted
- ½ cup beer

Toss shrimp in cognac and Worcestershire or soy sauce. Combine remaining ingredients to make a thick and sticky batter. Move along quickly as the bubbles in the beer burst upon contact with the hot oil, making the crust fluffy and crisp. Dip shrimp in batter; deep fry in a generous amount of hot peanut oil. Get the oil as hot as possible to start with. Cook until batter browns (two to three minutes). Drain and blot. Serve with sweet-and-sour sauce.

Canned crab meat

Fresh crab in cans must be kept refrigerated. The meat has been cooked but not sterilized. There is usually a refrigeration warning on the lid. Canned crab that requires refrigeration may be used the same as fresh crab; it is quite delicious.

Crab in unrefrigerated tins has been cooked until sterile and is immortal. The texture of the meat is damaged, but some good flavor remains. Treat canned crab with great love and tenderness. Use it in recipes where other ingredients dominate the flavor or where other fresh seafood is added. Always add the crab at the last minute to prevent further flavor loss.

Hermit crabs

Marine hermit crabs often grow to great size and inhabit conch or other large shells. These large crabs are extremely delicious and taste more like lobster than crab. They may be steamed in the shell with the opening toward the top of the pot. As the heat penetrates the shell the beast will usually

Crab delight on toast

As is true with most of our crab recipes, fresh, precooked shrimp, lobster, or fish may be added either to expand the crab, or to create a mixed seafood delight. In this recipe, all ingredients are either precooked or don't need cooking, so the object is to just thicken and heat.

Ingredients:

- ½ pound crab meat, fresh or frozen; or 2 cans (approximately 6 ounces each) crab
- 2 teaspoons butter
- 2 tablespoons flour
- 1 cup milk
- 2 slices stale bread, cubed
- 1 cup mushrooms, sliced
- ½ teaspoon crushed celery seed or celery salt
- 1 teaspoon lemon juice
- ½ cup dry white wine
- ½ cup Gruyere or Swiss cheese, grated
- Paprika, salt, pepper

Make a béchamel sauce (a roux, thinned with milk). Add all other ingredients except crab, cheese, and paprika. Simmer 5 minutes over low heat, stirring frequently. Do not boil. Reduce heat until liquid just steams. Add crab; stir, sprinkle with cheese, then paprika. Warm until cheese melts. Serve on toast spread with anchovy butter (anchovy paste and butter).

Spicy crab cakes

We use about a half-cup of jerk sauce in this recipe, which is a Jamaican spice. You can use chili-pepper paste, hot sauce, pepper sauce, or whatever you like. Add to mixture slowly until you get what you want.

Ingredients:

¾ pound crab, cleaned and cooked
1 cup bread or cracker crumbs
1 tablespoon baking powder
juice of 1 lime
2 tablespoons honey
1 teaspoon salt
2 eggs, beaten
1 large onion, grated, thoroughly squeezed
1 cup red or green pepper, finely chopped
½ cup Jamaican jerk sauce, or 2 teaspoons chili paste

Combine ingredients, which should be almost as thick as hamburger. Make into balls about 1½ inches in diameter. Flatten into cakes in the pan. Sauté over medium heat in a little olive oil or butter. Remove when browned and blot. Serve with cocktail sauce, tartar sauce, or mustard and honey.

abandon it. If the crab remains inside the shell, pull it out gently as the meat is in the tail. Large hermit crabs (in their shell) should be steamed in a small amount of water for about 15 minutes. The cooking time varies depending on the size of the shell, but it is better to undercook the crab initially. It can then be removed from its shell and steamed to completion.

Sauce choices

1. Canned cream of tomato soup with a dash of sherry and lemon juice.
2. A sauce béchamel blenderized with a roasted red pepper, Parmesan cheese, lemon juice, thinned with milk.
3. A soy sauce, garlic, ginger, mustard powder, and beer thickened with a little corn starch and garnished with scallion ends.

The noble lobster

Lobster species differ greatly in appearance and may not be closely related to one another, but they all taste great! The so-called **American lobster** has claws. It varies in color from green to dark blue. A meaner, more voracious critter is hard to find. They fight each other to the death for territory, and the winner usually consumes the loser!

They eat their own young and give no quarter. They would probably be glad to eat you if they could. In the Northeast, American lobsters are hatchery-raised until they are about three quarters of an inch long, then released. Large numbers of male lobsters are caught during the summer months and stored in ponds for sale during the winter.

The **mole lobster**, a clawless relative of the American lobster, looks more like a crab with a fat abdomen. It is a cold-water species found on or around weed beds, usually near isolated islands. Many are found in the Azores, while some have been netted off the Shetlands, Greenland, and Iceland. Mole lobsters seem almost as broad as they are long since up to 60 percent of the creature's weight is a huge hunk of tail meat.

There are several species of clawless, warm-water **spiny or rock lobsters**, also called **crawfish**. Do not confuse **crawfish** with **crayfish** (sometimes called **crawdads**), which are a smaller, less delicious freshwater species. Another freshwater river shrimp, which may run up to eight ounces, is called a **langoustine**. It is also tasty but more bland in flavor than saltwater shrimp.

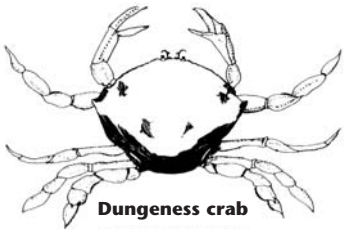
Unlike the aggressive American lobster, spiny lobsters are usually timid. During the breeding season they lose their instinctive fear, often crossing shallow grass beds in great numbers — boldly advancing en masse, antennae waving. Spiny lobsters grow about the same size as American lobsters. They can be found in tropical seas all over the world. Fresh spiny lobsters are just as delicious as fresh American lobsters.

The Mediterranean Sea and the Indian Ocean are home to several species of clawed, shrimp-like crustaceans. Their size, however, never exceeds one-half pound; normally they are only four to six ounces. Their claws are long, thin and of equal size. They are tasty like shrimp but do not share the absolute gastronomic pinnacle with American and spiny lobster.

Selecting fresh lobster

A fresh lobster must be alive and still have a little fight left in him, otherwise he is what the fishmonger calls "still breathing." If the fishmonger sees you looking at a lobster for signs of life, he will give it a shake, knowing its primitive nervous system will still react, even though the lobster is dead. Dead is unacceptable because it begs the next question: how long dead?

Female lobsters are more succulent than the males and may contain delicious roe. The females are at their peak just before the egg-laying season when they contain roe. Lobster connoisseurs know this and often ask for females when they dine out. As a result, most of the females go to the better restaurants. It is rare indeed to find a female lobster for sale, but lobster aficionados always search for them. Lobsters may be sexed by examining their swimmerets, small finlike appendages on the underside of the tail. The males have narrow swimmerets.



Dungeness crab

Continued on Page 72

Crab wonton

A wonton is a thin wheat-flour noodle. Wontons are usually "stuffed," two wontons are glued together around something tasty using flour and water as a paste. Frequently the "something" is fried pork in a spicy sauce. In this case the something is a delightful combination of crab, sautéed vegetables, and cheese. Makes eight wontons, serves two. Each wonton requires only one tablespoon of stuffing.

Ingredients:

16 wonton shells, about 4 inches
1 cup cooked crab meat
½ red pepper, peeled, julienned
1 small onion, julienned
2 Serano chilis, finely julienned
8 cloves garlic, blenderized
½ cup white wine
4 tablespoons oil or butter
2 tablespoons sherry
¼ pound sharp cheddar cheese, grated
Capers
Salt and pepper

Sauté the vegetables in butter and oil for a few minutes. Add the wine and simmer five minutes. Pour into a mixing bowl. Add the crab, capers, and cheese. Toss lightly. Place about one heaping tablespoon of mixture in center of a wonton. Brush wonton edges with flour paste. Cover with another wonton and press closed. Boil in salted water until wonton becomes translucent and floats.

Three blind mice

An easier way to thread a new line through your mast

by Niki Perryman

Threading a new electrical cable or halyard down the inside of a mast is tricky — especially if you have internal halyards and cables for it to tangle with along the way. The usual method is to create a "mouse" by running a lead sinker down on the end of a length of fine line (heavy fishing line will do) then using this mouse line to pull the new cable or halyard back up. In theory, if you make sure all internal halyards are tight before you start and heel the boat a little, you can slide the sinker down the lower side without having it snag on something en route.

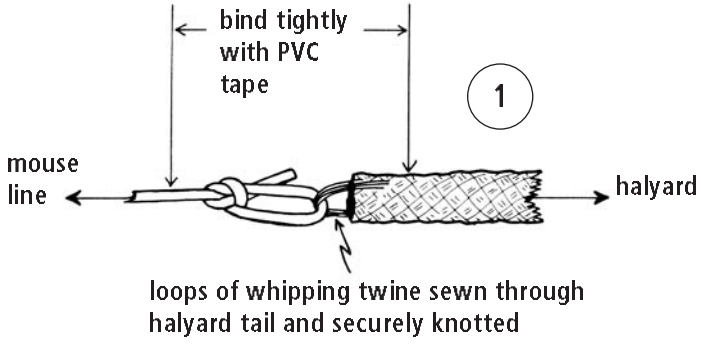
But life's rarely so simple. If a passing powerboat throws up some wash while you're in the middle of the operation, the sinker can swing away from the edge and create havoc around your halyards before it settles back down again. And how can you tell if you have a wrap or two up there? Chances are you'll only find out when you need to get that sail down in a hurry and the halyard jams solid.

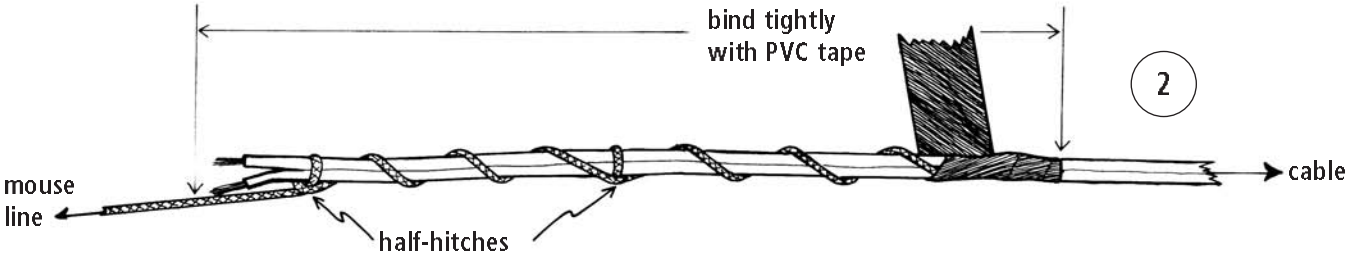
A friend recently showed us an alternative. He attached a steel nail instead of the sinker to the end of his mouse line, and he used a strong magnet on the outside of the mast to coax the nail down the inside. Because the magnet held the nail against the aluminum all the way down, movement of the boat was no longer a problem. The magnet method can also be used on a horizontal (unstepped) mast or a hollow boom. I should point out that our friend's mast was a simple one without many fittings; if yours is crammed with hardware and you find the nail snags on fastenings, you may have to custom-make something more streamlined to replace the nail. Try bending either end of a small piece of steel flat-bar to make a sled shape, for instance.

