# Good Old Boat

*The sailing magazine for the rest of us!*

January/February 2002
Issue 22
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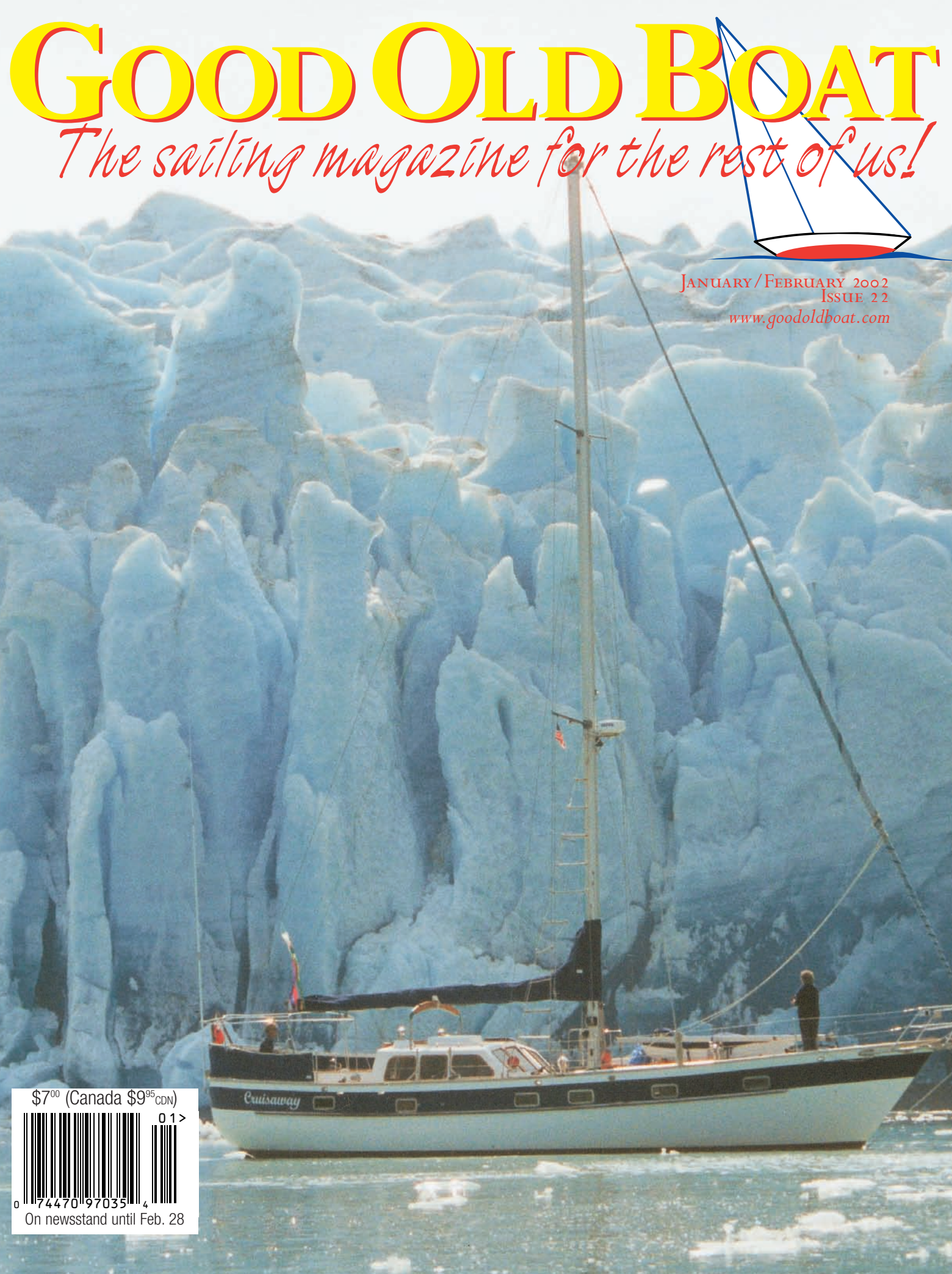


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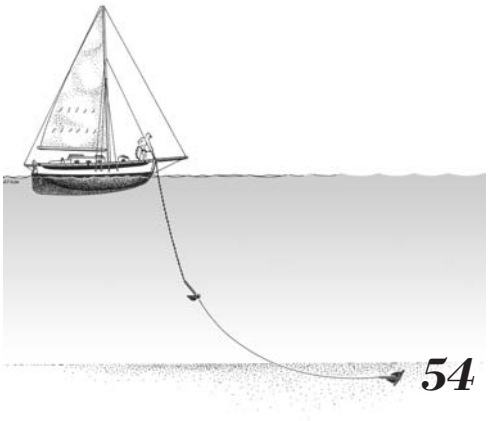
# This Issue










## About the cover . . .

Sailors Lindsay and Olive Stewart took this dramatic shot of *Cruisaway* at the Reid Glacier in Glacier Bay, Alaska. Since shooting this photo of their Brewer-designed Oceanic 46, the Stewarts have traveled to Patagonia, at the other end of the globe. So far they've put 170,000 miles under her keel since buying this boat as a burned-out wreck in the south seas.


# Good Old Boat

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# The view from here

# Created equal

**by Karen Larson**

How did the term "moving ***up*** to a bigger boat" become so prevalent in our language? I suppose we say "moving up to a bigger house," which might then place us in a more expensive neighborhood. Are there parallels in our sailing world? Our boats, large and small, wind up side by side in the same marinas. In fact, "moving up to a larger boat" may well exclude the new owner from any number of marinas built some time ago. The deeper draft may exclude them from some of the best anchorages, too.

I remove that expression, "moving up," from *Good Old Boat* articles whenever I find it. It offends me to think that if a boater chooses to sail a smaller boat or has not yet purchased a larger boat, that sailor is therefore "down." What are we in our 20-footers if someone else just "moved up" to a 30-footer? Slum dwellers?

If our boats are right for us and the kind of sailing we do, we need have no regrets if someone else has a larger boat. There also need be no status points associated with whether that boat is new or used.

John Vigor shows us in his book, *Twenty Small Sailboats to Take You Anywhere*, that many smallish (20 to 32 feet) sailboats are perfectly seaworthy, capable ocean crossers. They can be handled competently by a couple, can be accommodated in any marina, and can sail into most anchorages. They're affordable, maintainable, and fun.

Used boats of this size are plentiful. Why? Because 10 and 20 years ago they were considered to be grand sailboats on every scale. The 40-footers out there were the rare behemoths in the harbor . . . noteworthy freaks for the super-rich. These sailboats could not have been classified within the group of "sailboats for the rest of us," although many of the same 40-footers fit that classification today.

Not so long ago, real people were sailing the 20- to 35-footers. When did those boats go from being advertised as family coastal cruisers and offshore sailboats to something the larger magazines now classify as "weekenders and daysailers"?

This magazine is dedicated to the proposition that all sailboats are created equal. Bigger boats have disadvantages along with the well-touted advantages. Bigger is not necessarily better, and it is not, in our terminology, "a move up." Selecting a larger boat is a choice some sailors make. Nothing more.

# Mail Buoy

**About that stanchion repair**
Norman Ralph's article on repairing the deck under a stanchion *(September 2001)* is good, but I have a caution for those reading the article. If water penetration has gone very far, it can be difficult to remove the moisture and to get enough epoxy penetration to form a strong repair. In such a case, more drastic measures are needed.

A few tips: to protect the vacuum cleaner motor when drawing on a closed area, get a short piece of PVC pipe that will fit into the hose. Drill some ¼-inch holes in this piece of pipe and plumb it into the hose that's trying to draw out the moisture. Cover the holes with duct tape, and then uncover them one at a time until the vacuum cleaner is no longer laboring.

When covering the bottom of oversized throughdeck holes, I've found that epoxy resin can dissolve the adhesive of duct tape, causing it to let the resin drip onto whatever is below. I now put a small piece of wax paper immediately under the hole to protect the tape adhesive from the epoxy. *(See Quick and Easy Page 55 in this issue for another idea.)*

Some people are sensitive to latex, and latex does not hold up well to some solvents. I've switched to nitrile gloves which offer all the benefits of latex and then some. To offset the slightly higher cost, I buy the gloves in boxes of 100. When (not if) they get sticky, throw them away and put on another pair.

**George Dinwiddie**
**Pasadena, Md.**

***Scallywag* refit**
I particularly enjoyed the article about the revamping of *Scallywag*. It hit very close to home. My 13-year-old son and I will put to good use the many how-to articles (in the magazine) as we transform our newly acquired boat along the same lines and additions as *Scallywag*.

**Stan Kuczynski**
**Orlando, Fla.**

**Olin and I**
It's very interesting that you put an article about Olin Stephens in the November 2001 issue. The Castine (Maine) Yacht Club invited Olin Stephens up to Castine . . . There was a tour of a few of his boats. Later there was a lecture and a dinner. The next day he raced to Camden on the New York 32, *Falcon*. It was a classic yacht race held in his honor. Part of the rules were you had to tow a dinghy. I raced on the *Falcon* with Olin Stephens!

Castine has a class of 18-foot wooden daysailers. Known as the Castine Class, there were about 21 built. Twenty of them are still in Castine! This summer was the 50th anniversary of the Castine Class. For the first time, all 20 boats raced.

**Milo Feinberg**
**New York, NY**

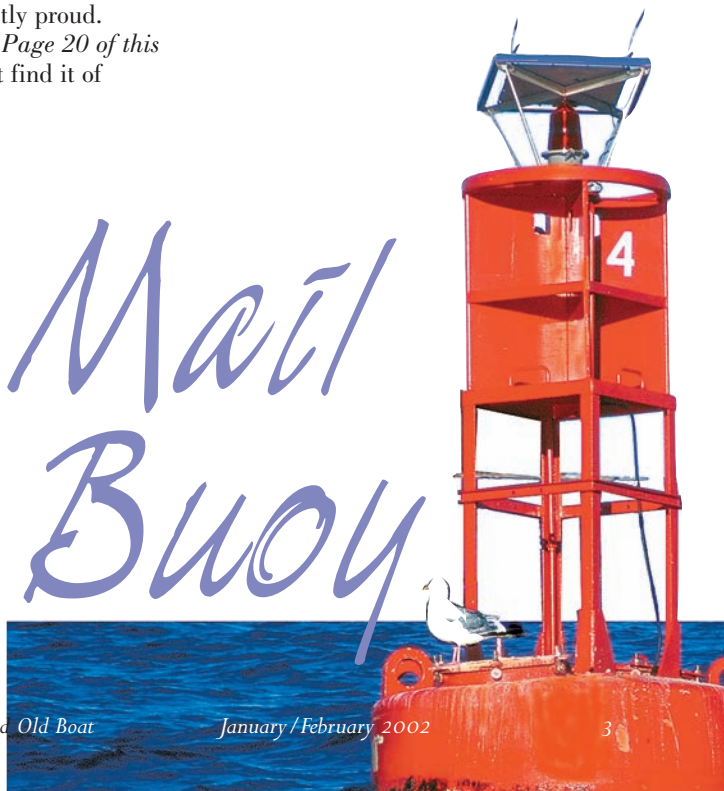
***Milo Feinberg and Olin Stephens, above. At left, Milo races in the Castine class. His crew? "Old men of 11 and 13," he tells us.***

*Milo was the subject of an article reprinted in the* Good Old Boat *newsletter (December 2000). He's on our list as one of the most terrific kids ever. He will be 10 in February and already he's had the experience of a lifetime: crewing for Olin Stephens.*

**Other honors for Olin**
I was delighted to see Kai Sturmann's article on the Designer's Recognition Rendezvous 2001 (DRR '01), which honored the design achievements of Sparkman & Stephens. Kai is a client of ours and owns a Tartan 34, *Étoile Filante*, of which he is justly proud. *(There's more from Kai on Page 20 of this issue.)* I thought you might find it of interest how this event came about. It was actually the second Designer's Recognition Rendezvous, the first having honored the prolific and vastly diversified designs of C. Raymond Hunt. This was held about five years ago at the Museum of Yachting in Newport, R.I.

I have always thought that recognition of the role the yacht designer serves in terms of aesthetics, safety, performance, and durability of boats, power or sail, has long been insufficiently touted. For this reason I had wanted to produce a rendezvous/exhibit which dramatized a chosen designer's contributions to boating. The Raymond Hunt Designer's Recognition Rendezvous was the first event of its kind ever and, in my view, a great success. After a number of

***Continued on 76***




*Sam Crocker's traditionally styled fiberglass 23-footer is still much sought-after*

## *Edey & Duff's Stone Horse:*

# A legend in its own time

*Story and photos by Gail Scott*

Of the 150 Stone Horses built since 1971, only hull #2 is missing. The builders, Edey & Duff, Ltd., of Mattapoisett, Mass., know where the rest are, says Edey & Duff sales manager, David Davignon.

No wonder. Owners today seem to be just as convinced of the little sloop's perfection as were Mait Edey and Peter Duff when they formed Edey & Duff in the late 1960s to build a fiberglass version of Sam Crocker's 1931 design.

Stone Horse owners appreciate more than the classic beauty of the 23-foot boat's small-workboat look. The composite hulls seem to be nigh indestructible. The shallow full keel yields steady tracking and full hull support should (heaven forbid) grounding occur. The double headsail and 339-square-foot sailplan with generous mainsail, staysail, and bowsprit-mounted roller-furling jib, with lines led back to the cockpit, make it possible for even a singlehander to sail her in a variety of conditions without sacrificing a pleasing pace.

***Bill McBrine, above, and Tim and Linda Bates, at right, have much in common concerning sailboat preferences.***

Even hull #1, built in Peter Duff's living room and herb garden, is still riding gloriously in wind and waves off the Massachusetts coast. The current owner, Bill McBrine, of Malden, Mass., tells of sailing hull #1 to her home port of Winthrop, Mass., from Mattapoisett in 1999 through 12-foot seas in a gale that he believes peaked at 60 knots. The sails were beaten up in the 13-hour ordeal, but the 28-year-old wooden tiller didn't break . . . until the next week.

### Suffered indignity

And this after Bill had rescued *Naomh Sean* (meaning St. Sean) from a watery sleep of 10 years in a North Carolina backwater. It must be said that the only reason *Naomh Sean* (then *Wild Pigeon*) had suffered that indignity was that her previous owner had died in the midst of planning to sail the Stone Horse from North Carolina to Wisconsin. Left to a son-in-law who was not a sailor, *Wild Pigeon* languished at her slip until the son-in-law decided the family should sell the boat.

Although *Wild Pigeon* had been neglected for so many years, Bill believes the family was anxious to be sure the next

*"Owners today seem to be just as convinced of the little sloop's perfection as were Mait Edey and Peter Duff when they formed Edey & Duff in the late 1960s to build a fiberglass version of Sam Crocker's 1931 design."*

owner would take good care of her. He remembers being quizzed about his family and how he planned to use *Wild Pigeon* — behavior that perplexed him, considering the amount of green slime that had developed over the Stone Horse in its decade of decline.

Bill was not deterred by the green slime. He knew he wanted a Stone Horse. He could tell the hull was sound. He figured a little elbow grease would solve the cosmetic problems. He was spared at least some of the labor of bringing his new boat back to shipshape. When Edey & Duff learned he had found hull #1, they offered to clean and repaint the boat in time for the yard's 30th anniversary celebration in July of that year. They also replaced the running rigging so when Bill and fellow sailor, Jim McCaffrey, were caught in the 13-hour sleigh ride through Massachusetts Bay on their way home from the Mattapoisett celebration, the Stone Horse was flying on a spotless bottom and with new sheets.


***Tim and Linda Bates sail* Starlight *on Lake Winnipesaukee in New Hampshire. Sam Crocker's raised-foredeck design is evident in these photos and on the facing page.***

## Wasn't fun

Bill is really proud of *Naomh Sean's* excellent performance in that terrible gale, but he recalls, "It wasn't fun." He has calculated that the footwell in the working-style cockpit could hold 150 gallons of water. He figures that he and Jim each bailed at least that much when not at the helm.

But *Naomh Sean* on that day demonstrated to Bill that the Stone Horse fulfilled Edey & Duff's third essential characteristic for a cruising sailboat: seaworthiness. "Seaworthiness really means just keeping the sea on the outside of your boat," wrote Edey & Duff in 1970 in their treatise, *The Stone Horse: a Superior Small Cruiser,* a work initially written by Mait Edey and then enlarged by Peter Duff.

"A lot of factors contribute to making a boat seaworthy," they wrote. "She must be strong. A weak hull, deck, the place where they join, steering gear, or rig, is inexcusable, but not unusual! . . . She must be buoyant, unless you're willing to live with a submarine . . . "

The footwell might have been sloshing during that storm, but Bill and Jim lived to tell the tale. Now with a third crew member, Albert Marley, they happily sail *Naomh Sean* out of the Pleasant Park Yacht Club in Winthrop, Mass., in all weather — recently cruising the bay on a late October daysail in winds piping to 35 knots. Bill owns the boat, but Jim and Albert have been good friends ever since Bill — who grew up with ice hockey and contact sports — discovered sailing. Bill's wife, Margaret, also sails with him, but she limits her excursions to fair weather sailing.

## Main attractions

For Stone Horse owners Tim and Linda Bates, of Wolfeboro, N.H., the boat's traditional look, with its sleek raised deck and a sheerline sweeping back to a two-foot freeboard at the nearly eight-foot-long cockpit, is one of its main attractions.

Tim grew up in Marblehead where his father had a boatyard. He says he could row a boat before he could ride a bike.

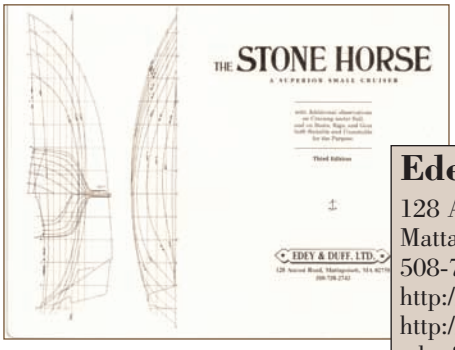


**Wild Pigeon** ***(hull #1, shown with Edey & Duff crew Joe Keogh, David Davignon, and Peter Duff, above) begins her transformation at the Edey & Duff yard. At left, with a new paint job, running rigging, and plenty of TLC, hull #1 has become*** **Naomh Sean.**

After he left Boston University in 1972 with a B.A. degree in English, Tim headed back to boats and worked at the Graves yard in Marblehead until he realized that as long as he worked on boats he wouldn't be able to afford one.

He moved on to marine insurance and worked in the field for years before circumstances persuaded him that the law would be his profession. Specializing in municipal law, Tim established a practice that fascinates him and, best of all, leaves some time for sailing. During these career transitions, Tim was satisfying his sailing urge by borrowing his brother's Marshall Cat Sandpiper.

Linda, a science teacher and school administrator, was new to sailing when she met Tim. She grew up in Medford, Mass., with powerboats and fishing. The water is a comfortable world to her. Sailing was a new discovery. She enjoyed sailing the 16-foot Sandpiper so when the two started looking for their own boat, the 23-foot Stone Horse seemed a logical next step.

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*"Even hull #1, built in Peter Duff's living room and herb garden, is still riding gloriously in wind and waves off the Massachusetts coast."*

"I'm a traditionalist," Tim says. "I was brought up in a family connected with the ocean and yachting — a conservative environment. I think I understand the aesthetics as well as the mechanics. The notion of an ugly boat is anathema to me. So when Linda and I decided to get a small sailboat, I naturally inclined toward a more traditional design. The boat had to be aesthetically pleasing."

## Seemed right

Tim's father had known the Crockers through his marine connections so, during family conversations about available boats, the Stone Horse was singled out. The couple watched sailboat ads for a while. When they spotted a Stone Horse that seemed the right age, price, and location, they called Dave Davignon, who brokered the purchase of their *Starlight*, formerly *Peaconnett*. For the past two years they have happily sailed *Starlight* on Lake Winnipesaukee in New Hampshire. They live a five-minute walk from Corinthian Yacht Club where *Starlight* is moored.

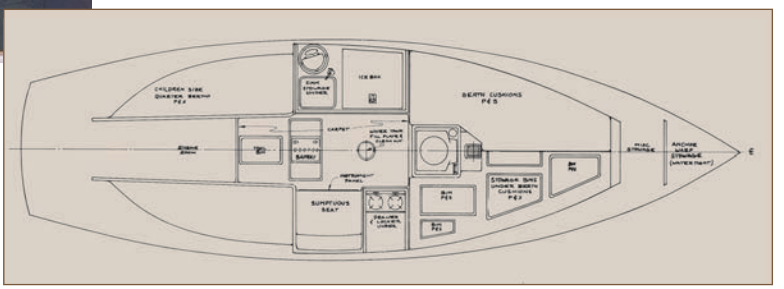
"It's a beautiful looking boat," Tim says. "An aesthetically pleasing boat is likely to sail well. With the Stone Horse, that

has certainly been our experience. We've even been pleased with her performance in light air. The boat has 2,000 pounds of lead in the keel, and you might not think it would sail well in light air but we've kept up with bigger boats in light air — to their surprise! And she tacks great. It's just a beautiful boat!"

Tim and Linda Bates and Bill McBrine echo most of Edey & Duff's criteria for the essential characteristics of a cruising sailboat, listed in their Stone Horse treatise:

- She must be easy to handle. . . . She should be directionally stable, yet have authoritative rudder control and a small turning circle.
- She must be comfortable . . . A cruising boat should have easy, graceful motion, and be dry . . .
- She must be seaworthy . . . fast . . . beautiful . . .

*"Tim grew up in Marblehead where his father had a boatyard . . . His father had known the Crockers through his marine connections, so during family conversations about available boats, the Stone Horse was singled out."*



***Belowdecks on* Starlight *with Linda Bates, above, and the Stone Horse accommodation plan, at right.***

## Still in print

Tim and Linda and Bill are thoroughly familiar with *The Stone Horse, a Superior Small Cruiser*. Bill says he thinks he's read it at least a thousand times. There must be thousands of other readers of the work out there in the world. Although only 150 Stone Horses have been built, Dave Davignon says 50,000 copies of the booklet have been sold at $5, and it's still in print. Although Edey & Duff were addressing the Stone Horse in particular, in lucid prose they address other cruising and boating issues as well. It's impossible to board a Stone Horse without thinking of their cogent explanation of the rationales behind the boat's design, construction, and appointments.

Despite the incredible distribution of what is essentially a marketing piece, the Edey & Duff yard hasn't built a new Stone Horse in four years, Dave says, primarily because the cost of a new one would be so much greater than the purchase price for a used one. In October, Edey & Duff, which is usually the broker for used sales, advertised five Stone Horses, all built in the 1970s, for prices ranging from $14,500 to $19,995.

"They're pricey but worth it," Tim Bates says.

As with hull #1, the Bates' 1984-built Stone Horse needed only cosmetic work when they bought it. Tim and Linda have repainted the boat, choosing to paint the wood spars because the brightwork finish had not been well kept up. They redid the teak with Cetol. They also replaced the running rigging and backstay, but they continue to sail with the original tanbark Harding sails.

## Tan next time

Bill replaced the sails on *Naomh Sean* with white Neil Pryde sails, mostly because he plays hockey with the local Neil Pryde salesman. He's happy with the sails but is thinking perhaps he'll go to Hood's tan Egyptian cloth next time around. He had the sailmaker put the number 1 on his main, he says with a big grin.

Neither owner has replaced the auxiliary inboard, although Bill had some problems with the hoses on *Naomh Sean's* BMW 7-hp single-cylinder. He and his crew replaced the hoses and solved the problem.

At Pleasant Park, a powerboat club, Bill says his 7-hp engine is a source of great amusement. He's delighted to lift the cockpit hatch covering, showing the easy open access to the engine that all Stone Horse owners enjoy (see photo on Page 8). The engine also can easily be reached from either of the tiny quarter berths or from the cabin.

"They call it my coffee grinder," Bill says, as he replaces the cockpit cover and flips the switch so visitors can appreciate the purr of the little engine.

According to Edey & Duff, the model for the first E&D Stone Horse — Mait Edey's 1938 wooden Stone Horse — had no auxiliary power, but the company decided to offer two engine alternatives with the composite version: a 7-hp, single-cylinder BMW or a 10-hp, two-cylinder Westerbeke. They note that three owners chose to have outboards and like them, but Edey & Duff comment, "We don't like the blasted things."

## Six owners

*Naomh Sean* evidently had a Westerbeke originally. Bill doesn't know when the switch to a BMW occurred. He believes the boat has had as many as six different owners,

judging from the file kept on the boat at the Edey & Duff offices.

Most Stone Horse owners use the little cruising boat for short trips or daysailing, but Dave tells stories about Stone Horses cruising to Alaska and Hawaii and up and down the East Coast. And at least one Stone Horse owner is a liveaboard.

Edey & Duff gives an award for the most interesting adventure at its biannual parties in January and July. This year the company has asked Stone Horse owners to write anecdotes about their Stone Horse adventures and send them in, says Bill, who probably has 365 adventures just from the past year. His pleasure in the boat so delights him that he has given Edey & Duff an award for their work on the boat and general all-around help. "They are the best boatyard on the coast," he says.

Of course there's no headroom in the boat, but the bunks are comfortable and there is plenty of storage space for one or two people. One of the treasures left to Bill by the former owner, indicating his serious cruising intent, is a set of homemade harnesses and bronze rings at strategic points on the boat to which to tether the harnesses. Bill hasn't used the harnesses but he has stayed aboard overnight on occasion.

*"Bill was not deterred by the green slime. He knew he wanted a Stone Horse. He could tell the hull was sound."*

***An orignial cast-iron cabin heater is a prized addition to* Naomh Sean, *at top. Bill McBrine, above. Conveniently, the engine can be accessed through the hatch just in front of the companionway hatch. True to its workboat origins, the hatch in the original wooden Stone Horse was probably designed to be used as access for a fish hold.***

## Complex regulations

Tim and Linda overnighted once at the private boathouse of Linda's family on Alton Bay, but they generally daysail. The overnighting regulations are formidably complex on Lake Winnipesaukee, Tim says. Still, they enjoy their day and evening sails. In the summer they can come home from work, walk down to the yacht club, and sail away for long summer evenings surrounded by gentle New Hampshire hills.

They agree that the sailing on Winnipesaukee is best during the week and in the fall when the popular lake is not inundated with summer and weekend visitors, but even in the summer a sail in their steady *Starlight* is renewing.

The Stone Horse is equipped for coastal cruising. The head issue is solved with a Porta Potti. The boat has an 11-gallon water tank with hand-operated pump, a non-draining sink, and a non-draining icebox. The little sink can be lifted out. The icebox has a pump to bail out melt or condensation water.

The boats also can be equipped with a little cast-iron cabin heater. The heater that came with hull #1 was gone when Bill acquired his boat, but Dave Davignon found one of the originals for him (see photo at left). Bill has even installed a little rug — the original boats were equipped with a bit of carpet — easy to shake out and much nicer for bare feet, Edey & Duff remark in the Stone Horse treatise.

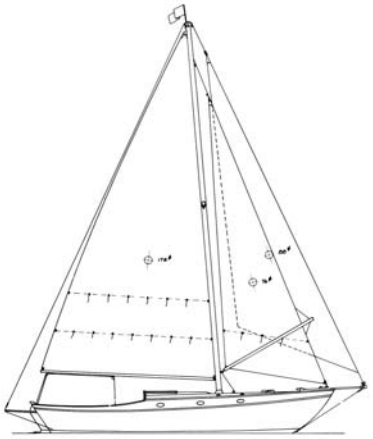
## Molded seats

The two seats in the cabin were molded for the purpose with the backs slightly slanted for true comfort and set so that long legs can stretch out. One seat — called "the Throne" — fits over the Porta Potti. The other — called the "Sumptuous Seat" — is on the starboard side facing the sink.

"It's really comfortable in the cabin," Bill remarks, during a lunch break from his job with the Massachusetts Department of Revenue, Bureau of Special Investigations. He reminisces about the crew's good times and conversations while they relaxed in the cabin and cockpit between bouts with Massachusetts Bay high winds.

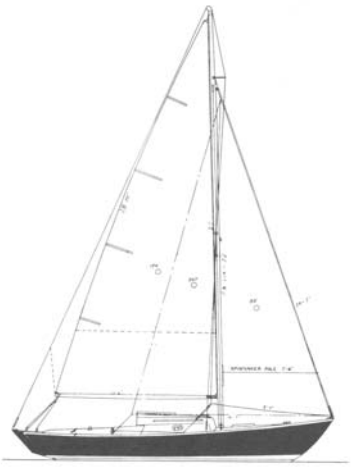
"I could sit here all day," he says, at ease in the Sumptuous Seat. "This boat has brought a lot of happiness to the people I sail with."

*Gail has been a freelance writer and photographer – primarily in the boating field – for 22 years and has been published in most of the major boating magazines. She is the founder of a stock photo company, North Country Photos.*



*Stone Horse*

*Quickstep*



*Sea Sprite 23*

# The Stone Horse

## *A raised-deck Crocker design that still receives admiring glances*

**by Ted Brewer**

The Stone Horse is a vessel I've long admired. Her design was based on a wood yacht from the board of S. S. Crocker, a master at drawing up the raised-foredeck type of yacht, and I've respected both the beauty and practicality of his creations, in particular the lovely gaff-rigged ketches *Macaw* and *Gardaloo*.