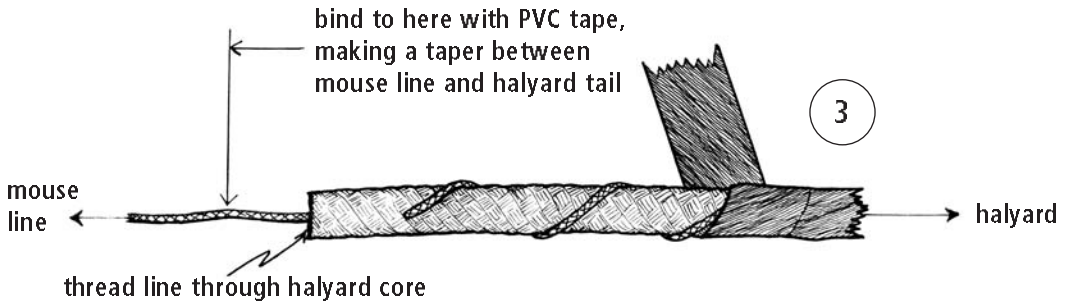
Masts whose electrical cables are held captive by an internal conduit present an additional problem. Obviously, neither the pull of the magnet nor the weight of the sinker will be sufficient to draw the mouse line down through a tightly packed conduit. The easiest solution is to disconnect an existing wire from the junction box nearest to the foot of the mast and securely attach two lengths of mouse line to the end of it. For this exercise the line needs to be fine but strong, so it won't break if you give it a good yank. A 1.5-mm nylon or polyester braid is ideal. Pull the wire out through the top of the mast. Leave one of the mouse lines attached to it, but connect the other mouse line to the new wire. One at a time, draw both the old and new wires down through the conduit by pulling on their respective mouse lines.

The success of all three methods — particularly the last — depends on how securely you attach the mouse line to the cable or halyard. If your halyard has a looped tail (most professional riggers splice one in the end for this very purpose), tie a bowline through the loop and bind the knot tightly with PVC tape. In a couple of minutes you can make a medium-strength, temporary looped tail *(see Diagram 1)*.

For electrical cables, wire halyards, and rope (where you need a stronger attachment than a looped tail), form a half-hitch approximately 18 inches from the end of the mouse line and slide this over the end of the cable. Keeping tension on the half-hitch, spiral the free end of the mouse line up the tail of the cable, forming additional half-hitches every 3 or 4 inches.







Continue spiraling until you run out of length, then tightly bind from the end of the mouse line to the end of the cable with PVC tape, so the joint is as streamlined as possible *(see Diagram 2)*. This is also a good way to marry steering cables to a mouse line when checking or replacing them.

If you're trying to work a rope halyard through a narrow masthead sheave and find the joint I've just described to be too bulky, use a skewer or marlin spike to thread the mouse line up through the core of the halyard, exiting about an inch from the end. Spiral the remaining foot of line tightly around the halyard and bind with PVC tape *(see Diagram 3)*.

Niki Perryman and Jamie Morrison left Australia in 1992 to cruise in their 35-foot Lion-class sloop, Siandra. *After crossing the Indian Ocean, they spent several years exploring Europe and the U.S. East Coast . . . heading south this winter just ahead of the cold weather.*

Swamp sounder:
Simple (not too elegant) gauge for your holding tank

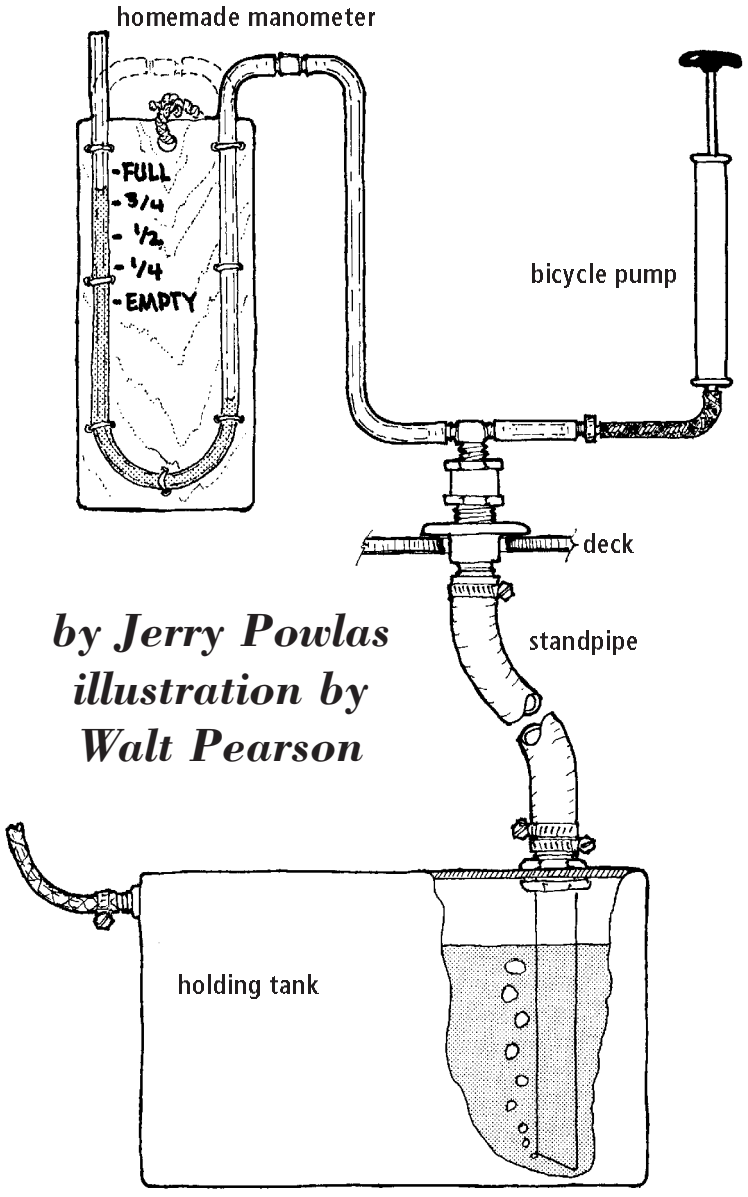
by Jerry Powlas
illustration by Walt Pearson

Our boat was built with a holding tank, but there was no provision made for determining how full it is. In the early years, we either pumped out too often, at some increased expense, or not often enough. We wanted a way to tell how full the tank was.

I knew our tank had a standpipe that entered the top of the tank, went to the bottom, and was used to empty the tank at a pump-out station. This is fine way to design a holding tank since there are no bottom exits to cause problems.

I devised (cobbled up actually) a manometer that could be attached to the tank. I used a basketball pump to pressurize the standpipe. As the pump increases the pressure in the standpipe, the level of sewage in the standpipe goes down. Finally, the level reaches the bottom, and adding more air simply blows bubbles in the sewage. It's not that I wanted to blow bubbles in the sewage; I wanted to know the maximum pressure in the standpipe just before that happens. The manometer tells me the pressure in terms of inches of water column. The maximum pressure that can be achieved is a linear function of how full the tank is.

A manometer is a simple, but elegant, pressure gauge. When there is no pressure difference across its ends, the level of water in the U-tube is the same on both sides. When one side has more pressure than the other, the level drops on that side and rises on the other. The difference in height between the two columns is an expression of the difference in pressure between the two sides. The actual calibration to read pressure in familiar units is tedious and, in this case, unnecessary. Our manometer is simply a piece of scrap plywood with some clear PVC tubing lashed to it. We calibrated it by pumping out the holding tank to get an empty reading, and then filling the holding tank with water to get a full reading. We marked both on the plywood.



This method makes the assumption that sewage and water have the same specific gravity (weight for a given volume), which is not strictly true, but for this kind of work they are close enough. All the parts for this device can be purchased in a hardware store. The pumpout fitting connection is a PVC threaded pipe reducer. The rest of the parts are in the nearby bins. You need a threaded pipe-to-barb fitting, a barbed tee, a barb-to-barb fitting to close the ends of the manometer when it is not in use, a length of PVC tubing, and some lashing and scrap plywood. I don't have to tell you to use a cheap pump of some sort; don't blow into this thing.

This method will work with most solid tanks because pumpouts need a bottom exit of some sort. Don't do this with flexible tanks. If you have a very shallow tank, you can angle one leg of the manometer to 45 or even 30 degrees from vertical and get better resolution. If you need to resort to this, you will want to mount a cheap level on the board to obtain satisfactory accuracy.

While not high-tech fun exactly, a swamp sounder will prevent you from leaving the marina for a weekend with a nearly full holding tank.

Jerry is Good Old Boat *technical editor. We know we told him not to write about heads and such matters anymore, but as co-founder of this publication, he pretty much does what he wants.*

Clamping down:
A useful way to remove frozen hose

by Niki Perryman

Disconnecting a plastic hose from the through-hull fitting it has shrunken onto over the years is enough to make anyone hot under the collar. As you pull on the hose, you stretch the plastic lengthwise, which slightly reduces its diameter and increases its grip on the through-hull.

If it's time to replace the pipe, you can just hack it off. But if you'll need to reconnect it later, try this hose-clamp trick. It's particularly useful when the skin-fitting in question just happens to be in the bottom corner of your most inaccessible locker, and you can only reach it with one hand at a time.

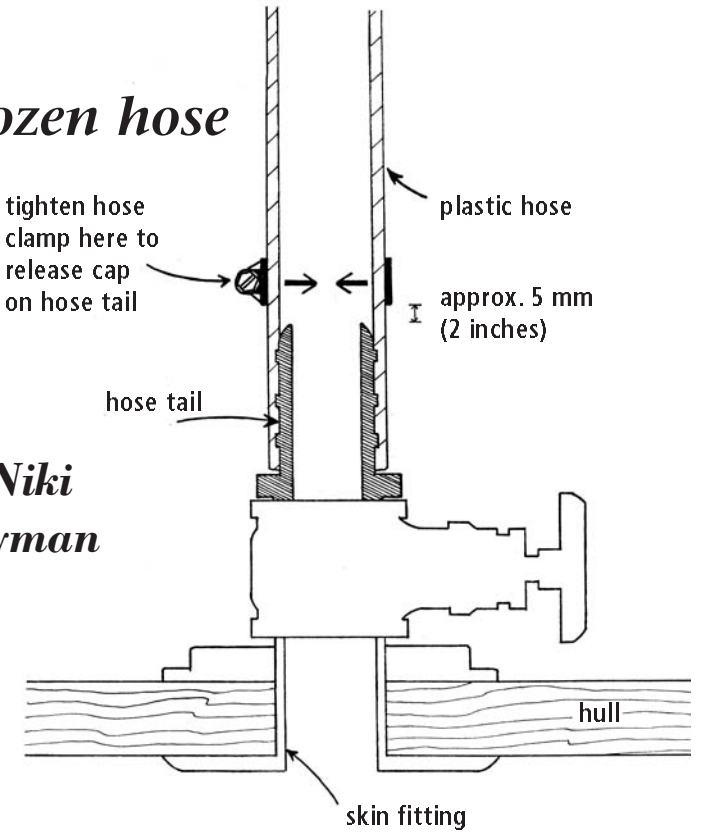
Having loosened the hose clamp that secures the pipe to the skin-fitting, slide it along the hose until it is approximately 2 inches clear of the hose tail. Now tighten the clamp, compressing the hose until the end of it begins to flare away from the hose tail. Work the hose off the tail by gently rocking it from side to side. (Be careful not to use too much force, as you could break the through-hull's seal to the hull.)