Two small yachts that fit into the general daysailer/ overnighter category with the Stone Horse are my own mid-1970s Quickstep design and the popular Carl Alberg-designed Sea Sprite 23.

The Stone Horse and Sea Sprite are similar in many ways. Both are fairly husky little boats with displacement/ length ratios well over 300, both have modest beam, and both have fairly high ballast ratios in order to obtain the stability to carry a decent sail area. The 326 square feet sail area of the Stone Horse, by the way, is based on 100 percent foretriangle (as scaled by me off a small drawing) and is not the advertised sail area of 339, which includes the areas of both the jib and the staysail.

Quickstep's 1977 design, while a long way from new, is still far enough removed from that of the Stone Horse to have been created in an era when we designers were learning to utilize lighter displacement in order to improve performance and, at the same time, obtain the necessary stability by more generous beam. It's interesting to note that the Sea Sprite has roughly the same displacement and ballast as the Quickstep but also the narrower beam of the Stone Horse. As a result, it seems unlikely that she would stand up to a stiff breeze as well as the others. Also, her six-inch-shallower draft does not allow her generous ballast to be carried as low or as effectively as it might be.

If I were a betting man, which I'm not, I'd have to say that I'd bet the Quickstep, with her much more cut-away keel, would be the choice in light-medium air, and the Stone Horse would shine when it blew up a bit, say in small-craft-warning conditions. Then her very long keel, husky displacement, and high-ballast ratio would give her the edge, certainly in steadiness and motion comfort, if not in speed.

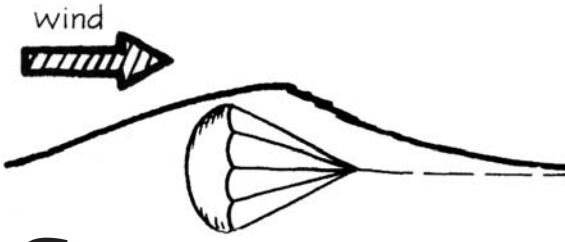
None of these little craft can offer the epitome of comfortable weekend accommodations, of course, but the Stone Horse has the edge with a very well thought out arrangement, and the Sea Sprite is third on the list. The short waterline, traditional long and pretty ends, low freeboard, narrow beam, and short trunk cabin of the classically styled Sea Sprite simply do not add up to a great deal of usable space, either in the cabin or in the cockpit.

Still, all three of these craft are viable daysailers and will give the budding sailor or the small family a lot of fun for the dollars invested. The skipper interested in racing might well pick the Sea Sprite, as there are club fleets active in several areas. But if I had my choice? Well, as I said, I've always admired S. S. Crocker's raised foredeck designs so I'd love to spend a month cruising the islands of the Northwest in his beautiful little Stone Horse. I know she'd be a lot of fun, and she would certainly receive a lot of admiring glances wherever we sailed.

| | Stone Horse | Quickstep | Sea Sprite 23 |
|---|---|---|---|
| **Length Over All** | 23' 4" | 23' 9" | 22' 6" |
| **Length Water Line** | 18' 4" | 19' 0" | 16'3" |
| **Beam** | 7' 1" | 7'11" | 7' 0" |
| **Draft** | 3' 6" | 3' 5" | 3' 0" |
| **Displacement** | 4,490 lb. | 3, 300 lb. | 3,350 lb. |
| **Ballast** | 2,000 lb. | 1, 300 lb. | 1, 400 lb. |
| **Sail Area** | 326 sq. ft. | 259 sq. ft. | 247 sq. ft. |
| **Displ/Length Ratio** | 325.5 | 215 | 348.5 |
| **Ballast/Displ Ratio** | 44.5% | 39.4% | 41.8% |
| **Sail Area/Displ Ratio** | 19.2 | 18.7 | 17.7 |

*Ted is a* Good Old Boat *contributing editor.*

# *Drag devices:* Sea anchors & drogues




*by Cary Deringer*

Taking the weather for granted is easy to do on a nice day. Sails are filled with a gentle wind, and the boat heels slightly as it slices through rippling water shimmering beneath a warm sun. On days like these it is hard to imagine that sailing can be a totally different experience when conditions turn rough.

During extremely heavy weather sailors may wish to deploy a drag device, such as a parachute sea anchor or a drogue. To do this, of course, you need to have a drag device aboard before you leave shore. That calls for making a major purchasing decision in preparation for circumstances you hope you never have to face.

Depending upon personal preference and boat design, the choice will vary from one sailor to the next. These issues complicate this decision: each device is a specialized piece of gear, each produces a very distinct result when deployed, and storm conditions vary.

Some boaters have solved the problem by owning several types of devices. Others feel the need to choose because of issues such as cost, storage space, and the additional weight of the gear on an already heavily loaded cruising boat. For those who must choose between a parachute sea anchor and/or one of the two basic types of drogues, it is helpful to understand some of the basic principles behind these devices.

## A quick comparison

A parachute sea anchor is typically deployed off the bow. It will almost stop the boat, allowing only a very slow drift downwind. It is a passive device. It does not demand the continuous attention of the crew. During heavy weather, the sea anchor allows the captain and crew to deal with exhaustion and seasickness, to maintain adequate nourishment, to tend to the boat, and to maintain rational decision-making abilities. To enable a safe landfall, a sea anchor can hold a boat in a favorable position until a heavy fog clears or daylight arrives. It can keep a boat off a lee shore until engine repairs can be made or help arrives. It provides a stable boat from which it is easier to dive, fish, or check your navigation.

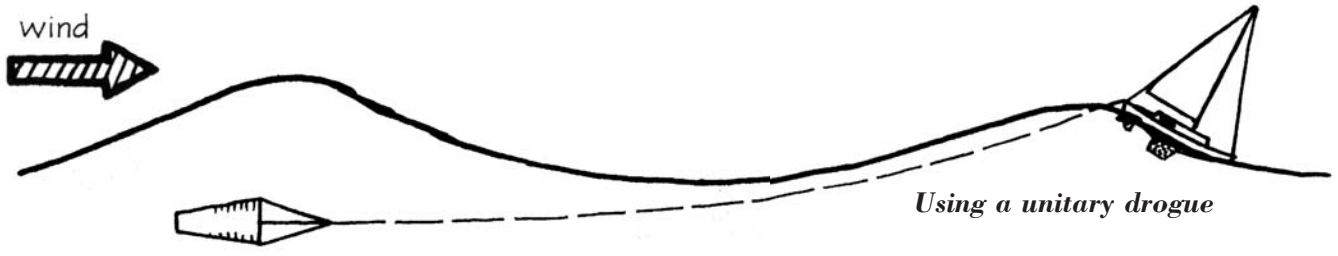
A drogue, on the other hand, is deployed off the stern. There are two basic types of drogues. The low-drag, speed-limiting drogues are sized to allow the boat to maintain three to six or perhaps even seven knots in conditions where it might otherwise be driven well above hull speed. The slower speed prevents a boat from surfing down wave fronts. With the stern held down, the chance of pitchpoling is reduced. When speed is controlled in this way, yawing is reduced, making it easier to keep the boat from turning beam to the waves. The low-drag speed-limiting drogue is an active device. It makes steering easier, but it does not eliminate the need for the crew to be in the cockpit steering the boat. Most drogues are of this type.

The medium-pull drogue is also deployed off the stern, but it brings the boat almost to a stop. Downwind drift will be 1 to 1½ knots in storm conditions, which is not fast enough to steer. The designer of the Jordan Series Drogue recommends that the crew go below and strap themselves in. The medium-pull drogue is a passive device like the parachute anchor.

## Parachute sea anchors

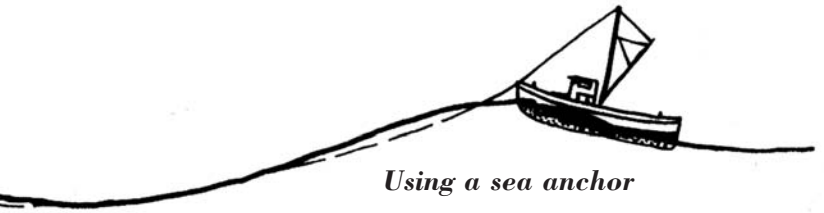
Historically, a sea anchor was anything from a leather bucket to a cone-shaped canvas scoop used off the bow to hold the boat in a safe position when faced with heavy wind and waves. Later, commercial fishermen and then sailors began using military surplus parachutes as sea anchors for the same purpose, thereby coining the name parachute sea anchor. These large-diameter devices have evolved over the years and offer much more holding power than their cone-shaped cousins.

Size is an important, and somewhat controversial, issue. A parachute sea anchor must be of an appropriate diameter to prevent the bow from falling off the wind and turning the boat broadside to the seas. Too small, and there may not be enough purchase power to accomplish this task. Some advocate a "when in doubt, go larger" attitude. But an oversized canopy can have its disadvantages, too.




***Using a unitary drogue***

*Illustrations from* Heavy Weather Tactics, *by Earl Hinz, Paradise Cay publishers.*



*Using a sea anchor*

# *Surviving storms with the aid of drogues and sea anchors*

A boat forced aft against an oversized canopy that is "fixed" in the water can present problems. In his book, *Heavy Weather Tactics Using Sea Anchors and Drogues*, Earl Hinz points out, "The powerful but irregular motion of the sea when resisted by a sea anchor can produce great strains on the sea anchor gear. The dynamic of loading will give all of the problems found in ground anchoring, such as overloading cleats and Samson posts, causing severe chafe on the rode, and occasionally burying the bow in green water." Larger chutes tend to take up more storage space aboard, cost more, and are often more difficult to deploy and retrieve.

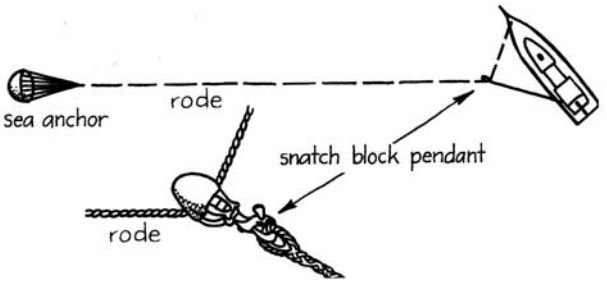
The most frequently expressed concerns regarding the use of parachute sea anchors have to do with the deployment and retrieval process. One danger: when deploying a parachute sea anchor the chute can catch the wind and open up on deck — a common problem with the old military surplus chutes. Another deployment foul-up can occur if lines, either shroud lines or the trip line, become tangled during storage or deployment.

Depending upon the company from which you purchase a parachute sea anchor, the deployment procedure may vary slightly. In general, a parachute sea anchor is dropped off the bow to windward. Some sea anchors come with deployment bags that prevent the parachute from filling with air when being launched. In the absence of such a bag, it is helpful if the chute is wet when it is put over the side. Once deployed, the rode is snubbed to allow the chute to open. Then a sufficient amount of line is payed out. Ideally, both boat and anchor should ride in the same wave phase even though the parachute sea anchor may be several wavelengths away.

## Sea anchor retrieval

Deploying the parachute sea anchor is only half of the procedure. Retrieving it successfully is the other half. A trip line can make the retrieval process easier. The next choice is whether to use a full or partial trip line. Full trip lines extend from the apex of the chute all the way back to the boat; partial trip lines run to retrieval floats.

If a partial trip line is used, retrieval involves motoring slowly up to the float while the main anchor rode is taken in gradually. A boathook can be used to snag the trip line, which is then pulled in, followed by the parachute sea anchor and the remaining rode. Maintaining tension in the rode as you power up to the retrieval float and timing your moves with ocean waves or swells are the keys to successfully bringing the parachute sea anchor onboard.




***Lin and Larry Pardey's sea anchor bridle***

If the rode is allowed to go slack before the trip line is activated, the canopy can change positions in the water. This scenario would be similar to having a large-diameter bucket hanging from the bow beneath the water surface. With the bow weighted, it is unable to rise up over oncoming waves and instead causes the bow to be pulled down. Retrieval of the parachute sea anchor from this position is more difficult, especially without a trip line. Smaller parachute sea anchors can be simply brought in by hooking a shroud with a boathook and dumping the chute by pulling on it.

## Controversial matter

Another concern about using parachute sea anchors is whether they will always hold the bow of a boat upwind. This is a controversial matter. Left to its own devices with no drag device, a modern monohull will normally lie ahull, meaning beam to the wind. This is caused at least in part by the center of aerodynamic drag (force of the wind) being forward of the center of hydrodynamic drag (force of the water acting on the hull). This is particularly true if the boat is not carrying sail. The sea anchor must overcome this natural tendency and pull the bow into the wind.

In his book, *Drag Device Data Base*, Victor Shane has collected the experiences of sailors using parachute anchors and other drag devices in heavy weather. His findings strongly indicate that multihulls (using bridles) are held head to wind, and yaw is minimal. The picture concerning monohulls is less clear. Some boats did very well; others did less well. There were not enough cases reported to show clear trends, but it seems that schooners and yawls did better than sloops and cutters, and fin-keeled boats did better than full-keeled boats. It also seems that there was less yaw as the wind speed increased. These "trends" are vague, however. Lin and Larry Pardey, for example, are quite satisfied with the performance of their full-keeled cutter when using a parachute anchor. They also use a special bridle arrangement which is intended to hold the bow as much as 50 degrees off the wind. California-based manufacturer Fiorentino's sea anchor sales literature suggests a similar arrangement (see illustration this page).

Recommendations on rode thickness and length vary among the different manufacturers, but nylon is the material of choice because of its elasticity. The loads on a parachute sea anchor rode may be equal to the displacement of the boat in storm conditions. The rode is one accessory that can serve double-duty elsewhere, such as for use with ground

tackle. However, using it for other purposes reduces its strength due to simple wear and tear. It may be better to have such gear specifically assigned for use solely with the parachute sea anchor if space and budget permit.

There are a few other issues to address when using a parachute sea anchor system. Lashing the tiller with a semi-flexible lashing such as a heavy shock cord, for example, reduces the chances of rudder damage when severe waves force the boat astern. Chafe is likely to be the most serious problem encountered when using any drag device. It deserves advanced planning. Once the sea anchor is deployed in storm conditions, the load on the rode will make adding chafing gear difficult, and the bow will not be an easy place to work. Depending upon conditions and boat design, a riding sail aft may be needed to reduce the amount of yaw that might be encountered.