If the hose still refuses to budge, loosen the hose clamp, make sure the through-hull is closed, and pour hot water down into the pipe to soften the plastic. Drain the water off, and try the hose-clamp trick once again.

Finally, if all else fails, split the hose lengthwise with a utility knife. Start at the skin-fitting end, and cut only a couple millimeters at a time. Try to work the hose off after every cut, and with a bit of luck you'll succeed without damaging more than a short section of the pipe.

To make life easier, if you're fitting a hose clamp in an awkward location, try using one with a hexhead-type screw, so that you can adjust it with a socket wrench instead of a screwdriver.

Niki's bio appears on Page 55.



Cockpit light:
Why not a solar garden light?

The sailing club we belong to has limited dock space. Therefore, the majority of us have our boats on moorings. This is not normally a problem, but the bay is small and filled with boats, so rowing to our mooring on a moonless night can be challenging.

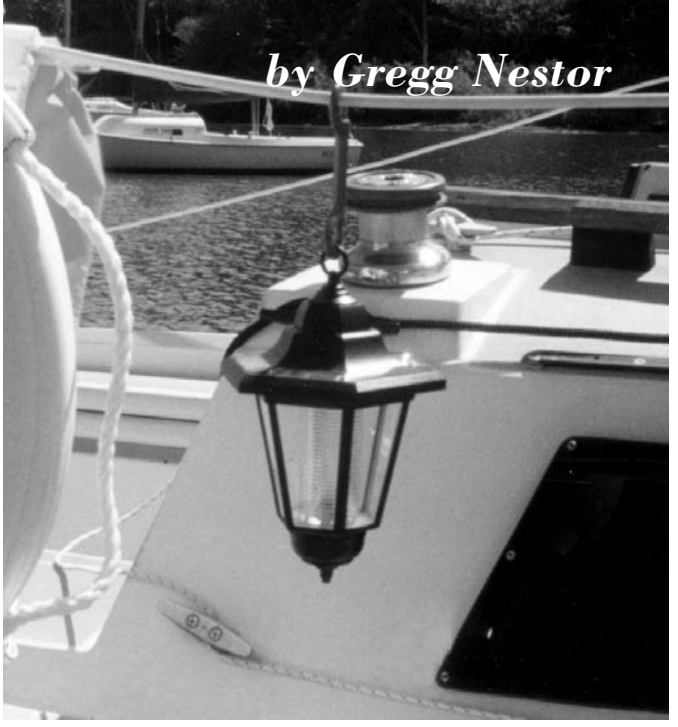
I decided that some type of light on my boat would make night identification and boarding much easier. Having only one battery and relying solely on my motor (which I use infrequently) for charging, I didn't want the added battery drain. To add night illumination in my cockpit without any wiring or battery load therefore, it had to be solar-powered.

A quick trip to the local discount store (not marine store) provided what we needed . . . a solar-powered garden accent light! There were literally a dozen models to choose from. But a hanging model, along with a double snap hook, made installation instantaneous.

The unit is designed for outdoor use. Sunlight charges the replaceable AA nicad battery during the day, while the light-emitting diode (LED) turns on automatically at night by means of a built-in photoelectric cell.

Compared to standard solar lights, the new LED technology in these units provides longer run time. Our unit has multiple LEDs that afford brighter light output. It also has a lens that disperses the light evenly.

While sailing, we clip our light to a lifeline, where the sunlight charges the battery. Once at our mooring, we clip it to the end of our boom (more specifically to a grommet in our sail cover) where it's ready to do its work.



With the addition of our new solar light, night identification and boarding of our sailboat is easy. As an added bonus, when staying aboard at night, we have a cockpit "night light" for less than $25.

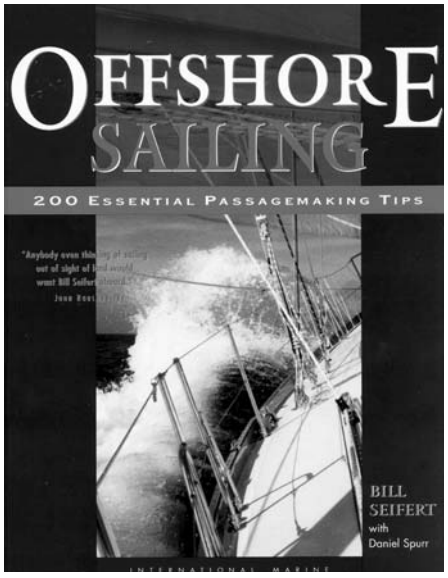
Gregg and his wife, Joyce, sail their O'Day 222, Splash, *out of Bush Bay on Pymatuning Reservoir, which borders Ohio and Pennsylvania.*

Book reviews

Add a few items to your to-do list

Offshore Sailing: 200 Essential Passagemaking Tips, by Bill Seifert with Daniel Spurr (International Marine, 2002; 240 pages; $27.95.)
Review by Steve Christensen, Midland, Mich.

Part of the joy of sailing is messing about with our boats — all those little improvements that make sailing and living aboard easier, safer, and more fun. Having read a number of books containing hundreds of improvement tips, and just about everything written by the Dashews and Nigel Calder, I wasn't really expecting to encounter anything I hadn't seen when I opened Bill Seifert's new collection of tips, *Offshore Sailing: 200 Essential Passagemaking Tips*. But I was wrong. By the time I finished I had Post-Its on a dozen pages and at least six new projects on my to-do list.



The emphasis of this book is on setting up a boat for offshore passagemaking. So while you won't find advice on how to keep birds from pooping on your deck, you will learn interesting and effective ways to secure the deck and hatches. Like how to modify your dropboards to allow you to lock them while on deck or below (Tip #70). Or how to keep a jib sheet from getting wedged under the corner of the forward hatch by installing toilet bumpers on the hatch-frame corners (Tip #10 in the book and #3 on my to-do list). Or that cockpit speakers should be mounted inside Beckson deck plates so you can install the plates and seal the holes during foul weather. If you have hatches with reversible hinges, did you realize the easily removable hinge pins could be an invitation to thieves? Replacing the hatch pins with bicycle locks solves the problem (Tip #21).

In the chapter on rigs and sails there is a description of how to rig a flag halyard so you can hoist a radar reflector without having the side of the reflector chafe on the halyard (Tip #54). If your boom has tack hooks for mainsail reefing you will be interested in Tip #51, where Bill shows how to keep the hooks from snagging on the sail by covering the hooks with a loop of fuel line hose (also on my to-do list).

How many sailors have dutifully tied a softwood plug near each through-hull in case a fitting fails? The idea behind this is that the softwood plug will swell when wet, and provide a watertight seal after driven home. But if you store the plug near the fitting, where it will probably get wet, it can swell before being used. Better to store the plugs in a watertight bag (Tip #151). And finally, as every reader of *Good Old Boat* already knows, the way to secure the toilet seat and keep it firmly in place when used while underway is to screw chocks into the underside of the seat (Tip #79 and *Good Old Boat*, January 2001).

There are also chapters on boat design, safety gear, and suggested spare parts — all of which are good, but perhaps not as original as many of the tips, which are the real gems of the book. It will be a rare skipper indeed who doesn't come away from reading *Offshore Sailing* with a few new items for his own to-do list.

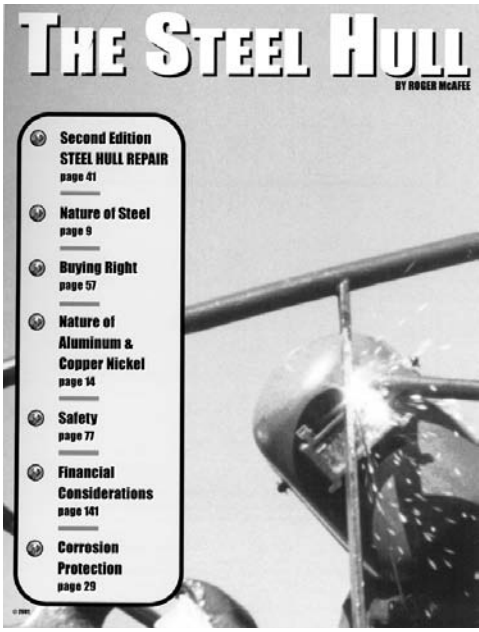
Building/repairing a steel hull yacht

The Steel Hull, by Roger McAfee (Nighthawk Marine Ltd., Vancouver B.C., Canada, 2001; 148 pages; $29.95, U.S., $34.95 CDN.)
Review by Lynn King, Vancouver, Wash.

"Do you really want to build that first metal boat . . . or buy a used one and repair it?"

Roger McAfee gives the would-be first-time owner, boatbuilder, or repairer of a metal boat an insight into the project in store. This is not an overly detailed "how-to book," although certain aspects of metal boatbuilding and repair are covered. Rather, it is introductory in nature, meant for the would-be builder or repairer.

The author starts with a metal analysis of steel, aluminum, and copper-nickel. Next he asks the reader to consider whether this is a "family project" and discusses important considerations regarding the vast scope of a boatbuilding or repair project. He also discusses tools and equipment for the project and the relative costs of new and



used tools, giving the first-timer a guideline for acquiring the minimum equipment necessary.

One chapter should cause first-timers to consider attending a welding/burning training course before beginning their projects. Another assists with the choice of which project to pursue. It acquaints the reader with cutting open the steel hull and patching it. Roger stresses getting a thorough survey of the steel hull and discusses methods of determining metal thickness. He goes on to patching holes in the hull and the different techniques for doing so.

One marine designer's steel boat design is included to give the prospective builder a feel for the planning and building of a steel-hulled vessel. This is only one of many other sources of designs available.

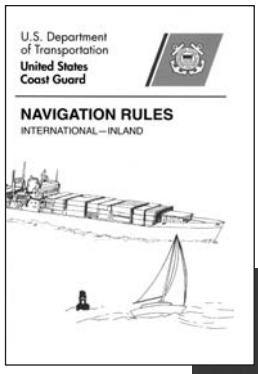
After all this, Roger zeroes in on financial considerations. He suggests that comparative costs must be made to determine how best to approach a boatbuilding or restoring project. As he points out, "Research can result in substantial savings, not only in building a boat, but also in fitting out." He lists some books and sources to be pursued by the interested metal-boat enthusiast and reader.

The Steel Hull qualifies as a worthwhile, easy-to-read introduction to metal boatbuilding and repair. It aids and directs the first-timer in the quest for a metal boat to go cruising in. "To build from scratch . . . or buy and repair?" That is the question that author Roger McAfee asks — and helps the reader answer for himself.

Reviewer Lynn King is president of the Metal Boat Society, <http://www.metalboatsociety.com>.

Rules and almanac: All that's needed

Navigation Rules International-Inland (Paradise Cay Publications, 2001; 216 pages; $10.95.)
Review by Merrill Hall, Yarmouth, Maine.



Everyone talks about the rules, but nobody does anything about them. If you're about to head to sea and you haven't memorized all the rules, lights, sound signals, and dayshapes, you may be in for some exciting times. As our coastal waters get more crowded, relying on pure luck may not be in your best interests.

I reviewed *Navigation Rules-Rules of the Road for Inland and International Waters* (Paradise Cay Publications, 2000) for the March 2001 issue of *Good Old Boat* and was not favorably impressed with its lack of illustrations and the manner in which the International and Inland rules were separated. I compared it to the *USCG Navigation Rules International-Inland* and found the Coast Guard version to be a more useable book while costing only a few dollars more.

This new edition from Paradise Cay Publications is a major improvement. It's an exact copy of the entire USCG book with all illustrations and includes all corrections presented in Notice to Mariners up through July 19, 2001. The color illustrations are slightly less vivid but not to the extent to cause confusion. The publishers have also added a few features that readers may find valuable.

The ideal rules-of-the-road book should serve equally well for study and quick reference. In addition, if your boat is 12 meters (39 feet) LOA or greater, an updated current copy of *The Rules* must be kept on board to meet the Inland Rules requirement. But how do you keep it current? No problem here. On the preface page, Paradise Cay has added detailed instructions on how to log on to the NIMA Web site and how to find the information to keep *The Rules* up to date. I checked the directions, and they work perfectly.

Paradise Cay's annotated table of contents is substituted for the USCG contents and most readers are likely to find it easier to locate specific rules. I personally like the notation for Rule 17(b) that reads, "*In extremis* cause for maneuver." I didn't know that most boat skippers are conversant in Latin. Unfortunately, the notation for Rule 18 (Responsibilities Between Vessels) refers to "pecking order." Having had a flock of chickens, I know that responsibility between vessels has nothing to do with the big pecking the small. It's a function of which vessel has more options to maneuver in avoiding a collision. Aside from those few minor things, the annotated contents may be a valuable timesaver for most readers.

This new edition is all that is needed for study and quick reference and, when regularly updated, should serve for many years to lessen the occurrence of certain exciting events.

Nautical Almanac 2002 Commercial Edition (Paradise Cay Publications, 2001; $22.50.)
Review by Merrill Hall, Yarmouth, Maine.

This is the yearly presentation of data used for astronomical navigation at sea. Except for 27 pages of ads, it contains the same data and format as the edition produced by Her Majesty's Nautical Almanac Office (UK) and the Nautical Almanac Office of The U.S. Naval Observatory. The inclusion of advertising results in a cost savings of approximately $10 when compared with the U.S. government edition.

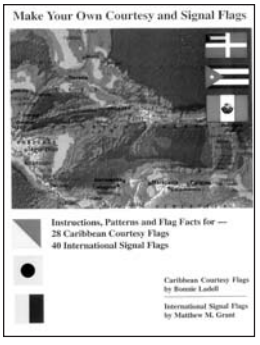
I reviewed Paradise Cay's *Nautical Almanac 2001 Commercial Edition* for the March 2001 issue of *Good Old Boat* and found that poor printing quality had obscured certain critical data. This new edition has a marked improvement in print quality, with all data readable, and is quite acceptable for serious celestial navigation.

Book reviews

What you need to make your own courtesy and signal flags

Make Your Own Courtesy and Signal Flags: Instructions, Patterns, and Flag Facts for 28 Caribbean Courtesy Flags and 40 International Signal Flags, by Bonnie Ladell and Matthew Grant (Sailrite Enterprises, Inc. 800-348-2769; 2001; 64 pages; $19.95.)
Review by Theresa Fort, Titusville, Fla.

Are you a sew-it-yourself boater considering a cruise through the Caribbean? Or have you always wanted a complete set of international signal flags but haven't the money to buy them or the energy and time to create your own patterns? Making your own courtesy and signal flags can be a challenging but rewarding part of the cruising lifestyle. Calculating the correct size and shape of each flag, copying and enlarging the sometimes quite complicated designs, and finding the easiest way to sew all those colorful pieces together to create a correct and usable flag can give the creator a great sense of accomplishment and . . . a huge headache.



When it comes to Caribbean courtesy flags and international signal flags, Bonnie Ladell and Matt Grant are your next pain relievers. They have just written a simple and concise book with all the patterns and designs needed to create 28 Caribbean courtesy flags as well as a complete set of 40 international signal flags.

The first section of the book, written by Bonnie Ladell, is focused on the making and flying of courtesy flags. It includes complete instructions and patterns for making each Caribbean country's courtesy flag as well as information on what the colors and designs of each flag mean to their countrymen. She has included important information on displaying the Q flag correctly when checking into a foreign port as well as information on how to fly courtesy flags. Color pictures of each country's flag are provided as a helpful guide to correctly positioning the designs and using the correct colors. Though the designs and pictures used in this part of the book could be clearer and of better quality, the information and instructions provided appear to be accurate and easy to follow.

The second section, by Sailrite's Matt Grant, includes a complete and efficient layout of each required color and the size and shape of each pattern piece for a complete set of international signal flags. General instructions and tips on sewing the set of flags guide you through your work. Along with the helpful color pictures of each flag, an explanation of the meaning of each flag, both internationally and when used in yacht racing, is included. You will also find information on how to fly these flags using wooden toggles.

At times, I would have chosen different construction techniques. In some instances, I would rather use a one-pattern piece with a zigzag stitch around the edges, and cut the back side away to allow the correct color to show on both sides rather than sew a pattern piece to both sides. Or, by taking a more quilting type of approach, I find it easier to sew strips of colors together, cut those strips to the proper size, and sew them to attain the proper patchwork design instead of appliquéing one color onto another (and having to do this on both sides) as in the checkered "N" signal flag.

Still, Bonnie and Matt have come up with easy-to-follow instructions, plus measurements and patterns to use that will greatly reduce the workload for the sew-it-yourself boater heading to the Caribbean. And, the spiral binding allows the book to lie flat while tracing the designs and following the instructions. Now that's pain relief!

Simple boatbuilding: a look into the past

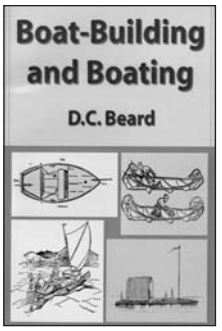
Boat-Building and Boating, by D. C. Beard reprint of 1911 edition (Dixon-Price Publishing, 2001; 186 pages; $15.99.)
Review by Merrill Hall, Yarmouth, Maine.

"Don't you *ever* go out in that thing again!" So screeched my mother that spring day in 1949 when I first paddled my recently constructed "umbrella canoe" and returned soaked and sniffing. My grandfather had shown me the book months before and construction soon began. *Boat-Building and Boating* filled this 12-year-old with dreams of adventures that any boy of my age and talents could make reality.

First published in 1911, this is a collection of boat designs with building instructions that require only the most basic tools and skills. The book begins with a log raft and ends with the Jackson Glider, "a cheap and speedy motor-boat." The designs are simple and not very detailed, but enough information is given to get started, with the reality that one would have to "wing it" once construction was under way.

In my opinion, the author was a writer and not a boatbuilder. This is indicated by his caulking instructions; "The bottom boards are to be so planed that they leave V-shaped grooves on the inside of the boat to be filled with candlewick and putty." This method has been unacceptable since the first carvel-planked boat, so constructed, sank without a trace. But aside from some technical difficulties, there is much good reading here.

Along with the section on building a birch-bark canoe, most readers will probably favor the landlubber's chapter. It has much information for the novice, including nautical terms and how to sail adding some useful instructions for making boating togs, from "winter woolen underclothes" — truly a 1911 fashion statement. Unfortunately, the illustrations are not well reproduced and have lost much of their original clarity. Dixon-Price Publishing should



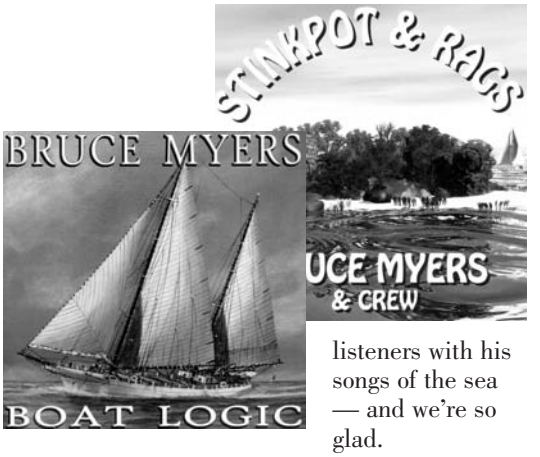
have spent their energies on upgrading the artwork instead of editing "spelling and punctuation to reflect modern usage."

This reprint of *Boat-Building and Boating* is not a good choice for practical use today and should not be compared with modern boatbuilding books. Its value lies not in its detail, but in its overall scope and content, as viewed almost 100 years since its first printing. We see here the birth of boating at its most affordable level and a look at life in the early 1900s when, without television and video games, young people were helped to realize their dreams of outdoor adventure.

My umbrella boat disassembled itself while frog hunting that summer in 1949 and its stringers were converted to clothes poles. Mother was delighted.

What's logical about sailboats?

Boat Logic, a nautical music CD by Bruce Myers (BRM Records, 2002; $14.99; <http://www.BoatLogic.com> 410-477-5289.)
Review by Karen Larson, Minneapolis, Minn.



What could be more *illogical* than a love of boats, of sailing, and of the sea? No one knows this better than Bruce Myers, a Chesapeake Bay sailor and the owner of a 1978 Cal 2-27, named *Getting There*. Bruce's songs about these issues express the sailor's dilemma as well as any I've heard. To this he adds the ultimate illogical act: the not-for-profit life of a nautical balladeer. He admits to all these weaknesses but, like any addict, he is powerless to cease doing what he loves. And so Bruce continues to thrill his listeners with his songs of the sea — and we're so glad.

Boat Logic is the second expression of Bruce's need to be near the water and on boats. The first, *Stinkpot & Rags*, was produced in 1997 and is also available for $12 as a CD and $10 as a cassette.

What's boat logic? Bruce's songs tell you it's the dream to get a boat, sell everything, and head off for the tropics . . . it's the need to have a boat just six feet bigger than the current one . . . the longing to go out of sight of land. In Bruce's case it's also the need to keep on singing, even if there doesn't seem to be any future in it. (Although — perhaps in Bruce's case because he's quite good at what he does — there ***is*** a future in it. If that's the case, then perhaps there is a logic in these illogical boaters' dreams and desires.)

I have a favorite song on each of Bruce's CDs. Well, a couple of favorites actually. Before the creation of *Good Old Boat* magazine, Bruce identified something about good old boats that strikes a chord with me. It should be the *Good Old Boat* theme song, in fact. Called "Old Boats," this song states: "Old boats have character, New boats do not. Old boats have stories in them; Old boats should not be forgot." Those words on his first CD won my loyalty.

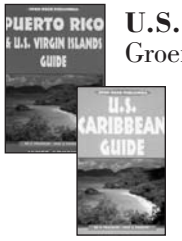
His title song on the new release makes you (even against your will) sway with the calypso beat: "He's got that gleam in his eyes and he can't look away; It's not the first time he's fallen so hard in just days . . . " Think he's found a woman? Think twice. This is about another kind of "boat-hook." The ode to his boating mentor, Captain Dan, a skipjack skipper, is beautiful, too.

Bruce's style ranges from the soft tropical calypso to rock and everything in between. A word of warning: Bruce can get you to do anything . . . even buy a goat (yes, *goat*). Get the CD; you'll soon agree with me.

Janet Groene writes of life afloat

Author Janet Groene (pronounced GRAYnee) married a pilot and stayed home writing articles and books while he flew . . . until the two sold their home and belongings and set sail for the Florida Keys and Bahamas on a 29-foot sloop (a Botved LA Cruiser built in Copenhagen in 1960). After a couple of years they agreed to store the boat during hurricane season and continue their travels during that time by RV. Janet and Gordon published a large number of books on camping, life afloat, RV living, and aviation. Janet became an expert in galley matters: life without refrigeration, provisioning for life afloat, keeping it simple, and more. Janet's first book was *Cooking On the Go,* now out of print.