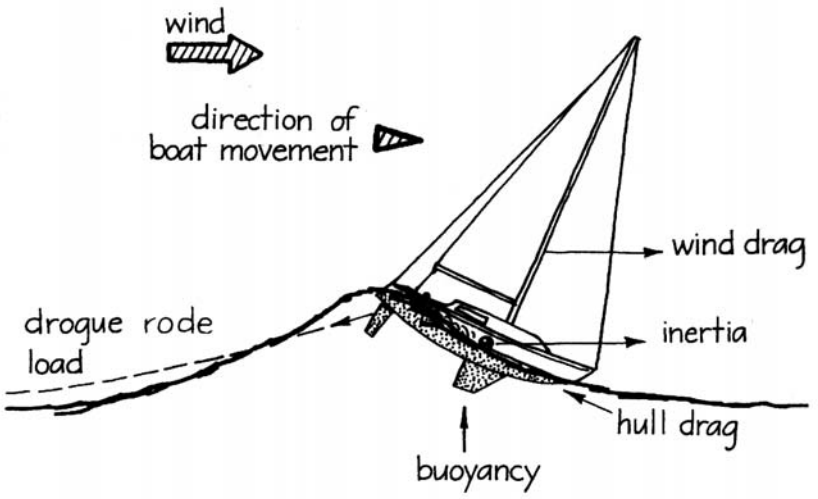
## Drogues

While a monohull's "natural" tendency is to lie ahull, in most cases it is quite easy to get these boats to be fairly stable sailing dead downwind under bare poles. Drogues take advantage of this natural stability. There are both unitary and series drogues. A unitary drogue is deployed as a single drag device attached at the end of a length of rode. A series drogue utilizes smaller drag devices, such as cones, all of which are attached along a length of rode.

## Unitary drogues

Most drogues are unitary drogues, and most unitary drogues are intended to reduce a boat's speed to a safe and manageable level while allowing for a fair amount of directional control by the helmsman. Keeping the boat below hull speed can prevent surfing down large wave fronts and punching the bow into the back of the next wave in the trough. These drogues are referred to as speed-limiting or low-drag drogues to contrast them with medium-drag drogues (like the Jordan Series Drogue which is designed to virtually stop the boat). These drogues require active participation from the crew, but allow the helmsman greater control and ease of steering. In situations where it is desirable to keep moving to reach shelter, or to maneuver to a more favorable part of the weather system, these devices are preferable. However, the same low drag that grants more steering control can also make the boat more vulnerable to capsizing, broaching, or pitchpoling in a "once-in-a-lifetime storm."

In addition, with a single drag device at the end of a long rode, the boat is more susceptible to large waves that approach from an angle. In order for a boat to get assistance from the drogue, it must position itself by swinging at the end of the long rode. The time it takes to do this can be crucial, and failure can result in a wave hitting the boat broadside.




***Forces on a boat towing a drogue***

## Series drogues

Series drogues were invented and developed by Donald Jordan. These drogues are deployed off the stern but, like the bow-deployed parachute sea anchor, they are intended to almost stop the boat. In this manner, the stern of the boat faces toward the wind and waves. The advantage of this is that the boat is much more stable pointing and sailing slowly downwind. There is less tendency to yaw because the mast and other high *wind-drag* items are downwind of the keel and rudder which are the high *water-drag* items.

A properly sized series drogue will keep the boat speed down to 1 to 1½ knots in storm conditions, so it does not require the crew to steer. In this attitude if the boat is struck by a large breaking wave, which is the most dangerous threat to a boat in heavy weather, the boat will be briefly accelerated up to wave speed, and then as the wave passes it will be dragged back by the series drogue. Unlike the sea anchor, the series drogue is intended to control the loads on the rode, fittings, and attachment points by allowing the breaking wave to accelerate the boat. It is not intended to have enough drag to resist this large and rapidly developed force. It does have enough drag to quickly bring the boat speed back down after the breaking wave passes. It will prevent the boat from being thrown into the trough. Donald Jordan asserts that a breaking wave will not damage a boat by striking it but can damage it by throwing it into the trough.

The Jordan Series Drogue typically is made up of more than 100 small fabric cones. These smaller drag devices are located all along the length of the rode. Therefore, if half the cones are inactive within the slack portion of a wave, the other half are still capable of maintaining a hold on the boat. Also, if a large wave is approaching from an angle off the stern, the drag devices closer to the boat, where the rode elasticity is low, will create a load much faster than if a unitary drogue were being towed at the end of a long

## Books

***Drag Device Database***, by Victor Shane
***Fastnet Force 10***, by John Rousmaniere
***Heavy Weather Sailing***, by K. Adlard Coles
***Heavy Weather Tactics Using Sea Anchors & Drogues***, by Earl Hinz
***Oceanography and Seamanship***, by William Van Dorn
***Rescue in the Pacific***, by Tony Farrington
***Storm Tactics Handbook***, by Lin and Larry Pardey
***Survivor***, by Michael Greenwald
***The Sea Anchor and Drogue Handbook***, by Daniel Shewmon

## Equipment suppliers

**Ace Sailmakers**
New London, Conn.
Jordan series drogue, kit or assembled.
860-443-5556
<http://www.acesails.com>

**Attenborough Sea Drogue**
Surrey, United Kingdom
Stainless steel "mine sweeper" drogue
44-1483-300366

**Cal-June, Inc.**
North Hollywood, Calif.
USCG-approved cone
818-761-3516

**Creative Marine Products**
Natchez, Miss.
Drogues
800-824-0355
<http://www.creativemarine.com>

**Fiorentino Para Anchor**
Newport Beach, Calif.
Parachute sea anchors
800-777-0732
<http://www.paraanchor.com>

**Hathaway, Reiser & Raymond**
Stamford, Conn.
Galerider drogue
203-324-9581
<http://www.hathaways.com/galerider>

**Para-Anchors International**
Summerland, Calif.
Parachute sea anchors
805-966-0782
<http://www.dddb.com>

**Para-Tech Engineering, Co.**
Silt, Colo.
Sea anchors and drogues
970-876-0558
<http://www.seaanchor.com>

**R. D. Mengler**
Osborne Park, Western Australia
Sea anchors
011-61-9-244-1534

**Sailrite**
Columbia City, Ind.
Series drogue kits
219-244-6715
<http://www.sailrite.com>

**Seabrake International Pty. Ltd.**
New South Wales, Australia
Seabrake drogues
61-29-667-0480

**Shewmon, Inc.**
Safety Harbor, Fla.
Sea anchors and drogues
813-447-0091
shewfla@aol.com

**W. A. Coppins Ltd.**
Motueka, New Zealand
Sea anchors and drogues
011-64-3-528-7296

rode. The drogue is weighted by chain at the end, which makes it function below the wave action and keeps a constant tension on the rode.

### High stress

Because of the way the Jordan Series Drogue works, the stern will be struck by breaking waves. This is a controversial aspect of the device. Critics assert that the transom, cabin trunk, and drop boards must be capable of taking the full impact of breaking waves and that the impact will be severe. Donald Jordan contends that experience with his drogues has proven that this is not a problem. In any case, the cockpit should be able to drain water quickly, and all drogue attachments should be well backed up to help spread the loads imposed upon the gear. In addition, it is not intended that the crew be in the cockpit when the drogue is in use. The speed will be kept too low to allow the boat to be steered, and the crew should go below.

Deployment of any drogue generally takes place over the stern. The whole assembly should be carefully checked to ensure knots are properly tied, shackles are safety wired, the bitter end is attached to the boat, and the system is free of tangles with itself as well as parts of the boat and crew.

When the boat is in the trough of a wave, its speed is at its minimum. This is the time to deploy the drogue. In the case of unitary drogues, a portion of the rode nearest the boat is deployed first. As the boat moves forward, the water will pull the rode along in a bight. More of the rode is paid out until the drogue itself is reached. The device, previously laid out and checked for tangles, is then released. The series drogue has a length of anchor chain at the end to keep it below the surface. This is dropped into the water, and the drag from the chain is allowed to pull the rest of the drogue overboard. The series drogue is intended to be *permanently* attached to a bridle on the transom and ready for deployment at any time.

Unitary drogues can also use an adjustable bridle setup. The main rode is led off to one side of the transom and secured to a strong cleat or reinforced attachment point, preferably forward of the rudder post to improve steering. A snatch block with a pendant line tied to it is then snatched onto the main rode. The pendant line is run off the other side and led to a winch for adjustment. This system allows the crew to position the boat's stern to oncoming waves, exposing, for example, only the quarter portion of a flat transom to the full impact of a breaking wave.

Retrieval of the drogue must be done carefully due to the forceful drag produced by the device in the water. On a sailboat, winches can be used to haul in the main rode once the pendant line is released. When operating under power, the rode can be taken to the bow and brought in as the boat motors back to the drogue.

### Summary

Once you have made a decision to purchase a parachute sea anchor or drogue, take the time to research all available options. Two books that are must reading before you select your drag device are the *Drag Device Data Base* by Victor Shane and *Heavy Weather Tactics Using Sea Anchors and Drogues* by Earl Hinz.

"Silver-bullet storm tactics" are hard to come by because of the variety found in weather conditions, boat designs, personal preferences, and crew capabilities. There are other tactics to employ in heavy weather, such as running under bare poles and heaving-to. Using a drag device requires prior planning since the equipment must be aboard. If it is to be effective it must be ready for deployment, and you must be comfortable using it. If you equip your boat with drag devices, practice deploying them in moderate conditions. Get familiar with the components. Make sure all crew members know the procedure and their responsibilities.

*Cary and her husband, Bob, are currently sailing aboard a 36-foot steel cutter,* Illusion. *They are in New Zealand and plan to cruise for five years or more with hopes of completing a circumnavigation.*

# Carl Alberg

Nan Wallace

## *This pioneer brought many early fiberglass production boats from design board to dockside*

**by Scott Wallace**

Many sailing enthusiasts can immediately spot an Alberg-designed boat. Characterized by a spoon bow, pleasing sheer, moderate overhangs, a distinctive wooden cockpit coaming, and pedestal-mounted winches, Alberg boats convey a traditional and pleasing look. Carl Alberg brought many of the first production fiberglass cruising sailboats from design board to dockside.

In fact, Carl Alberg influenced a whole new generation of sailors. During the 1930s and 1940s he established a solid reputation with his work at the John Alden company. Later with his own company, he designed many mid- to large-size wooden yachts for wealthy clients.

His work from the late 1950s through the time of his death in 1986 was for a whole new market — the middle-income sailor who may have been new to sailing or was perhaps upgrading from smaller daysailers or racers. Carl's legacy for these sailors was a well-found, well-designed, quick cruising sailboat that could provide a safe and exciting family sail without the threat of easy capsize, a boat that would attract admiring looks wherever she went, a boat that any discerning owner would be most proud to own. Carl Arne Alberg may be no longer with us, but his designs live on.

Born April 11, 1901, in Gothenburg, Sweden, he was the son of Alma Larsson and Carl Alberg, a Gothenburg merchant. Carl and his brother often sailed in Gothenburg's harbor with their father. Of his home he said, "The harbor was always filled with ships and boats of all kinds, and when we weren't sailing there, the family usually vacationed on an island off the coast where my father, brother, and I used to race each other in small sailboats."

### Perfect bow

Yacht design was on Carl's mind even as a youth. In 1913, four years prior to his admission to college, he wrote of the difficulties of choosing the perfect bow design: "The problem is the eternal one, to eliminate the faults of the two extremes (fineness and fullness) and combine as much as possible their two good points." In 1917, Carl entered the Chalmers Institute of Technology, in Gothenburg, where he studied naval architecture and marine engineering until 1919.

By 1925, Carl had emigrated to the United States and moved to Lynn, Mass., where he found work as a rigger for General Dynamics in nearby Quincy. Andrew Vavolotis, founder of the Cape Dory Yacht Co., and now president of Robinhood Yachts, relates: "Carl worked with the master shipwright, Brorr Tamm, while he was working in Quincy."

Later, Carl worked for the Lawless Boatyard in Neponsett, where he met John Alden, who hired him as a designer after seeing some of his drawings. Carl said: "I enjoyed working with Alden very much. He was a wonderful guy, pleasant, calm, never getting excited, and I learned quite a bit from working with him. His designs were conservative. He concentrated on seaworthiness, comfort, and boats that would sail on their bottoms, and that's pretty much what I've tried to do with my boats."

Carl was responsible for Alden design #583, a schooner built in 1934. In 1937, *Malabar XI*, yawl rigged, a slightly modified 583, was built for John Alden's own use. This boat turned out to be a fast one, coming in second in Class B in the

1937 New London to Gibson Island Race. In 1938, Carl designed *White Wings*, a gorgeous 50-foot sloop built by J. J. Taylor and Sons, of Toronto, for Percy Grant of the Royal Canadian Yacht Club. This was the first Canadian boat to win the coveted Lake Ontario Cup.

## A better ketch

Carl also designed John Alden's ketch, *Malabar XII*, which was built in 1939. While many of Alden's earlier *Malabars* were schooner rigged, at this time Alden felt that the "Twelve" was right for a ketch rig since "a ketch of this size can have less sail than a schooner of the same model, and yet be just as fast." In 1941, when asked to recommend a design for long ocean passages, the "Twelve" was Alden's choice.

Immediately after Word War II, Carleton Mitchell bought *Malabar XII*, renaming her *Carib* and cruising her extensively in the West Indies. *Malabar XIII*, design #756, also came from the drawing board of Carl Alberg. This boat represented a compromise by Alden between racing efficiency and ease of handling by a small crew. In 1948, under the ownership of Morgan Butler, *Malabar XIII* won her class in the Newport-Bermuda Race.

Another of Carl Alberg's classic designs in wood for Alden was *Tioga Too*, a 53-foot yawl commissioned by well-known New England sailor Harry E. Noyes, who specifically asked Carl to design her lines and other plans. Built in 1939, *Tioga Too* was known for her graceful sheerline, low cabin trunk, and her long, well-balanced ends. The bow was particularly handsome with its clipper profile and decorated trailboards.

When World War II broke out, Carl temporarily left Alden to work for the U.S. Navy in their Charleston, Mass., naval shipyard. Following the war, he once again designed boats for Alden, including a Hinckley 21.

In 1946, Carl left the John Alden company and set up a design shop for himself at 131 State Street in Boston, Mass. For three years, Carl designed wooden boats, such as the Sea Lion and an Alberg 46-foot ketch, but business slowed down, and Carl returned to the Charleston Naval Shipyard for a six-month period during the Korean War.

There he was offered an opportunity to work for the U.S. Coast Guard, where he became chief marine engineer/architect for 10 years. During this period of his life, Carl focused much of his energy on his Coast Guard work. He was also devoted to his family: wife, Irma; daughter, Corrine; and later his grandson, Kaifser Burril . . . all avid sailors.

## Fiberglass transition

Carl made the transition from traditional wooden sailing yachts to fiberglass sailboats in 1958. Everett Pearson, co-founder of Pearson Yachts, remembers, "Tom Potter, who had been working at the American Boat Company, in East Greenwich, R.I., builders of the 23-foot Alberg-designed Sea Sprite, came to us and asked if we would be interested in building a 28-foot Alberg-designed cruising sailboat. This was in the spring of 1958, and we introduced this boat as the Triton at the New York Boat Show in January 1959. Tom Potter convinced us that Carl Alberg was a competent designer with a great deal of experience gained from working with John Alden. His designs were conservative cruising boats, so the conservative cruising sailor would accept them. The first plans we had of the Triton were for wood construction."

Tom Potter was involved in the early days with the Pearson cousins. "Carl worked for John Alden toward the end of John's life," he recalls. "He did designs, many of them magnificent. We found him designing ammunition boxes for the Coast Guard. The Triton got us going . . . he built himself a well-deserved reputation from the boats he designed for us. We must have made thousands of Ensigns. His success with Pearson led to his success at Cape Dory. At Pearson we designed and built the Tritons first. We hoped to sell six, and

***In photo at right: Carl Alberg with Cape Dory Yacht Co. founder Andrew Vavolotis. Facing page: an Alberg 29,* Liberty Call, *owned by George Kendall, sails on the Albermarle Sound, Outer Banks, North Carolina.***

## Carl Alberg's fiberglass designs

- Cape Dory 10
- Pearson Hawk
- Cape Dory Typhoon (daysailer and weekender versions
- Cape Dory Typhoon Senior
- Bristol and Sailstar Corinthian
- South Coast 21
- South Coast 23 (daysailer and four-berth versions)
- Alberg 22
- Cape Dory 22 and 22D
- Pearson Electra and Ensign
- Sea Sprite 23 (see Page 9)
- Kittiwake
- Daystar 24
- Cape Dory 25D and Octavia 25
- Pearson Ariel and Commander
- Cape Dory26 and Octavia 26
- Cape Dory 27
- Bristol 27
- Cape Dory 28
- Odyssey
- Alberg 29
- Alberg 30
- Cape Dory 30
- Cape Dory 31
- Cape Dory 33
- Alberg 35
- Cape Dory 36 and Robinhood 36
- Alberg 37
- Cape Dory 40 and Robinhood 40
- Cape Dory 45 and Robinhood 45

*This list, developed by George Dinwiddie, is available in greater detail on the Alberg 30 Web site: <http://www.alberg30.org/CarlAlberg/designs.shtml>. George cautions that this list may be incomplete. If you know of other Alberg designs, please let us know when you're notifying George, and we'll make a note of it in a future Mail Buoy.*

we actually sold about 800! That really got us going. I put up the money for the tooling for the Triton . . . after the Triton came the Ariel and its daysailing version, the Commander, as well as the Electra and its daysailing version, the Ensign."

Work with Pearson Yachts was seminal in Carl's career; the popularity of the Triton brought him into the yachting limelight. The Pearson story has been told in an earlier article in *Good Old Boat* (November 1999). The Pearson cousins were planning to build dinghies and powerboats until Tom Potter approached them with the suggestion to have Carl Alberg design them an affordable medium-size fiberglass cruising sailboat. The Triton has been heralded as the first mass-produced fiberglass cruising sailboat. Clint Pearson remembers that in March of 1957 he had 12 men working in his garage boatworks. In June of 1957 Everett joined him, and production took off with the introduction of the Triton.

Frederick Corey

John Daniele

Nan Wallace

***No matter what your point of view, an Alberg boat has distinctive lines and shared characteristics. Clockwise from top left: a Bristol 27,* Watercolors*; a Pearson Electra,* Spindrift*; and a pair of Cape Dory Typhoons,* Moana *and* Hornet.**

## A bit stubborn

"Carl's most significant characteristic was a sense of stubbornness in defending his designs and opinions," Everett Pearson remembers. "We asked Carl to reduce his royalties as the volume of business grew, as the Grumman people (who by then owned Pearson Yachts) thought Carl's fees were excessive. He was making three to four times what anyone else in the business was making, and other designers would work for far lower fees. That's why we went to Bill Tripp for the Invicta, and Phil Rhodes for the Vanguard. We later hired Bill Shaw to create our own design team and eliminate paying royalties."

Clint Pearson says of Carl, "He was very easy-going, kind of quiet, with strong ideas . . . he was a good guy to work with." Clint believed his designs provided easily handled boats and rigs: "They won't get you in trouble, plus his boats provided good speed and stability."

Carl designed the 19-foot Bristol Corinthian (*Good Old Boat*, September 2001) as well as the Bristol 27 (March 2001). In addition to his work for Pearson Yachts and Bristol Yachts, Carl Alberg also designed two boats for Whitby Boat Works, an Ontario, Canada, yachtbuilder.

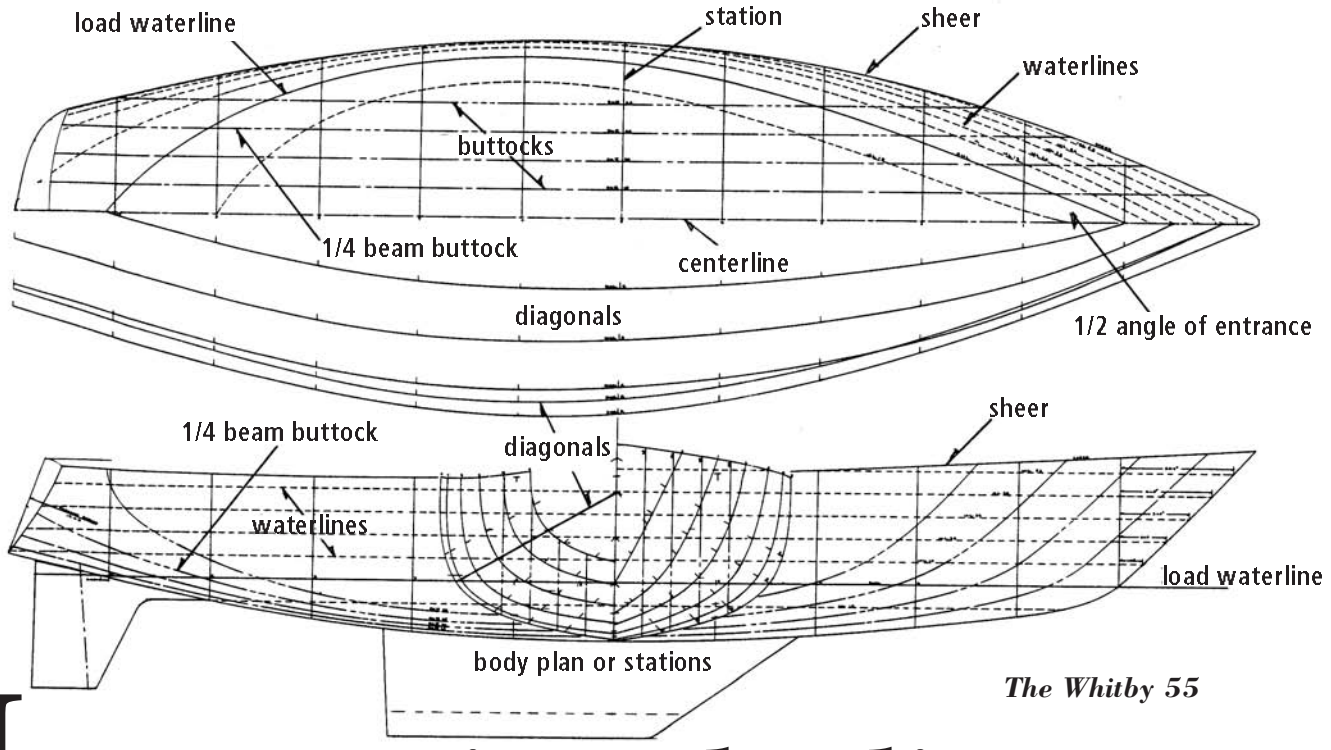
In 1961, a number of yachtsmen from Toronto, Ontario, approached Kurt Hansen of what was then Continental Yacht Sales (later Whitby) looking for a 30-foot fiberglass yacht for club racing. Kurt contacted Carl late in 1961. He developed a design that both thought would sell well in the United States and Canada.

Carl based this design on the heavily built Odyssey boats, and construction started on the first ones in 1962. Another group of 25 from the Chesapeake Bay also was looking for a 30-footer for club racing. When these sailors heard that a Canadian manufacturer of a popular well-built 24-footer was building a 30-footer, they sent members Bud Tomlin and Boyce Beville to Ontario to check it out. Two major groups of buyers, the Great Lakes Toronto-based members and the Chesapeake Bay group, became the first buyers of the new, superbly designed and built Alberg 30. Almost 40 years later, nearly every one of the original Alberg 30s is still enthusiastically raced and cruised. *(More on the Alberg 30 in the November 2000 issue.)* Whitby also built the Alberg 37, a boat designed for offshore cruising.

Carl Alberg's last large and loyal client was Cape Dory Yachts. In 1987, one year after Carl Alberg's death, the Cape Dory catalog offered these Alberg designs: Cape Dory Typhoon Senior, Cape Dory 26, Cape Dory 28, Cape Dory 32, Cape Dory 33, Cape Dory 36, and new for 1987, the Cape Dory Custom 40. *(Several Cape Dory designs are featured in previous issues: 30 in June 1998, Typhoon in November 2000, and the 25D in May 2001.)*

In 1986, after a long and fruitful life, Carl Alberg died in his adopted home, Marblehead, Mass. Bill McGrail, of Marblehead, remembers: "Although I was a member of the Boston Yacht Club with Carl Alberg, I met him only a few times. He was not a man about whom stories were told. He is perhaps best remembered by his work."

*Scott and wife, Nan, enjoy camping, canoeing, and sailing in Ontario. They are members of the Rocky Fork Sailing Club, in South Central Ohio where they sail a Bluenose sloop. Their last boat was a Pearson Electra; their first, a Catalina 22,* Cat Dancing. *For 15 years they have sailed on the Great Lakes and the sounds of the Outer Banks, North Carolina.*




*The Whitby 55*

# Interpreting the lines

## *Forecast a boat's performance by reading between the lines*

***by Ted Brewer***

I trust that readers will appreciate the problem confronting the yacht designer. He has a two-dimensional sheet of paper in front of him, but upon it he has to draw a curvaceous three-dimensional object in such a manner that a boatbuilder can replicate it accurately. Adding to the dilemma is that the drawing will be only ½ to ½₂ the size of the actual vessel; a problem indeed.

The lines drawing of the Whitby 55-foot ketch is shown above. It was drawn about 18 years ago, to a scale of ¾" = 1'0", or 1/16 actual size. Upon it, I've outlined the various lines that the designer uses.

The ***sheer*** is, of course, also the deck edge. The ***centerline*** is the longitudinal center of the yacht. Between these points, the hull is sliced up like a wedding cake to show the builder the actual shape and to permit the designer to complete his hydrostatic calculations.

The ***waterlines*** are like the layers of the cake; the ***buttocks*** and sections are like slices cut from it. The ***diagonals*** are as if some drunken wedding guest sliced the cake at rather strange angles. Each type of line has its story to tell the initiated. You'll note that the drawing shows only one side of the yacht. In the Whitby 55 drawing, the waterlines show the port side, the diagonals reflect the shape of the starboard side, and the body sections show the forward half of the vessel on one side and the aft half on the other. Only one side is shown because the designer hopes and prays that with skill on the builder's end, and perhaps a lot of luck, both halves of the yacht will turn out to be mirror images of each other. It doesn't always happen, unfortunately, but mistakes are rare. Let's consider the lines one at a time.

### Waterlines

These are horizontal slices through the hull, usually evenly spaced, that show the shape of the vessel (looking down on the craft) from the sheer, or deck edge. The load waterline (LWL) is that waterline (WL) at which the designer hopes the boat will float if all his calculations are correct. On the 55, there is only one WL shown below the LWL as the hull is of rather light displacement. There may be several WLs below the LWL on heavier displacement craft or even on lighter yachts if the designer is not lazy and reduces the spacing of the waterlines below the LWL.

I was lazy, and besides, another WL would not have told me anything about the boat I didn't already know.

Basically we have three forms of LWL shape (see diagram on Page 18). The "cod's head and mackerel tail" dates from the 19th century and earlier and featured a fairly blunt bow shape and a fine stern. The Brits still favored it, with modifications, until the *Sceptre* fiasco in the 1958 America's Cup Races. It didn't work. 'Nuff said, but you'll still see a few 1970s and older British designs with this hull shape, full forward and finer aft.

In the 1930s, the "balanced ends" or "symmetrical" model came into favor, particularly in England. These were craft with a finer bow and more fullness in the stern. While the form seemed to have produced an easy helm, one that did not pick up excess weather helm even when heeled, the boats were not particularly fast or weatherly. The term "weatherly," incidentally, relates to windward ability, and has nothing to do with seaworthiness.

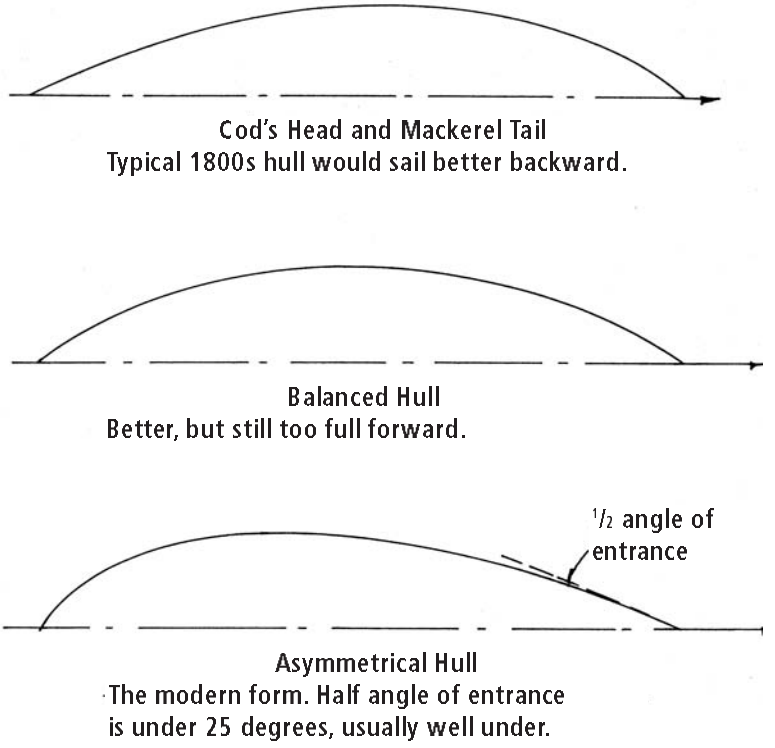
The "wedge shape" is the contemporary form of load waterline and has been used in North America since before the turn of the century. The bow entry is fine, the widest section is well

aft, at about 55 percent of the LWL, and the stern is fairly full. Tank tests at the University of Southampton of models of the Rhodes-designed *Weatherly* and a symmetrical hull showed the former to pitch less in a seaway and to be definitely superior in weatherliness and steering.