These days the Groenes are homeowners once more, based in Florida. They travel worldwide as a writer-photographer team, documenting their travels on boats of all sizes — from day boats, canoes, and bareboat charters to houseboats, river barges, and "loveboats." They hold the National Marine Manufacturers Association Director's Award for boating journalism. Send them comments and questions through their Web site at <http://www.GordonandJanetGroene.com>.

	Price	Quantity	Extended price
 **Living Aboard** – A guide for all who ponder turning a boat into a home. Divided into practical sections covering everything from choosing your boat to the equipment needed, unforseen costs, personal belongings, medical issues, mail, kids, pets, tools, safety, and security. *(See review, November 2000.)* – $24.95.	$24.95	____	_____
 **The ABCs of Boat Camping** – While meant for owners of small boats who are tempted by the prospects of camping or family overnighting on or near the water, this book works for anyone who enjoys outdoor living. – $16.50.	$16.50	____	_____
 **Creating Comfort Afloat** – Make your boat comfortable and beautiful. No interior design book, this one focuses on sound deadening, choosing the right materials for the project, lighting, and tips and hints for all your spaces from the bridge to the bilge. – $24.95.	$24.95	____	_____
Cooking Aboard Your RV – Making camp cookery fun: 300 time-tested recipes. – $14.95 (if available).	$14.95	____	_____
 **U.S. Caribbean Guide** – Longtime Caribbean sailor, Janet Groene presents a thorough guide to U.S. parts of the Caribbean: Puerto Rico and the U.S. Virgin Islands along with a brief excursion to the British Virgin Islands. – $14.95 (if available).	$14.95	____	_____
Puerto Rico and the Virgin Islands Guide – Not a cruising guide, this book will lead you to dining, outfitters, shopping, and sightseeing on shore. A companion piece for the *U.S. Caribbean Guide*, listed above. – $14.95 (if available).	$14.95	____	_____
	Subtotal		_____

(carry over to Page 65)

There's more. Some of Janet's best boating books have become collectors' items. Ask BookMark (Mark@goodoldboat.com/ 763-420-8923) about the following, which are out of print but available at used-market prices:

The Galley Book – Not a cookbook: provisioning, food preservation, choosing a marine stove, refrigeration systems, and gear.

Cooking On the Go – Recipes for those who enjoy sailing without an oven or refrigeration.

Good Old Bookshelf

www.goodoldboat.com/bookshelf.html

Don't see the book you're looking for? Ask BookMark!

Mark Busta

Mark Busta is turning "booksmanship" into an art form. Want a specific book, a hard-to-find book, an out-of-print book? The detective in Mark is set free, and he'll find it for you, if anyone can. That's why we've nicknamed him "BookMark." It doesn't even have to be about sailing. Call Mark at 763-420-8923 or email him: Mark@goodoldboat.com. Any book — in print or not — no matter what the topic.

Check out the Good Old Bookshelf on the Web

We've got many of our favorites up on our Web site now: <http://www.goodoldboat.com/bookshelf.html>

	Price	Quantity	Extended price
Dan Spurr			
Heart of Glass – The story of the fiberglass boatbuilding industry.	$27.95	___	_____
Spurr's Boatbook – Upgrading an older fiberglass sailboat for offshore cruising.	$24.95	___	_____
NEW! ***Offshore Sailing: 200 Essential Tips*** – *(See review, Page 60).*	$27.95	___	_____
Beth Leonard			
The Voyager's Handbook – Beth's "how-to book."	$34.95	___	_____
Following Seas – Her "why-to book."	$19.95	___	_____
Nigel Calder			
Nigel Calder's Cruising Handbook – A one-book cruising library.	$49.95	___	_____
Boatowner's Mechanical and Electrical Manual – Maintentance and repair.	$49.95	___	_____
And others			
Theresa Fort			
Fun Afloat! – An exciting activity book for boating kids.	$19.95	___	_____
Lin and Larry Pardey			
Cruising in Seraffyn (25th anniversary) – Still relevant, a beautiful retrospective.	$21.95	___	_____
The Cost-Conscious Cruiser – Equipment plans, maintenance to control costs, more.	$29.95	___	_____
And others			
Don Casey			
This Old Boat – Turn a cast-off fiberglass boat into a showstopper.	$34.95	___	_____
Inspecting the Aging Sailboat – There are bargains aplenty in boatyards everywhere.	$21.95	___	_____
And others			
John Vigor			
The Seaworthy Offshore Sailboat – Preparing your boat for offshore sailing.	$18.95	___	_____
Twenty Small Sailboats to Take You Anywhere – 20 small bluewater boats.	$19.95	___	_____
And others			
Ivar Dedekam			
Illustrated Sail and Rig Tuning – For the racing and cruising yachtsman.	$22.00	___	_____
		Subtotal	_____

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GOOD OLD BOAT

7340 Niagara Lane North, Maple Grove, MN 55311-2655

Good old classifieds

For sale

Chesapeake 32
1960 Philip Rhodes fiberglass classic. Hull #1. Full set of sails includes spinnaker, Westerbeke 26G, new Kenyon mast 1990. New cushions in 1999. Located in northern Chesapeake Bay. Priced to sell. Call for details or a sail.

Fred Wilson
610-644-0649

S2 7.9
1984. Freshwater boat in excellent condition. Fixed keel. 1994 North Regatta sails: 100%, 155%, full roach main, spinnaker. All sails refurbished May 2001 and in excellent shape. 2000 8-hp Honda 4-stroke. Autohelm. Signet depth and speed. 2 bulkhead-mounted Suunto compasses. May 2001 marine survey valued the boat at $15,740 before the new engine, small Bimini, and other extras were added. Located on Lake Hartwell, S.C. $17,500.

Jesse Tate
864-419-7685
relesha@aol.com

Cape Dory 27
1980 sloop. New Yanmar 9-hp diesel (10 hours). Harken roller furling. Full keel, draws four feet. VHF, depth, knot meter. New battery charger. New head and tank. Marine A/C is new. Hull Awlgripped in 2001, cream color. A great, sturdy classic, ready to sail away. Located in Jacksonville, Fla. $17,900.

John Willoughby
904-387-6343
jpwjax@mediaone.net

O'Day 22
1974. Sturdy and very forgiving cabin cruiser for the beginning sailor. All original and ready to sail. In the water summer of 2001. No trailer. $1,500. Located in Muskegon, Mich. With Torresen Marine: <http://www.torresen.com>.

Scott Moyer
616-891-2377

Falcon 16
1969 daysailer. 1983 Highlander trailer. 1998 full restoration. Two owners only. Original documents. $1,800. In Milwaukee.

Gene McKeown
262-377-3394
Lori.Luther@Bemismfg.com

Le Comte 33
1961 classic fiberglass medalist. Full keel. Atomic 4. New head. 5 sails. Good fixer-upper. Looking to trade down or cash. Bargain price: $5,000.

Gary Bajenski
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C&C 37
1973 freshwater racing boat. Beam: 12 ft. Draft: 6 ft. Displ: 15,000 lbs. 9 bags of sails (most mylar). Rod rigging. 30-hp diesel. 19 winches. Wheel steering. Teak floors. All ground tackle, 2 anchors with rode. 5 halyards. All safety equipment, shorepower. Good fixer-upper. Looking to trade down or cash. $15,000. All offers and trades considered.

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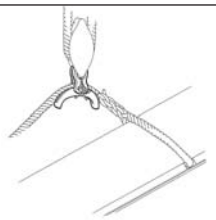

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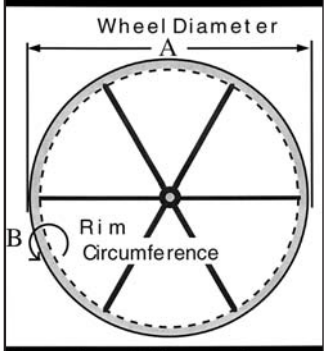

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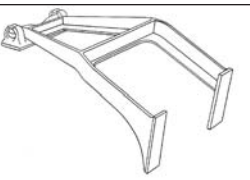

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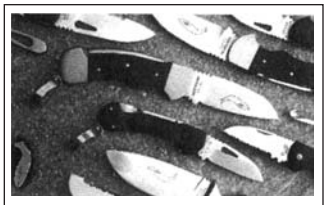

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Chef from Page 52

American lobsters reach the market with pegs in their claws to prevent mayhem in the fish shop and to keep them from destroying each other. Should you meet an unplugged lobster, grab and close the claws. They close easily. Wrap a rubber band around them. Keep in mind that the thin claw is for feeding and the fat claw is for crushing. You really, really don't want to find out how hard the fat claw can crush. Lobsters sold with one claw missing are called "shorts," not to be confused with illegal, undersized lobsters, which are also called "shorts." You can get real bargains by purchasing shorts with just one claw.

We are of the general opinion that when it comes to buying lobster, bigger is better. You get more meat proportionally because the meat in the legs becomes accessible. The meat in a large lobster is just as tender and delicious as in small ones.

Selecting precooked lobster

Make sure the meat has the briny odor of the sea. Pull the tails back; they should recurl when released. If they do not, the critter was dead when it was cooked, not a good sign.

Frozen spiny lobsters are sometimes tough and often have an iodine taste if the tail is over 10 ounces. It's expensive and has little of its distinctive fresh flavor. Who needs it? Especially when frozen shrimp taste better and are cheaper.

The American lobster, most commonly found commercially in the ¾- to 2½-pound range, makes a fine meal. A 1-pound lobster feeds one person, and a 2½-pound lobster feeds three — or it can feed one. While these sizes are typical market weights, it is not unusual to find 15- or 20-pound monsters on occasion. The largest spiny crawfish I ever caught weighed 14 pounds, and it was delicious!

Live lobsters will keep for a day if refrigerated at 45° F to 50° F. Placing them in a thick sack surrounded by ice has similar effect. American lobsters may be kept alive indefinitely in a mesh sack or pen if stored in their native water.

Killing and cooking

Lobsters are usually cooked whole without any preparation. The most humane way to kill a lobster is to pierce it between the eyes with an ice pick or screwdriver. You can also add an inch of seawater to a large pot, add the lobster, and bring slowly to a boil. The lobster just keels over. Plunging them into boiling water causes a violent reaction.

A common practice, when a spiny lobster is too big for the pot, is to twist off the tail. Kill the lobster first by pithing between the eyes or just chop the body in half lengthwise if you are broiling. Once the lobster is dead, the tail muscle relaxes and can be pulled free with the help of a spoon inserted to free the muscle. If the lobster exceeds about 1¾ pounds, meat can be found at the base of the antennae and the legs. These joints may be twisted off and cooked with the tail. Larger lobsters have edible meat in the legs.

Steamed lobster: Add about ¾ inch seawater to a large pot. Add lobster. Cover; bring water to fast boil. When steam begins escaping from under lid, reduce flame and cook for 15 minutes. No more. Boiled lobster are similarly cooked but in boiling water.

Broiled lobster: Split lobster in half from head to tail; discard the dark stomach, a hard sack near the head. Squeeze lemon all over, and dot with butter; let stand for a few minutes. Brush with melted butter; slip under broiler for 7 minutes, checking frequently and basting with more butter to prevent drying.