The half-angle of entrance (the angle that the LWL at the bow makes with the hull centerline) has fined up in recent years and, while angles of 24 to 25 degrees or more were common in the 1960s, the usual cruiser today will have a half-angle of entrance of 20 to 21 degrees (the Whitby 55's half-angle is 21 degrees). High-performance yachts will show even less, perhaps as low as 15 to 16 degrees. The waterlines forward should be straight or slightly convex and excess hollow should be avoided where possible. Too much hollow forward means even greater angles further aft where the waterline swells out to maximum beam, and this increases resistance in the long run.

Craft with a plumb stem and deep forefoot, such as catboats and some clipper-bowed vessels, require hollow in the forward waterlines, but these are exceptions to the rule in order to avoid overly full diagonals. The entry of such yachts should be kept as fine as possible so the diagonals can be kept fair without the use of excess hollow in the waterlines.

The waterlines in cruising yachts will become increasingly full as they approach the sheer, of course. Many racing craft tend to have quite fine decklines due to stupid rating rules or an attempt to keep the ends super-light. However, cruisers do need some fullness in the ends to provide reserve buoyancy to keep the decks dry in a seaway and to lift the weight of the stores, gear, and ground tackle that such craft usually carry in the bows.

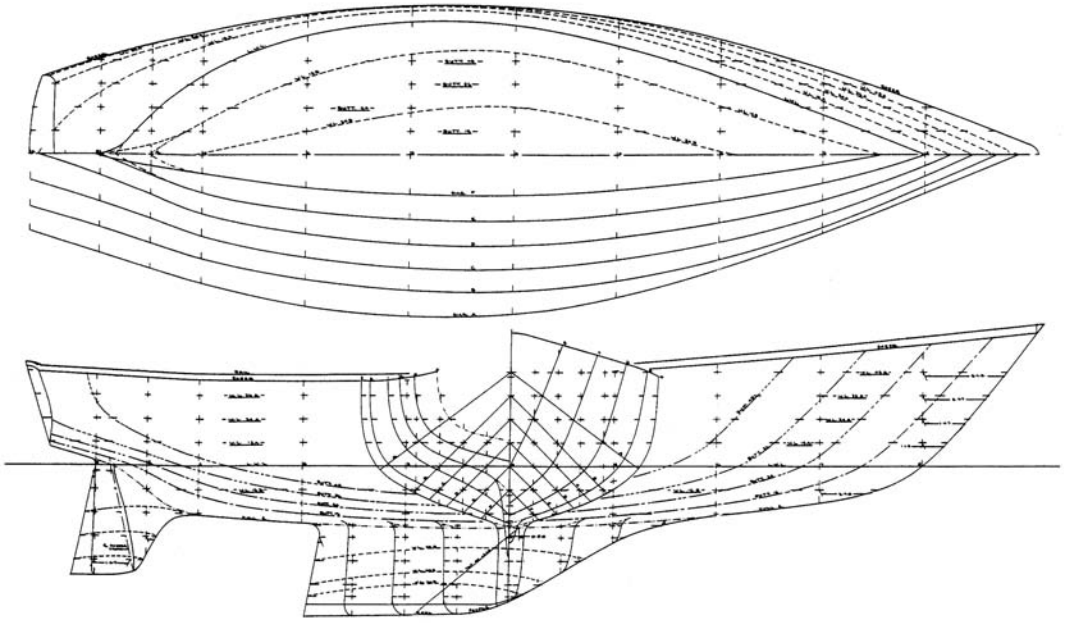



## Buttocks

Buttocks are evenly spaced longitudinal slices through the hull. The centerline (CL) is actually a buttock at zero distance while the other buttocks will be spaced at equal intervals of from six inches to several feet out from the CL, depending on the size of the craft. The buttock lines that interest us most are the "quarter-beam buttocks," those in the aft quarter approximately 25 percent of the beam out from the centerline.

Contemporary sailing yachts, even the older mid-1980s Whitby 55, show long and easy buttocks indeed when compared to yachts of the 1950s to early 1970s. Modern racing yachts with remarkably wide, flat transoms have even flatter buttocks and can achieve extremely high speeds when reaching. The owner of my 60-foot *Wild Thing* reported that she hit 22 knots at one time and that speeds of 20 knots were not uncommon!

More moderate craft with heavier displacement will show greater rounding in the buttocks aft, but it is desirable to keep the angle to the horizontal as low as possible. In general, it's considered that separation of the water flow begins when the buttock makes an angle of 15 degrees to the horizontal. At that point the water separates from the hull, creating turbulence and resistance. The further aft the buttocks can be carried before this 15-degree angle shows up, the less separation there will be and the less turbulence will develop, with lower resistance as a result. "Bustles" were developed in the late 1960s and early 1970s and will be seen on many yachts of that era. This flattened the buttocks and moved the point of separation as far aft as possible in order to reduce resistance. I still like to fit a small bustle to a heavier displacement design.



***The lines of the 1971* Black Velvet *design show a substantial bustle.***

Very husky double-enders, such as the Tahiti ketch and old Colin Archer designs, had heavily rounded buttocks aft. This produced a slow boat due to the short and steeply angled buttocks. In addition, such end shapes tend to lack reserve buoyancy and may be prone to pooping in extreme sea conditions. I've been pooped once, on the way to Bermuda, and I didn't like it!

## Diagonals

Diagonals are primarily fairing lines that assist the designer and builder in assuring that the hull lines are lofted full-size with accuracy. The shape of the diagonals will vary with their angle and their location in the hull. The vital thing is that they should be fair, sweet curves without humps or hollows. Still, diagonals that are drawn in at a steep angle and close to the hull centerline will always reflect the shape of the craft's ends. If the boat shows a hard-knuckled bow or a deep bustle aft, the diagonal will reflect this and can be disregarded as to its influence on the yacht's performance.

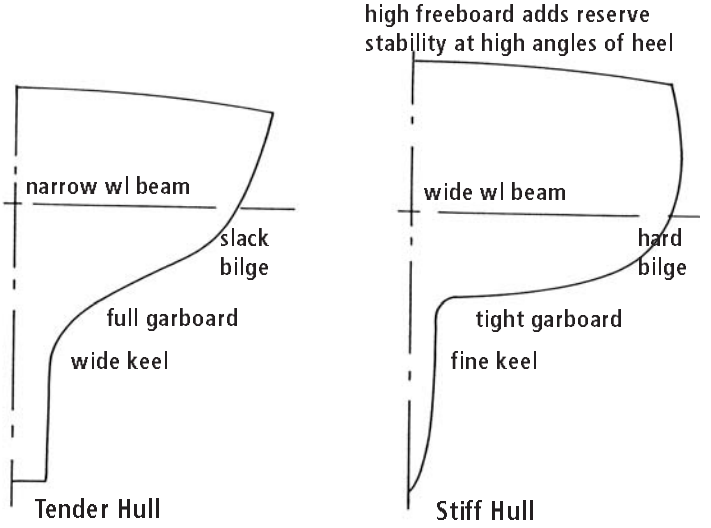
Diagonals tend to show the flow of the water when the yacht is heeled under sail, and I always trusted the diagonals to show me that my hulls were sweet and fair. I probably depended on them more than many designers, and I think the Whitby 55's lines show this. One of the greats, Knud Reimers, actually designed some of his yachts using only diagonals as fairing lines, no buttocks or waterlines except the LWL and centerline, of course.

A point to note is that many modern computer hull-fairing programs, like the AutoYacht program I use, do not show diagonals at all. I trust the program to properly fair the hull, within reason, but I would still prefer to see the diagonals when designing certain types of vessels. A plumb stem and deep forefoot, found on a catboat or a traditional clipper-bowed craft, can produce some oddly blunt shapes indeed in the forward end of the diagonals.

## Sections or body plan

The form stability of a yacht increases with an increase in beam. However, hulls of similar beam can vary widely in form stability; one with great flare in the topsides and a narrow beam at the waterline will not have the stability of the yacht with relatively vertical topsides that carries its beam well down to the waterline. Of course, stability is a product of the displacement times the righting arm, so modern light displacement craft require greater beam and harder bilges in order to obtain the form stability, the righting arm, necessary to compensate for their lighter displacement.

Stability is also greatly affected by the underwater hull shape. Hard bilges and low deadrise angles add to form stability while soft bilges, deep deadrise, and a slack garboard indicate a more tender hull. But bear in mind that the hull shape is not the sole criterion for judging stability — the yacht's displacement, the amount of ballast, and its location are also major factors and must be given equal consideration with beam.




Indeed, a narrower hull of husky displacement and proper ballast may have a righting moment at certain heel angles that is roughly equal to that of a beamier, lighter vessel. She will also have an easier motion in heavy seas and be kinder to tender tummies, as the narrow vessel will scend (an upward motion on waves) more slowly and will roll more slowly but, perhaps, to a greater degree. On the other hand, if the vessel is narrow and of very heavy displacement, she may be like a half-tide rock, scending so slowly that she is washed by every big sea that comes along. There is a happy medium!

The narrower hull does tend to "roll in" when she heels in a stiff breeze, and this keeps the rudder in the water where it should be. The beamy, hard-bilged hull "rolls out" as she heels, lifting her weather side well out of the water, and this may bring the top of the rudder close to the surface into turbulent, aerated water.

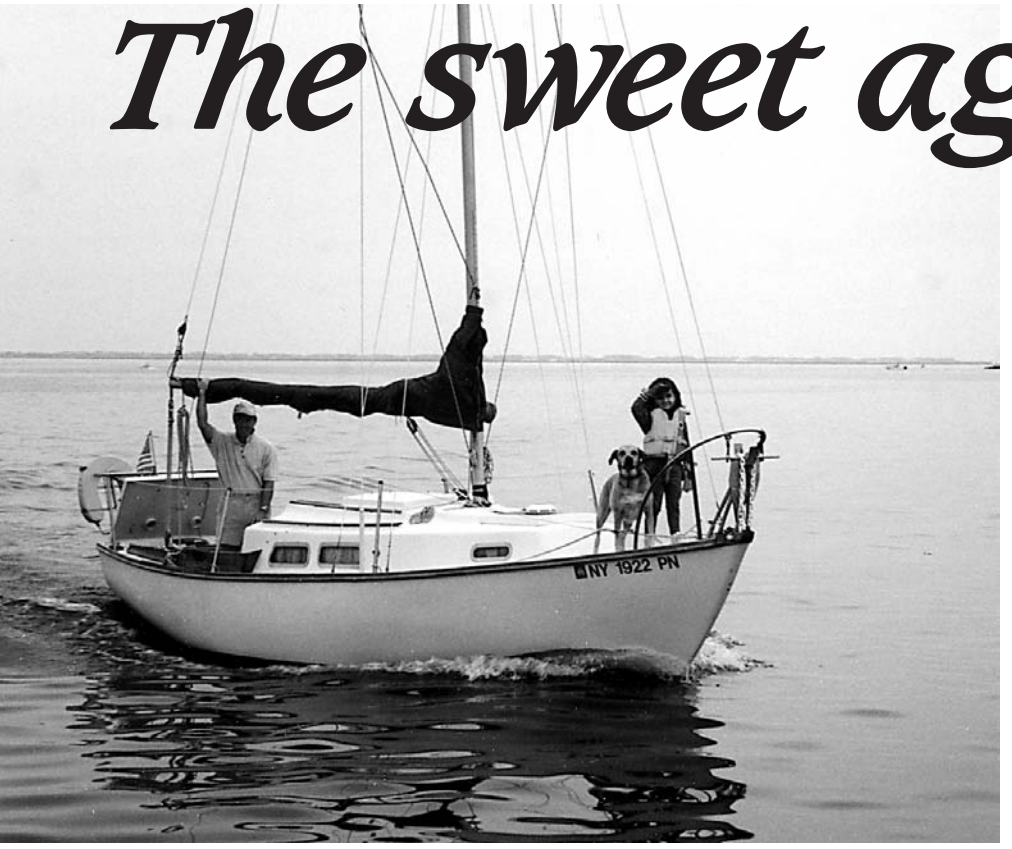
Then control is lost and a spectacular broach may result; the kind of action picture beloved by marine photographers. Nevertheless, the narrower hull, when running free under spinnaker, can develop an unnerving oscillating roll. The form stability of the beamy, hard-bilged hull tends to dampen out that type of roll.

The shape of the stern quarters is an important consideration also. Narrow hulls that sail at larger heel angles should have greater deadrise aft and slacker bilges in order to reduce turbulence and drag when heeled. Beamier hulls can employ flatter deadrise to increase stability as the yacht heels to the breeze. However, I do feel that many contemporary yachts have carried their beam to an excess aft in order to provide additional sleeping kennels, also laughingly called "staterooms," in the stern. The result is a yacht that may tend to nose-dive as she heels, dipping her bow and creating difficult steering when driven hard.

In effect, every design is a compromise of features, and no single design can be all things to all skippers. When you're in the market for your next yacht, it will pay you to have learned all you can about hull design and hull shape so you can make the best possible choice. Even though you may not be able to get a copy of her lines drawing, you should be sure to see the vessel hauled out. Use your eyes to imagine the run of her waterlines, buttocks, diagonals, and the shape of her sections. Try to imagine how these will affect performance, stability, and comfort.

*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 celebrated ocean races.*

# The sweet agony




## by Kai Sturmann

I reluctantly accepted the fact that I couldn't keep her. It was like my first sports car, which I had vowed to keep forever in a barn until I was old, retired, and ready to play again. There was no barn for the boat, just as there was no barn for the car. And even if there had been, boats are meant to sail. Keeping her dry would be like keeping my dog chained to a tree. In the rain. No, I told myself, it wouldn't be right.

I had a "new" boat now, bigger, faster, and — I deluded myself — ready to take me anywhere. The ad was placed in the paper and as an added bonus (very cutting-edge at the time) it appeared on the Web site of the publisher.

*Sea Sprite*, a Cape Dory 25, had come to be mine at least a decade before I had a right to expect such good fortune. She, a victim of hard times, and I, with little money in the bank but the serendipity to read the paper on a lucky day. I had brought her back to life slowly, and she had repaid me in ways I'm still learning to understand and appreciate. Shared times with my daughter. Mireille at the bow in her little yellow life jacket, proudly holding steady with her hand on the forestay; me at the tiller, proudly looking at her. Time with my dad. Helping me tie the cover fast in preparation for cold winters. And time alone. Time sitting on the rail, sails perfectly set, with the autopilot taking us down the bay, dreaming of nothing but water on the horizon.