Deep-fried tail: We disdained this Caribbean specialty until we tried it. However, it requires close to a quart of very hot oil. Kill the lobster and sever tail nerve by slipping a small knife between body and tail joint. The tail should relax. Slip a butter knife up inside the body cavity against shell and separate the tail meat. Remove tail. Dip exposed meat into a fritter batter. Drop in very hot oil. Watch out for spatters. The oil does not penetrate the lobster because the steam from inside the shell blocks its entry. Fry half-pound lobster tails for 4 minutes.

Gutting

After cooking, a 4- to 6-inch piece of antenna is usually broken off, and the broken end is slipped into the anal vent. With a good jerk, the antenna is pulled out, effectively eviscerating the beast.

Opening

1. Work should be done in the sink. Use a heavy scissors or a pair of cooking shears. Work with a towel and be careful of hot splatters.
2. Cut the underside of the shell from the anal vent to the tip of the head. Just cut through the shell.
3. Lay in the sink, let drain.
4. Now cut the lobster from the end of its tail along the top to its head.
5. Finally, cut through the front of the head, giving you two body halves.
6. Separate.
7. Crack the claws and joints.
8. Allow to drain.
9. Remove the head sack. Be careful to retain the green liver, which is delicious. If there is any black, gooey material inside, remove it.
10. Twist off the claws at body.
11. Crack each arm segment with a cracker.
12. Lever the lower part of the claw from side to side, not up and down, and pull it free.
13. Break legs the same way and pull each segment free, taking the cartilage with it.
14. Discard the spongy gills and suck free the meat in the body cavity. Serve with hot melted butter.

Seafood au gratin

Seafood au gratin is traditionally baked and served in individual crocks, but it can be quickly cooked in a pan over low heat and served over toast. Goes well with lobster, shrimp, crab, and scallops.

Ingredients:

¼ cup butter
1 pound cooked seafood, shelled
2 tablespoons flour
½ cup white wine
1 cup cream or condensed milk
2 tablespoons sherry
1 cup mild cheese, grated
Salt, pepper, paprika

To prepare: Melt butter in large pan; stir in flour. Let flour bubble for a minute; stir constantly to remove lumps. Add cream and wine; stir over medium heat until thickened. Add seafood and cheese; cook over low heat; stir constantly until cheese melts. Serve on toast; sprinkle with salt, pepper, and paprika.

Lobster thermidor

Ingredients:

Meat from 1 lobster
2 tablespoons butter
¾ cup white wine
1 teaspoon dry mustard
¾ cup cream

Kill lobster and remove as much meat as possible. Thinly slice the meat and sauté for a few minutes and reserve. Add other ingredients and simmer over low heat to reduce until thick. Place cooked lobster on herb toast and pour sauce over all.

Taking on the storm

Heavy-weather sailing helps sort out life's problems

"Whenever one encounters dangerous circumstances the advice is always, 'Cross the river.' One can see from this that the real purpose of boats is to deliver people from danger rather than to provide comfort."
— Ou-yang Hsiu, 1007 - 1072

by Bill Coolidge

A STRANGE RATTLING; MY EYES WERE blurred; blindly my fingers moved to the drawstring and pulled it down. Cracks of darkness alternated with the inch-wide white blinds. The clock pointed to 2:30 a.m. Another rattle, and the blinds billowed out toward me. I felt the wind slithering in between the gaps. To and fro the blinds danced, knocking against the knotty pine wall, then swooshing back out toward my bed.

"A front is coming in," I said to myself. "The wind is shifting. I'm in luck." Oldtimers around the lake called it a "northerner." The wind shifts from the south and west to the north and strengthens; whitecaps soon appear on this deep-water lake in northern Michigan. I pulled the comforter over my head and went back to sleep amidst the clanging and cool Canadian air that fell on my 16-year-old body.

Later, waking up to the cool air of the approaching front, I gulped my breakfast and pulled on my yellow windbreaker and old blue bathing suit. I hustled into the utility room and put the sail on my shoulder while grabbing the tiller and centerboard with the other hand. Higgins Lake was churning: whitecaps clear across the three-mile width of lake and as far as I could see past the island to the south. Rolling in, depositing seaweed, odd pieces of wood, bobbers, sand toys.

Setting the sail, tiller, and centerboard on the dock, I pushed the Sunfish out into the water, its bow barely claiming a bit of sandy beach for stability. The sail went up first, which pulled the craft further up on shore. I pulled and pulled to turn the vessel around and head her into the wind, then with the bouncing of the boat and lapping of waves, I attached the tiller, jumped into the tiny cockpit, and set the centerboard all the way down at the same time. Like a corralled horse let out into pasture, we took off fast and straight, a bit off the wind. We headed for the island on a beam reach.

Enjoying day off

No need to look out for other boats. They stayed off the lake in this kind of weather. I was enjoying a day off from working as a clerk and stockboy at the local grocery store. I had weekend friends who returned to Detroit on Sunday night for their summer jobs. But I stayed up at the lake during the week, working, sailing, and hiking through the miles of old logging trails. Comforted by the solitude, I pulled in the sail. The boat heeled. I leaned out, my toes tucked inside the coaming of the cockpit. Parallel to the water, I knew one more gust of wind, and I'd be capsized.

Waves washed over the bow, the cockpit drain was open, but it was slopping inside the 2-foot by 2-foot indentation in the flat fiberglass hull. Too much water was coming in for the small open seacock to release it back to the lake.

When I first started sailing as a 12-year-old, it was on an old Sailfish my dad had found. Just a 13-foot flat wooden boat with two rails to hang on to. My brothers kept fiberglassing the bottom, but soon all that kept the water out was fiberglass. There was no wood left. After 30 minutes out from the dock, it would sink. Dad found a used Sunfish for sale. I mostly used it, as my older brothers were by then either married or attending summer school. They'd come up on weekends, sleep in, have a few beers, then take my dad's Century Resorter out to the island for the Saturday afternoon party. The Sunfish was mine, although I would never tell my brothers this.

On this stormy day clouds, like airplanes, came in to land and passed over me one after another. I could see in their gray bottoms the threat of rain. I was running right into the storm. It only took about a half hour to be out of sight of my cottage, beyond the reach of my stepmother and other neighbors. I leaned out farther, right on the edge, right where I liked to be, thinly balanced between air and water, testing, experimenting, seeing how long I could ride this high before a pesky gust tipped me over. Just me against the wind, the approaching storm, and the whitecaps.

Capsize

But there is no winning out there. Just as I stretched to my limits, a free-flying thrust of air, squarely out of the north, hit the sail. The boat rose up. I leaned out. The sail flopped into the water, and I climbed over the side onto the centerboard, surrendering to necessity. This is how I released my inner turmoil into the wilderness of these deep, chaotic waters. As the boat heeled up and then crossed over, succumbing to wind and water, I found myself. Alone, unfettered by parental authority, impending college boards, the confusion of sex and love, I experienced life in its simplicity: right the boat.

After a long pull on the edge of the boat, the sail came up shimmering with water, showering me. I hopped on, my yellow windbreaker sopping and heavy. I pulled it off and tied it to the mast. The water was warmer than the air. I felt

encouraged, heartened. I was warmed up, ready for the next round. As I pulled on the sheet, the sail came back to me, the boat climbed into the wind, heeling nicely.

Most of my friends prefered motorboats. The Johnsons and the Evinrudes for waterskiing, the Mercurys for speed. Their parents, arriving on a Friday night in Buicks and Oldsmobiles from the Motor City, walked the docks to their inboards and started up their throaty Graymarine engines. Maybe they would go out for an evening spin, open her up, go 30 to 35 knots. Speed and grace, those dark-brown, highly varnished Chris-Crafts and Centurys. Saturdays, their offspring would get control of these boats for visiting friends, waterskiing, partying. Sundays, maybe the parents would go out for a slow ride after a late breakfast. Then everyone would pack up and leave for Detroit. By 6 p.m. the lake would be quiet. Maybe my dog, Rip, and I would take the canoe out or the 5.5-hp Johnson on my dad's duck boat for a final spin up and down the shore. Rip, an English setter, would lean way out in front, like a hood ornament, smelling, sniffing, occasionally barking . . . at what I never knew. He was in his own world, as I was in mine.

No competition

Capsizing was not a failure; it represented a reckoning. For me, to take on the storm involved no competition . . . no winners and losers. I knew, given the light weight of this boat and my 140 pounds, that a strong northerner would topple me. My goal was to stay out as long as I could and sail the triangle course so familiar to me: around the island, a long tack into the wind toward Higgins Lake State Park, and then downwind toward home, pulling up the centerboard, sitting as far back as I could, attempting to keep the bow from plowing under a wave and bringing on another capsize.

"Bill, why do you have to go out in weather like that? What's wrong with you?" My stepmother, coffee cup in her hand, would watch me gather the sail, nicely varnished tiller, and centerboard. "You know I can't help you if you run into trouble out there. No one else is up during the week. Don't you think you are playing with danger?"

I would always murmur, "I know what I'm doing."

When I turned 13, my dad had enough of my stepmother telling on me. "You know son, I know you are a good sailor, but I demand that you put one of your waterskiing life belts around the mast. That's an order."

No one in my family, none of my friends, seemed to understand the necessity of going out into the storm. In 1959, aged 16, I couldn't find the words to express the need to go that I felt in my gut. But go I must. Waves, wind, vulnerable sailboat, me. A stark simplicity that involved no one else.

Smouldering standoff

In later years, I understood that I was working something out. My gut was in turmoil. I took up running in marathons. A fierce charge resided just below my stomach. More than anger, it was a smouldering, brooding standoff. I had no words for this forlorness. My father, like me, kept all that confounded him to himself.

That's why I felt lucky at 2:30 a.m. on the eve of my day off. That's why I needed the storm. I found great comfort that the mood of the storm matched up with the powerful twisting strains of my own inner life. I was at home on the rough water.

It is now more than 40 years later. Yesterday my home was rocked constantly, enduring another storm from the Gulf of Alaska roaring through the Golden Gate, into the San Francisco Bay, and pelting the sailboat I live on with rain, then hail, sleet, back to rain. I remembered my 16th year and my feelings of being at home on the water.

"In 1959, aged 16, I couldn't find the words to express the need to go that I felt in my gut. But go I must. Waves, wind, vulnerable sailboat, me. A stark simplicity that involved no one else."

What's changed? I still grieve the loss of my first love at age 16. I still yearn for the mother who died birthing me in 1943. I still wonder how I might have had conversations with my dad before he died . . . about my mother, about his loves, about mine. I weigh a little more. Black hair turned gray. Trouble bending over.

After searching for years for a love that would surround and protect me, I had given up. Then one day, 2,000 miles from home, walking the docks of Portland, tears in my eyes for the beauty of those wooden boats, love found me. Gone now is the yearning, present now is the invitation to speak of matters of the heart. And my gut has finally unclenched.

Solitary again

My sweetheart works in the city. Every day is mine on this old boat to do what the day offers. Sail. Write. Canoe. See clients. I have become the solitary individual that I once was at age 16. This afternoon, the Coast Guard is forecasting clearing skies, wind settling down to 15 to 20 knots an hour. I have an appointment with a young man who posted a note on the gate bulletin board: "Want to learn how to sail. Will trade manual labor."

After years of living on land, farming, building houses, staking out pastures and gardens, I am now waterbound. This 33-foot, 25-year-old bluewater vessel reminds me of a German shepherd straining at the leash, plowing into wave after wave, taking on the storm, determined to tack toward Angel Island. Singleminded. She doesn't mind drenching her captain, the rattling of dishes, the clunking of books on the cabin sole. I go along with her and endure the rattling of the halyards, the ruffling of the sails, the cold wind from the west. We are companions. I love singlehanded sailing. Just me and the water, the wind, and my vessel.