When the call came about the advertisement I was surprised. It came from 1,500 miles away, and the paper hadn't even been published yet. The gentleman told me that he was calling on behalf of his parents who were keeping warm in Florida but wanted to get back into sailing. His father noticed the ad on the Internet. We exchanged details about the boat and agreed to meet later in the week.

I overcame the considerable reservations I had about actually selling my boat when he told me about his parents. They were both well into their eighties. They had owned sailboats most of their lives and had lived on a few, their travels covering thousands of miles. They had sold their last boat years ago, having listened to their children and to "reason" about the dangers of old folks on pitching boats in stormy seas. But something beyond reason prevailed. They yearned to sail again and decided to look for a boat on which they could spend their summers back north.

I'm not sure their son agreed with their logic, but after describing my boat to his father he came back and offered to pay the asking price. I spent some time on the telephone with his dad and, over the course of the next two months, quite a bit more. I heard him speaking to his wife, the excitement evident in both of them. The boat would be kept near their summer house, a two-day sail from my back yard. Arrangements were made and, after reassuring them yet again that all was ready, we agreed on a date when they would set sail.

I woke up early, made sure that everything was proper, and washed the deck down one last time. It was a picture-perfect day, the early May sun shining brightly and the breeze beginning to fill in from the southwest. I stood on my dock and looked at her again, proud of how she looked and happy for her new life. I felt guilty about my new boat and troubled about having made the decision to buy it.

These thoughts were interrupted by Harold and Ferne, walking up the garden toward me, arms loaded with gear. It was great to meet them face-to-face, though I felt we knew each other pretty well by then. Ferne gave me a copy of a cookbook she had written during their years of cruising the Caribbean. She asked for the name of my new boat and dedicated the book to pleasant voyages aboard.

I thought perhaps we would share some coffee, and they would go back home. But reality and time moved forward. Gear and provisions were stowed in the tiny cabin, and we went over the systems and discussed how things worked. It was time for me to leave for work so my offer of a short sail

Cruising memories

together was made in spirit only. Harold and Ferne assured me that they were fine and anxious to get on their way; there were miles to be covered. We said our good-byes for the fifth time, and I cast the lines onto "their" deck.

I should have turned and gone to work, but I couldn't leave the dock. I watched the boat make its way out into the bay, its mainsail slowly drawing wind. The genoa unfurled and began luffing in the gentle breeze. It was the first time I actually saw her sail. From land. From someplace other than on board. She was beautiful. Harold turned her east, the little ship getting small and smaller as it became late and later for me to get to work.

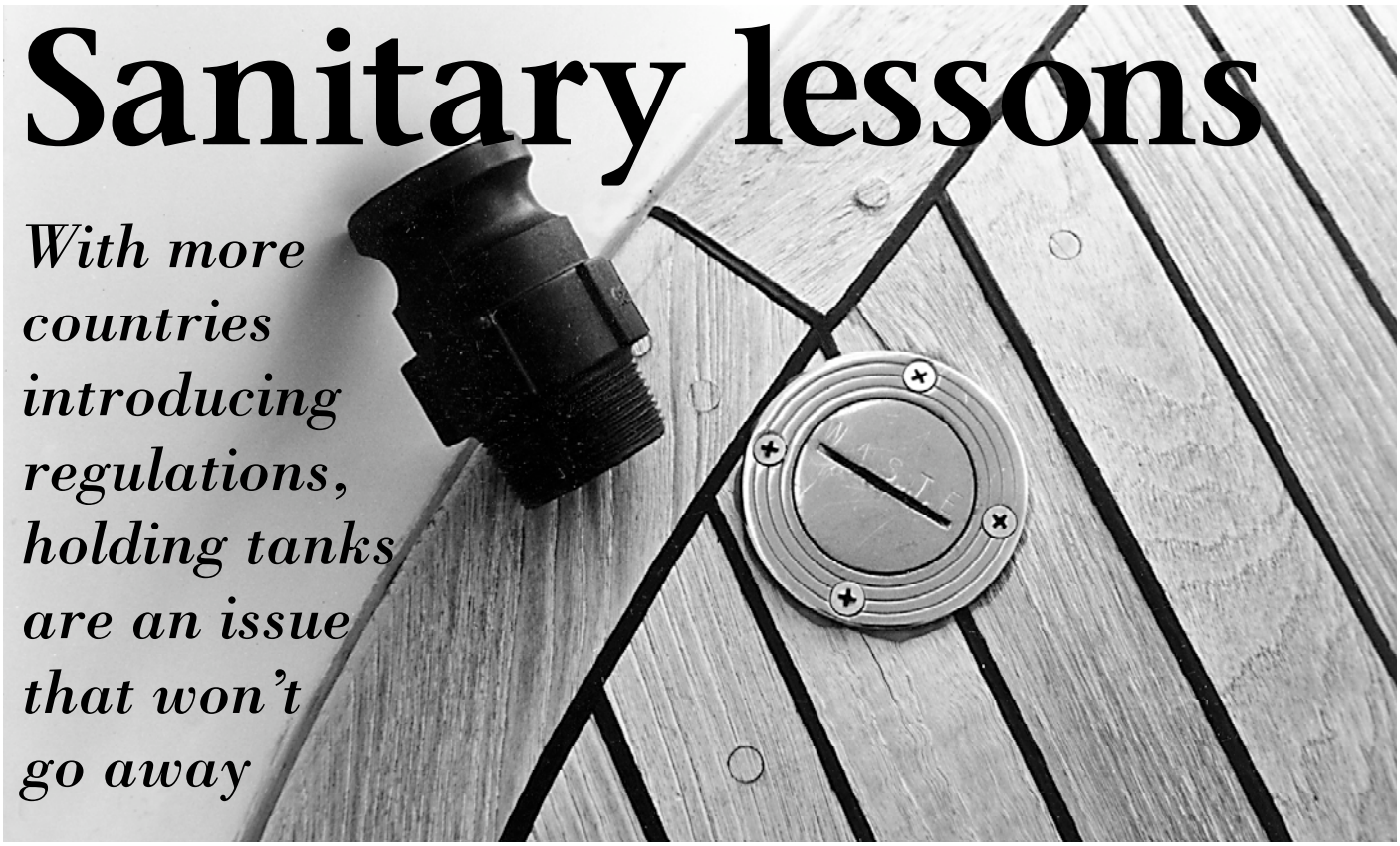
I realized that it wasn't simply nostalgia that kept my feet planted on the dock. Her jib was still luffing. She was on a beam reach, mainsail pulling nicely, her jib sheets slack. She would be around the point soon. I wanted to see her one last time, in her glory, like a picture on a postcard. As I turned around to head for the house, I saw her jib fill with wind, her mast taking her rail closer to the water. A final thank you and a final good-bye.

*An emergency physician professionally, Kai grew up racing dinghies and Hobie Cats in New York. He holds a USCG 50-ton masters license. He and wife, Mary Ryan, cruise Long Island and southern New England on* Étoile Filante*, a Tartan 34, with Mireille, now 11, (pictured at left on the bow in the life jacket just as Kai remembers her) and Kyle, 5. The Tartan has been to Bermuda with previous owners. Kai wants to take her back.*

# of parting

# Sanitary lessons

## *With more countries introducing regulations, holding tanks are an issue that won't go away*



***Many dockside pumpouts require an adaptor to be screwed into the deck fitting. Carry one on board.***

***story and illustrations by Andrew "Aussie" Bray***

TRADITIONAL MARINE HEADS THAT discharge sewage straight out through a skin fitting are notoriously unpleasant things to work on, even during planned maintenance, let alone when having to clear a blockage or fix a leaking pump at sea. Storing sewage on board, quite apart from requiring extra cost, weight, and space, very obviously increases the opportunity for additional things to go wrong with the potential for even greater unpleasantness. This is, perhaps, the unconscious reason (rather than because of any widespread lack of concern for their environment) that boatowners as a group are reluctant to acknowledge, let alone address, the problems associated with boating sewage pollution.

In freshwater canals, rivers, and lakes, where the water is often warm enough for swimming and clear enough for visual pollution to be obvious, there is general agreement that holding tanks serve a useful purpose. To varying extents in different countries a combination of legislation, innovation, investment in pumpout facilities, inspection, enforcement, and peer pressure is helping to clean up inland waterways.

In unconfined ocean areas the situation is often very different — there is only rarely any just cause for concern about the additional "nutrients" being added to the water: no one drinks the water, in many places it's too cold for swimming or too turbid for sewage to be obvious, and the area is well flushed by tides and currents. Particularly if the local city pours untreated effluent into the sea on a grand scale, it's easy to dismiss calls for blanket restrictions on conventional marine toilets as environmental nonsense and political grandstanding.

On the other hand, we all know of relatively enclosed marine waterways, such as breakwatered harbors, locked marinas, and popular sheltered coves, where the water sometimes is used for swimming (by maintenance divers or children, at least). It's also used by some boaters for rinsing dishes and is maybe even desalinated for drinking. Any nearby beaches are sure to be playgrounds for children, and people do still collect their own shellfish. In such situations, pollution by a high concentration of small craft is often offensively obvious and, without a doubt, constitutes a health hazard to the local community, tourists (including boaters), and eaters of local seafood (finned fish as well as shellfish). Restrictions on overboard discharge of untreated sewage in such locations is logical and will inevitably be introduced and then enforced in more and more countries.

While pioneered in developed countries, restrictions (and fines) are growing in relatively underdeveloped ones, too, especially where marine tourism is an important part of the local economy. Whether you inwardly rail against obvious hypocrisy, or cynically suspect enforcement is motivated by a wish to extract fines rather than to protect the locals' health and environment, flouting regulations is likely to become increasingly difficult and expensive.

In your home waters you may, of course, just await regulatory developments, but no one wants to cruise in constant fear of the official knock on the hull after using the head in port. So when building a new yacht or equipping one for foreign cruising, there is much to be said for being prepared. Even where there are no restrictions or no one to see they are enforced, being able to swim around

*". . . no one wants to cruise in constant fear of the official knock on the hull after using the head in port."*

your own boat in paradise without suddenly encountering a cloud of pollution is a very real point in favor of holding tanks.

There are broadly two ways of dealing with the problem — either store the sewage on board in a holding tank until it can be pumped into dockside facilities or discharged offshore or treat it on board to kill pathogens and then discharge it into the water. Both systems have their advantages, but onboard treatment is relatively complicated and not universally acceptable. So despite the non-availability of onshore pumpout facilities in many areas, holding tanks are the most reliable option, particularly when they are installed as a general precaution against future problems in a variety of foreign destinations.

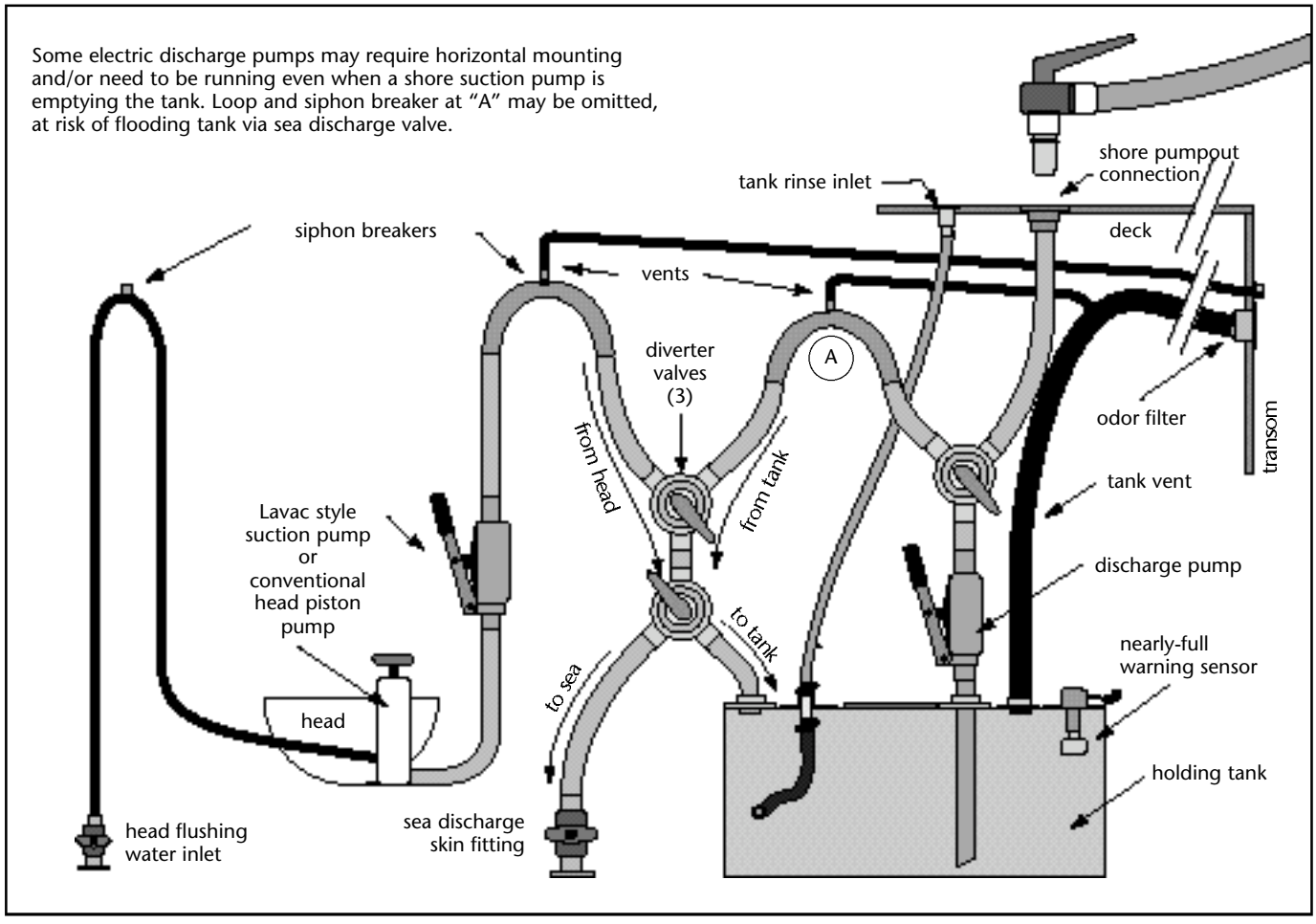
## Holding tank systems

No-discharge systems, without any ability to pump out through a skin fitting, are favored by environmental purists, but these are only practical where a pumpout facility will always be available when required. This generally restricts their application to vessels that only operate in canals and other heavily controlled waterways and to short-term charter boats with sufficient holding tank capacity to tide them over between turn-arounds at base. Such restrictions are, in any case, easily circumvented with a portable pump and hose operating to the deck fitting or even with no more than a length of hose if the boat has a permanently installed discharge pump.