But it's time to pass this passion on. Aaron is the young man's name. I wonder if he has the yearning, the slicing energy to handle sails, tiller, and what the sea offers all by himself. Will I be able to tell him? Or will he be able to see it in the weathered palms of my hands, the glint of my eyes, the leaning out of my body to check our sail trim, to watch for the presence of freighters, to notice a change in the direction of the wind?

To take on the storm is to be delivered from a life of confinement, of certainty, of a conflagration of inner voices . . . all demanding. Once I pull on the sheet of that sail, land recedes, taking with it the grueling thoughts of a teenager or of a late middle-aged man. I must go into the storm to be delivered from the comfort of certainty.

Rip, the dog, always awaited my return, pacing the beach as he caught a glimpse of the white sail coming in fast. He would bark, jump up and down, and then wade out as I let down the sail, releasing the tiller and centerboard. A fit welcome back.

Aaron works across the estuary from where I live, "on that big Coast Guard boat, the *Munro.* But I want the water close by, the wind up against me, I want to be a juggler of the elements. The wind, the bay waters, and me. Simple. Not complex like that boat over there. That's work. This," he says, as he rubs his hand against the teak rail, "this is for me."

Bill started sailing on a wooden Sailfish and moved on to a fiberglass Sunfish. Years later he purchased a coldmolded Flying Dutchman, then a wooden Lightning. Next came a Hunter 25 and then a Sunfish. When he wrote this article, he and his wife were living on the San Francisco Bay on a 1979 Swift 33. He's writing a book, The Grace of Falling.

(1½-inch) badger-hair brush for painting the restricted portions of the deck. Do not use a cheap brush. A badger brush will give you a finish in these areas that will be indistinguishable from rolled and tipped surfaces.

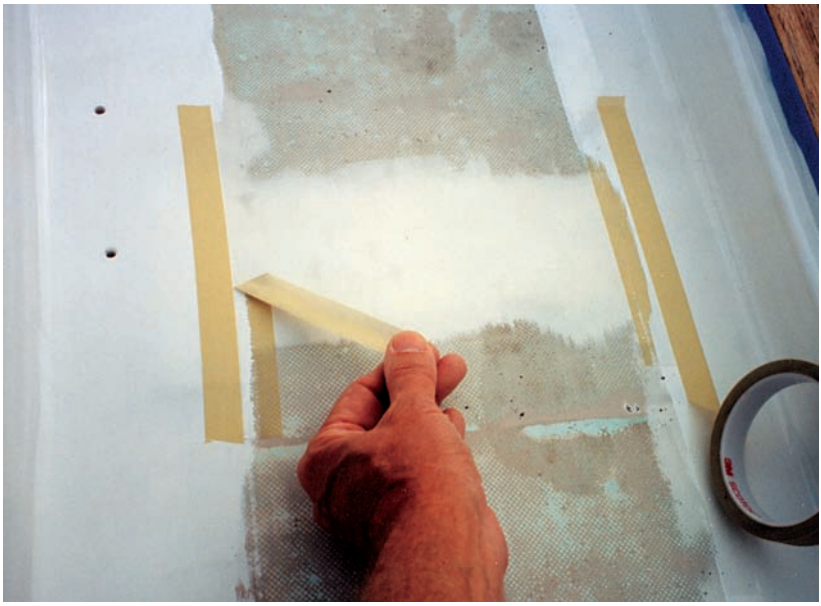
Do it again

After your smooth-surface first coat has had 24 hours to cure, wet-sand it entirely with 320-grit wet-or-dry paper. Block-sand any runs or sags to remove them. *Note: sanding polyurethane produces a tenacious scum that you must scrub and flush away with plenty of water.*

Remask the smooth surface branches and solvent-wipe (2333N) the surfaces to be painted. Apply this coat just like the first one, over two days. Two coats should be adequate, but if you think you can improve the results, you can repeat the process one more time.

After the smooth surfaces are finished, mask them and roll a coat of paint on textured portions of the deck. You won't need a brush except perhaps to help get coverage in the deep corners of the texture. If you are not enhancing the nonskid with grit, apply no more than two coats to the textured surfaces. A single coat is better if the coverage is satisfactory.

Peel the tape, reinstall the hardware, and you are done.



When painting barricaded sections maintain a sharp edge by laying fresh tape against the edge of the old tape. Then peel the old tape back carefully.

Don Casey co-authored Sensible Cruising: The Thoreau Approach *and became the authority on boat fix-it projects with* This Old Boat. *He is the author of a series of books in the* International Marine Sailboat Library *and of* Dragged Aboard — A Cruising Guide for the Reluctant Mate. *He and his wife, Olga, cruise aboard their Allied Seawind. They've done all the work themselves with no adult supervision.*

Mail Buoy from Page 3

see reference to this area. I should note that there are hundreds of sailboats situated on this bay which allows easy access to Lake Ontario. I am hesitant to take my copies of *Good Old Boat* to the club as I value them greatly. Would it be possible for you to send me a few copies so that I could take these to the club? I am sure it will lead to new subscribers.

Bob Honsberger
Burlington, Ontario

How could we refuse?

Oven cleaner is not necessary

You ran an article by Don Casey in your January 2002 issue that showed how to prep and paint your boat. It mentioned using Easy-Off oven cleaner to remove vinyl graphics. Although this method may be quite effective, I feel it's a bit extreme. There are other ways to go about removing these decals. Most decals will come off using a heat gun (a hair dryer also works). It leaves a little bit of adhesive behind that can be taken off with some products like Orange Peel or perhaps Goo Gone. These products are non-toxic and safer to use. A razor scraper and a bit of light sanding will get really stubborn decals off.

Jeff Schuster
The Vinyl Image
New Bedford, Mass.

Mooring for a big blow

About Bill Sandifer's article on mooring (January 2002): our boat is moored in 15 feet of water off Buzzards Bay, Mass., and we have seen our share of hurricanes. A couple of things to add to Bill's article. First, find out if your area is subject to hurricanes and what storm surge should be expected. Figure on scope to your mooring buoy of three times maximum expected depth. In our case, 15 feet at high water plus 12 feet of storm surge equals 27 feet. This times 3 equals 81 feet of scope. If we used the high-water depth of 15 feet with 3 times scope, it would be less than a 2-to-1 scope at the height of the storm.

Second, ours is an exposed anchorage. The local rule of thumb is to have a mooring pendant at least equal to the boat length. Third, most mooring buoys are undersized. The buoy should be able to support the weight of the anchor chain. It takes the weight of the chain, rather than having that weight supported by the bow of the boat.

Fourth, we have found that stainless steel in salt water eats galvanizing. We tried using those beautiful stainless-steel extra strong, shackles and swivels. It was a disaster. Even stainless-steel seizing wire will eat the galvanizing. Boatyards in our area use copper seizing wire; we use two heavy-duty wire ties.

Fifth, chafe of the mooring pendant is the most common cause of failure of mooring systems, based on my wanderings after hurricanes. There is no such thing as a mooring pendant too large in diameter or chafing gear that is too good. Dismiss the notion of wanting stretch in your mooring pendant. Some evidence suggests this can cause nylon fibers to internally chafe, heat up, melt, and fail. It is far more likely that your mooring pendant will chafe through than it is to have shock loads rip out deck hardware. Most likely, however, the chocks and cleats on your boat are too small and should be upgraded.

Ted Cady
Warwick, Mass.

Don't forget the swivel

I read with interest the recent article by Bill Sandifer describing his homebuilt

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mooring system. Being a handyman-type myself and forever trying to go sailing on a budget, I applaud his approach to things. While the basic mooring ought to work just fine, I do find a few faults. First, there is no mention of a swivel. This is a critical element to prevent the mooring pendant and chain from twisting into a snarled mess as the boat swings with the tide. Twisted gear will be dangerously weakened. A swivel should be installed between the chain and the pendant. Second, Bill mentions joining the two different chain sizes with expensive Wichard shackles. What comes to mind are those very pricey stainless-steel beauties offered by Wichard. I feel the entire system should be made from similar materials rather than introduce the stainless. And finally, while no dimensions are given for the mooring design, good engineering would dictate that the stock, where it exits the top of the concrete, be kept as short as possible. Any excessive length would be subjected to alternate side loading, which will eventually lead to fatigue failure.

Art Hall
Pownal, Maine

Score one for Bill Sandifer
Thanks for your help. Your organization is more than just a magazine. Your technical writer in Mississippi *(that would be Bill)* was very helpful. We had a serious problem with our shaft log. The local marinas were not sure what to do, but he walked us through step by step.

Ron Fleet
Westerville, Ohio

Where's the Triton?
Just got the January Y2K+2 issue. Being a Triton owner, I immediately jumped to the article on Carl Alberg and noticed the list of his fiberglass designs. I was surprised to see the Triton was not listed, although it is mentioned in the article. Not to worry, you still have the best sailing magazine on the market. And, by the way, the article on sanitary lessons, was great too! I think those other sailing magazine subscriptions I'm getting are in jeopardy.

Allen Hilburn
Elephant Butte, N.M.

*Arrrghh. Where **did** the Triton go?*

You're right, we missed that
I just read, late as usual, the article Master Mariners show their stuff in the November 2001 issue and was shocked and dismayed when I read that Erskine Calder wrote that wonderful book *The Riddle of the Sands.* Gee, I always thought it was Erskine Childers who wrote that one. I'm sure you got hundreds of messages correcting this error. I don't know if it was *Good Old Boat* or Michael Beattie who erred, but it begs to be corrected. This book is one of the very best ever; I've read it at least six times.

Rudi Oudshoorn
Bellmore, N.Y.

Rudi, we share the blame with Michael because we didn't catch it before you did.

A couple of corrections
We just came back from Maine for the holidays and found that *Good Old Boat* had arrived. Thanks a million for including my letter and pictures and for sending the extra copies. I've been showing it to my friends, teachers, and relatives. My mom wanted me to send in two corrections. I'm about to turn 11, not 10, and although my dad can't sail, my mom can and is quite good.

Milo Feinberg
New York, N.Y.

Taking Milo's advice
Olin Stephens' fellow crewmember, Milo, told me I should order your magazine. I generally take his advice on sailing matters. Please consider this my subscription for a year.

Bob Scott
Castine, Maine

About the Commercial Wharf
I was wondering if the artist who did the artwork for the Old Port (the Commercial Wharf page on the *Good Old Boat* Web site) has a Web site or if you folks are offering prints of his work. I like the reality and cartoon mix. Kind of like life.

Gary Wheeler
Mast Mate – www.mastmate.com
Rockland, Maine

*Dave Chase who did our "Work for boat part T-shirts" made that illustration at our request. We're quite fond of it also. Perhaps it **should** be a T-shirt.*

Thanks for the memories
Great article on Olin Stephens (November 2001). Can we summon up more reminiscences of other great designers as a regular feature? Also about Michael Greenwald's article on seafood: as a young man sailing in the Mediterannean, octopus was on the menu fairly often. We would dive to find small ones nesting in tin cans on the bottom. The larger ones would have to be beaten for 15 minutes by hurling them against the rocks, as otherwise they could be pretty tough. A fisherman taught me a neat way round this . . . freeze them overnight. They become soft and lose no flavor. Cut into small mouthful-sized pieces, fry lightly in a little olive oil for a couple of minutes, add water, olive oil, rosemary, thyme, oregano, black olives, fresh or tinned tomatoes, onion, as much garlic as you can stand and a vegetable stock cube. Poach for at least 75 minutes on a low flame (it's quicker in a pressure cooker and better). Halfway through, add plenty of potatoes, and cook them in the octopus broth. The result is delicious.

And one more thing: why is it that some of your correspondents refer to a boat as "it"? In the English language locomotives, ships and, of course, graceful good old boats take the feminine gender. It seems only right to defer to them as "she" as they can be quite willful. Or is the neuter some terrible form of reverse PC culture?

Patrick Matthiesen
Sparkman & Stephens Assoc.
London, England

Where in the world is Rae Ellen Lee?
The book review (January 2002 issue) by Fred Street on *If the Shoe Fits* caught my

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Last tack

Heffalumps and woozles*

by Karen Larson

Jerry and I sat contentedly in the cockpit on one recent vacation in one of nature's purest places: Isle Royale National Park. It was evening. The water around *Mystic* was pure glass. There was not another boat in sight. This is the sort of place where wildlife abounds. On that trip we'd already seen otters, moose, and a fox. We'd also seen bald eagles, osprey, and loons by the score. There are wolves there, too, although we've never seen one. Not during any visit to Isle Royale. But you never know. Magic can happen. It helps to have an active imagination.

We were dreamily watching dozens of nature's feathered dandelions, ordinary herring gulls, do extraordinary flight maneuvers as they soared and swooped and scooped insects from the surface of the mirror on which we were floating. Suddenly I noticed a patch of water that was not smooth. The wind had rippled it . . . or something else had.

My attention turned toward that point, and sure enough, I saw in the dim light the shape of a moose wading in the water at the edge of a nearby island. I pointed the moose out excitedly to Jerry and went below for our binoculars. No matter how often we get to see moose it's always a thrill . . . particularly if we're in the safety of our sailboat and not vulnerable and low in the water in our kayak (say upstream of a moose who has just arrived to browse in the stream, effectively creating a brand-new and wholly intimidating roadblock).

By the time I returned with the binoculars, Jerry had decided that it was not one, but more likely two moose, probably a cow and a calf. However the binoculars told the sad story: our active imaginations had done it again.

In a Canadian provincial park not so far away from Isle Royale, we've been known to stealthily sneak up on a brown spot on a hillside thinking we were getting an opportunity to see our first caribou . . . only to discover that we were stalking a large rusting oil drum.

This time we were excited by moose-shaped dark rocks at the water's edge. This explains why they were strangely quiet. Moose are seldom that quiet. Their massive heads splash to the surface with great mouthfuls of underwater vegetation, all of which drips and splashes. Nor are they soundless as they move those large bodies through dense forest undergrowth.

They're not usually difficult to spot. They need not tiptoe. There is nothing that can stop them, with the exception of the occasional wolf. And even a wolf is no threat unless they are very old, very young, very sick, or very injured.

Sometimes, to keep things lively, I try to find or suggest that I have spotted lions, tigers, or bears. Even heffalumps or woozles. In a magical forest that is already full of nature's wild creatures, who's to say I couldn't find a heffalump or woozle sometime? Or a wolf, for that matter? Once we thought we heard one howl at a distance. We treasured that moment although we wondered if perhaps we hadn't really heard an eerie loon's wail from such a distance that we were, perhaps, both taken in by it.

A few days later we were in the ranger station and asked the ranger if there had been any reports of the wolves howling a couple of nights earlier. She said that she hadn't heard any such reports but concluded, "If you think you heard a wolf, then you did."

Just my kind of park ranger.

* With apologies and gratitude to A.A. Milne.

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eye. We met Rae Ellen and her husband, Tom, while sailing with our friends Tom Jaax (who wrote "Ode to Nokomis," November 2001) and his wife, Marian Carr. Fred's review has a minor error of about seven feet in that it's an Alberg 37 (how would *we* know that?) they were living on, not an Alberg 30 as reported. I believe I had heard, perhaps from Tom Jaax, that the author and her husband currently have the boat on the market or have already sold it and have moved to somewhere in the USVIs to manage a property or something.

Tom McMaster
Minneapolis, Minn.

Tom, who has his own Alberg 37, took note of the size of the Lees' boat right away, of course. He's got the rest of it right, too. We went looking for Rae Ellen. Read on.

Rae Ellen responds

We visited St. John in January 2001 and found a small established business for sale. We were able to get this business, The Canvas Factory, at Mongoose Junction in Cruz Bay, St. John, and took possession of the shop the end of March 2001. Because this happened so fast and took us a little by surprise, we decided we could not afford the time (the five months) it would take to sail the boat down here to St. John. As it turned out, I am not "ocean-going" material, anyway. We have sold *The Shoe*, and it now sails out of Seattle. We hope to get a sailboat in the future down here. There are quite a few of them around, as you know. With all the islands to explore in the Caribbean it would be quite a shame not to have a sailboat. As they say – someday soon.

So, we're working at our shop, sewing and selling fine-quality canvas bags – totes, duffels, cargos, purses – in a multitude of colors. Many have tropical motifs embroidered on them. We get lots of cruisers in the store and so many interesting and fun customers. Please come into the shop if you get to St. John.

Rae Ellen Lee
St. John, U.S. Virgin Islands

Here's a bargain for you

We were in Vanuatu this year when we heard the Sept. 11th news. There are a lot of cruisers here changing their plans (like us) and not going from Australia to Indonesia next year. Unfortunately, those selling boats here in Australia are hit by the slump. But the import tax is not so bad now (circa 15 percent). The important thing to bear in mind is that the customs value can be acceptably put at maybe as low as a quarter of the purchase price. It is important that the surveyor sees the boat in a "rundown" state and is shown evidence (photographs, rust stains, etc.) of deterioration or repairs carried out. Also the equity of repair work carried out in Australia can reduce the customs value. So why not buy a boat here in Australia? If anyone would like any information about sailing between the Australian east coast and Vanuatu, New Caledonia, New Zealand, a plain text email will find us at vk2ezq@amsat.org.

Ed Popham and Susan Thomborough
Mooloolaba, Australia

Ed and Susan are the sailors of a 1984 Alberg 34. They were our first overseas subscribers way back when and have been with us ever since.

Kids and boats

The rule of thumb in the journalism business used to be: publish photos of kids and pets, and you can't go wrong. To this we would add: kids, and pets, and sailboats or some combination of the three. So we just had to run Lee Fox's letter which came with this photo of sailor Sierra Fox, age 8, above. Lee and Sierra sail on Foxtrot, *a 1977 Kells 23, on the Susquehanna River near Wrightsville, Penn. Sierra's an old hand. She started sailing at 4. Lee sent* ***his*** *photo along, too, but you see which one we selected. Here's his note:*

Your magazine is worth renewing! It is the only magazine I eagerly await – then read it from cover to cover. My wife figured this out, and she hid the magazine when it arrived until I got some work done around the house and then presented me with *Good Old Boat* as a reward. I also enjoy the newsletters and Web site; my wife hasn't figured out how to hide that yet! I've referred your magazine to fellow boaters and have received many kind thanks.

Lee Fox
Hershey, Penn.

Decimals to fractions easier still

Love the magazine; in the short time I've been a subscriber it has helped me out immensely. With regard to your (decimals to fractions) article in the January 2002 issue, I have a small bit to add. As a rule, whenever I need a calculator there is never one around. There is, however, for the most part *something* to write on even if that something happens to be a scrap of lumber and a nail. At any rate, you want to do your figuring as quickly as possible.

To get the same answer you've attained with your formula and to save several strokes of the pen or entries on a calculator, simply multiply the decimal you wish to change by the denominator of the fraction you wish to change to. The answer is the numerator of the fraction. To use the example you used in your article, multiply .75 by 4 (you wanted to change to quarters of an inch). Your answer is 3 or 3/4. The decimal .4567 converted to 64ths is 29/64 which is obtained by rounding off just as you did. This is my formula, but I happen to be one very lazy person.

Larry Mobley
Ashville, N.C.

Shucks, we thought Jerry was well on his way toward winning the next Nobel Prize for Economics.

The photo at right: The day had been too hot for sailing. Off to the west the sky had an improbable, but not unusual, reddish tint, likely due to an Okeechobee-area cane field burning. He coils the halyard at the mast. She steers into the cool evening. ***Puff*** **is a 16' 6" Fox catboat by Hake Yachts.**

Photo by Geraldine Kinsey

Discovering Liechtenstein
and creating a young sailor along the way

by Barbara White

Reflections

There were days when I dreamed of faking my death and moving to Liechtenstein. When the kids were small and the house was in constant turmoil, I would swear that when they were grown I was off to take my place in the smallest country in Europe. Robert, my husband, always managed to appear to be sympathetic, but I knew he really didn't understand.

During those years, Robert took up sailing. A 30-foot sloop became his escape from the everyday hurly-burly. When he climbed aboard, he left his cares behind on the shore. Eventually, he coaxed me into his wind-blown world, and I thrilled to the luxury of reading a book or knitting a sweater in peace. Years have flown by, and here I am sitting in the cockpit of our old boat, *Pleasant Surprise*, watching my grandson, Gabriel, ready his dinghy for a Little Sailors Regatta. His movements are economical and deliberate. He loves competing in these weekend races.

Watching him, I am transported back to his first day aboard *Pleasant Surprise*. He was three then, small and curious. He wanted to touch whatever he could just to see what would happen. He flipped switches, turned on our ship-to-shore radio and was delighted when it crackled with static. He opened lockers and cabinets. He tugged on the lines. He was a bundle of constant motion and non-stop questions. And through it all, Robert remained outwardly calm, but I could see that the strain was beginning to take its toll.

As that first day wore on, Robert rose to the occasion. Robert explained how to tack and heel and come about. And with every question answered and every gadget demonstrated, he learned what I had always known: no matter how much you love him, being with a small child can drain energy reserves you never knew you had.

Evening came, and the sun began to set. Robert went below-decks and, after some searching, came up with an old fishing pole. With Gabriel beside him, he began to thread the line and attach a hook so they could fish together. Robert worked on the fishing pole, and Gabriel fired off questions. After a pause, Robert casually asked, "Gabe, do you know where Liechtenstein is?"

"No," was Gabe's response.

After that first day, Gabe became his grandpa's favorite sailing buddy. He was a natural, intuitive and quick to learn. When our "little sailor" turned eight, Robert found a small dory in need of repair and, together with Gabriel, he lovingly fixed it up. Just before her maiden voyage they carefully painted the name Gabriel had chosen across her stern. Gabe is sailing her today.

There is the sound the of starter pistol. The race has begun. In front of the pack I can see him in his little red dinghy . . . *Liechtenstein*.

Barbara grew up in Connecticut, where she learned to love ships and the ocean. She taught high school and worked as a professional singer and musician, performing in some of the best jazz joints in the country. She now lives and sails in Colorado.

Creating a community

***Good Old Boat* magazine is about:**

Creating a community of sailors – Through our directory of sailing organizations and contacts, we're developing links between sailors **<http://www.goodoldboat.com/assoc.html>**.

Offering a resource – By pooling the knowledge of our readers, we're creating the directory we all need: the suppliers of parts and services for our boats **<http://www.goodoldboat.com/suppliers.html>**.

Keeping our boats afloat – Our technical articles focus on maintenance and upgrade issues and give them the space they deserve.

Celebrating older-model sailboats – We emphasize pride of ownership.

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