Porta Potti and other self-contained toilet systems may provide a workable solution for daysailing, particularly on yachts with small crews, but larger yachts that spend considerable time at sea require a convenient method of self-discharging the tank and/or bypassing it entirely. These "optional discharge" holding tank systems are the ones that primarily concern us here.

## Optional discharge

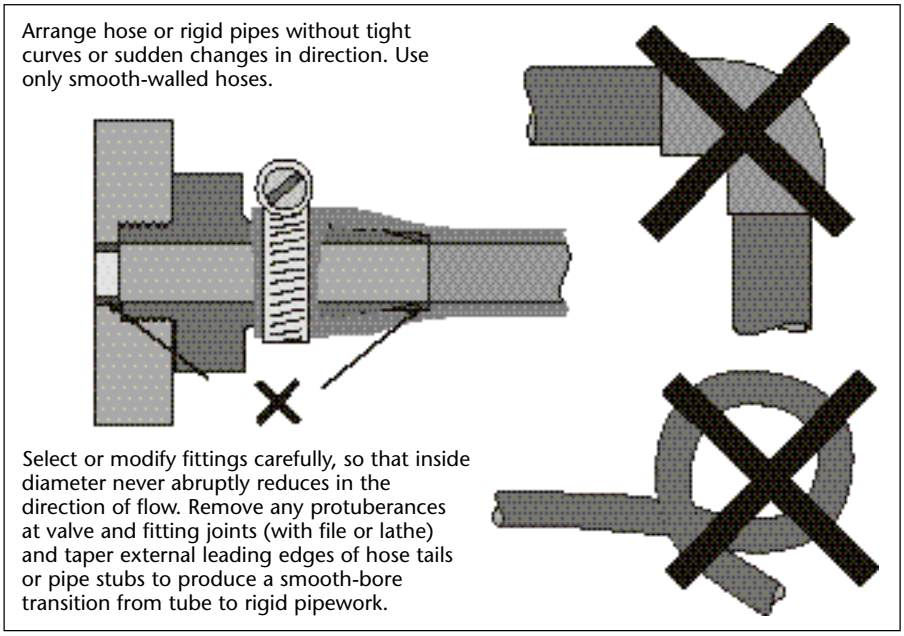
These systems vary considerably in detail and complexity, but essentially they allow the user to choose whether the sewage is discharged immediately into the surrounding water or diverted into a holding tank. The accumulated tank contents can subsequently be discharged through a deck fitting to the shore, sucked out through the same fitting by a shore pump, or discharged through a skin fitting when the yacht is back at sea. These systems are the most versatile and, in conjunction with the ability to padlock valves to prevent discharge through the hull, should be acceptable even in rigidly inspected no-discharge zones. In principle, such




***Schematic for optional discharge holding tank system.***

systems might also allow for chemical treatment of the sewage in the holding tank prior to discharge into the water, but in practice even where this is legally acceptable, a special tank is probably mandated so that dosage and hold time can be controlled.

The plumbing of holding tanks is simple, although there are refinements that help to ensure a good working system. A generalized schematic for a below-waterline optional discharge system, compatible with standard manual or electric marine heads, is illustrated in the schematic on Page 23, but it's probably worth seeking information from firms that specialize in such matters when designing a custom system — mistakes can be nauseating as well as expensive.




***Avoiding blockages.***

## Tank capacity

The quantity of flushing water used by a toilet depends on the type of head and on how thoroughly it's flushed after use. A rough rule of thumb is 12 liters (3 gallons) per day per crewmember using conventional marine toilets, but the Lavac vacuum system tends to use considerably less flushing water. As far as I'm aware, the SeaLand Vacuflush (a relatively complex and bulky electrical system) is the most parsimonious, using about a half liter (1 pint) per flush.

In practice, the crew size is variable, and the duration of holding required in a port may depend on the weather as much as anything else, so a bare-minimum volume based on the usual crew for a weekend should be increased manyfold if space permits. Doubling or trebling the tank volume requires relatively little additional material or cost and doesn't increase the cost of the valves and other plumbing items at all. The holding tank cannot be too big but can very easily prove too small. Since it will be empty at sea, the sewage weight is not a real concern, and the larger the tank the less frequently pumping out will be needed. It would therefore be the more likely to be accomplished routinely whenever the yacht happens to go to sea, rather than having to use dockside pumpout facilities or break out a well-dug-in anchor just to pay a quick visit offshore.

*"The holding tank cannot be too big but can very easily prove too small."*

In principle, the holding tank can be anywhere in the boat, although manual heads may be noticeably harder to pump if the tank is at the far end of the boat. Pumping is easier and back-flow less likely if the tank top is lower than the head's bowl, but this is not often possible, especially when retrofitting a holding system to a smaller boat.

The space beneath forepeak bunks is often a convenient location, particularly for retrofitting to smaller yachts, because a full tank on or near the centerline does not induce a significant list, and the usual place for the head — forward of the saloon — is nearby. The disadvantage of the forepeak location is that the vent run to the transom is relatively long.

On larger boats, listing is less of an issue, and there is more likely to be space available beneath the sole. It is possible to connect several heads to one holding tank, but having just one connected should satisfy officials, provided any other heads on board can have their valves locked off.

## Tank construction

Holding tanks can be made from a variety of materials, but fiberglass (GRP), stainless steel, and polyethylene moldings are the most common. Sewage is corrosive, so aluminum or mild steel tanks should be avoided, and even stainless steel can corrode at the welds. Polyethylene tanks are only available in a limited range of sizes and shapes, so many custom tanks are made of GRP. These should be strongly constructed, preferably with epoxy internal coatings. They should not be integral with the hull because of potential osmosis and odor problems, but I've seen GRP tanks laid up *in situ*, inside a female mold constructed from epoxy-sealed plywood. GRP tanks can also be made over a polystyrene foam male mold, covered in plastic wrap with the foam subsequently dissolved away with a solvent.

Baffles should be avoided because they reduce the effectiveness of rinsing and may accumulate debris. Since the tanks can usually be legally emptied soon after leaving port, baffles are not needed for slosh or noise control in ordinary tank sizes. Adequately thick tank walls or external ribbing can render baffles unnecessary as far as internal bracing is concerned.

Complete emptying of the tank is only possible if the outlet is at the bottom with a low loop below it, but having all openings in the top is often more practical, reducing the chance of a leak, and allowing for plumbing maintenance without having to drain the tank. Especially in a tank that will only be used occasionally, some means of rinsing it is desirable to minimize odors and the chance that dried lumps of sewage will cause blockages later. Filling the tank with clean water pumped in via the head and then discharging may provide sufficient

rinsing but is time-consuming.

Note that it's generally illegal to directly connect a drinking-water supply hose to anything that has to do with sewage. I've seen one large yacht in which the deckwash pump could be diverted into a short flexible hose within the holding tank. This snaked around in reaction to the water jetting out of it and played a high-pressure jet around inside the tank.

Unpleasant as the prospect may be, it's only prudent to provide a maintenance access panel on top within reach of all inlets and outlets to the tank. A supply of disposable latex gloves and an activated charcoal fume mask (as used by spray painters to filter out solvents) are worth storing with the head maintenance kit. The disasters you prepare for don't seem to happen.

Visual level inspection is possible with translucent polyethylene tanks, provided a side of the tank can be seen, but some electrical method that actually warns when the tank is approaching full is desirable. Ordinary pivoting float switches are not reliable in this application but those with vertical acting float probes seem to fare better. Some models can also warn when intermediate levels are reached. A sealed observation port in the lid provides a foolproof back-up to electronics and may also double as the maintenance access.

In general, overcoming any problems will be less traumatic if float switches and all plumbing enter the tank via externally bolted flanges that allow them to be withdrawn even if the tank is full as shown in diagram at right.

## Flexible tanks

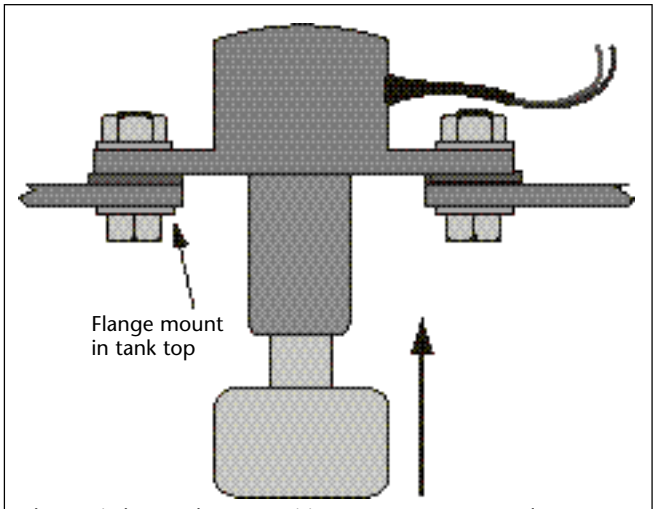
Flexible tanks may seem to be an attractive solution for occasional use, and their degree of fill is self-evident, but be warned that sewage odors may eventually prove to be a problem. Connections to flexible tanks are often weak points, and the tank itself is vulnerable to chafe. Given the consequences of a leak, a properly constructed rigid tank is probably a wiser long-term choice.

*"Don't be tempted to sneak discharge a holding tank at night in a marina; the culprits are easily identified, there are plenty of potential informants . . ."*

## Valving

Optional discharge systems require the head discharge to be divertible either to the holding tank or to the sea-discharge skin fitting. The tank discharge needs to be directed either to the sea or to the deck pumpout fitting. Unless the tank discharge has its own sea valve, another two-way valve is needed so the tank can be discharged through the normal head-outlet skin fitting. Diverters are preferable to a Y-fitting and two ordinary valves because operation is quicker and the opportunity for mistakes reduced. In either case, to minimize flow friction and blockage potential, use valves that have a clean bore of the same diameter as the connected pipes or hoses. As with all marine head discharge plumbing, these valves may require periodic dismantling to remove mineral deposits and should be installed so this can be done easily.

I've read that periodically flushing systems with heavily diluted muriatic acid or water containing 30 percent vinegar may combat mineral buildup (and odors) but I've not tried this and can't recommend it. Where time permits or when cleaning up old pump joker valves, soaking in a jar of vinegar will soften the mineral deposits that accumulate inside marine plumbing.



Float switch must have no wiring or contacts exposed to sewage. Multilevel float sensors are also available.

***A reliable sensor avoids being caught unexpectedly with a full tank.***

## Pipe work

Blockages are most likely to occur in fittings where the bore suddenly reduces, so it pays to file away any molding ridges in pipe fittings and to use hose tails that have a fine external taper. Always use bends rather than elbows in plastic fittings and support hoses in gentle curves. Hoses must have smooth bores — do not use corrugated hose. Where possible, use rigid PVC pipe for long runs and support hoses or pipes so they drain either into the tank or into the next diverter valve. Sewage or even condensation pooling in a vent hose sagging between supports will breed odors. With care and a little practice, a hot-air gun may be used to create gentle curves in rigid PVC piping. In the interest of neatness and easy maintenance, buy the correct fitting for the job, rather than cobble the pipework together from whatever the chandler happens to have in stock. Plumbing supply companies have a far greater range of plastic pressure and sewage fittings.

## Pumpout connection

A deck pumpout capability may not seem essential if you expect to always discharge the tank at sea, but apart from the sheer inconvenience of going to sea for just an hour, you may learn that marina operators take a dim view of foreign yachts that appear to be suddenly decamping. In some countries, boaters might have to officially clear and then re-enter the port. A pump will be needed in any case, since even where the tank can be installed above the waterline, relying on gravity to empty it is likely to lead to blockages.

Over the years, there have been several systems in use in various countries for connecting dockside suction pumps to boat deck fittings. Most required threading in one half of a quick-connect fitting before clipping on the hose, but a simpler "push-in probe" system incorporating an O-ring is gaining a degree of international acceptance. For cruising in foreign countries,

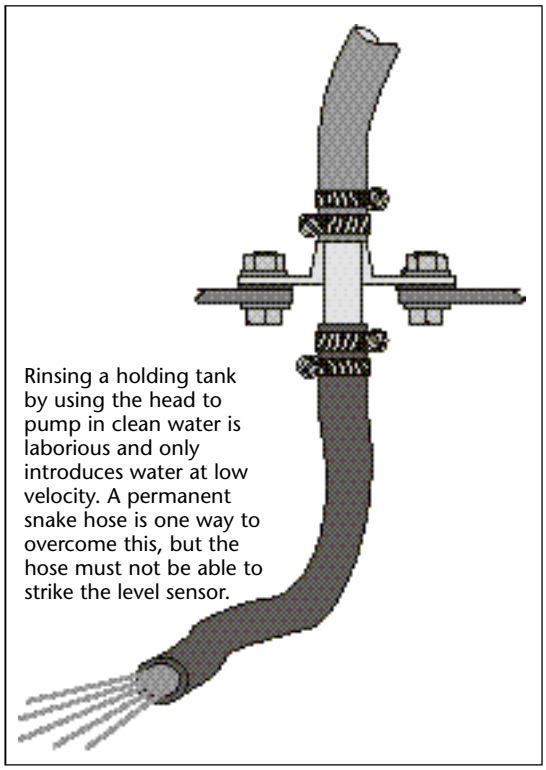
install a deck fitting that is compatible with probe and screw systems and carry a mating threaded fitting that could form the basis of an adapter in case you are faced with some other system (see photo on Page 22).

## Discharge pumps

Most solids and toilet paper tend to be broken into relatively smaller pieces just by passing through a normal head pumping system, but larger pieces sometimes remain intact, and settlement and stratification may occur within a holding tank. The tank discharge pump must therefore be able to deal with sludge and small solids. Large-bore diaphragm pumps (manual or electric) are generally quite good in this situation, but problems will arise if standard electrically driven rubber impeller or centrifugal pumps are used. Special macerating pumps are available for this application, and some folks also use them as the normal electric head discharge pump to reduce the visual pollution caused by a conventional head or to break the solids up for onboard treatment. An electric pump makes light work of what can otherwise be a long and arduous stint of manual pumping, but note that some electric pumps may need to be running even when a shore suction pump is connected.

## Tank vents

Undersized tank vents are a frequent source of problems since they may lead to back pressure (and perhaps to back flow) when trying to flush the head and can also lead to the development of a partial vacuum when the sewage is being pumped out of the tank. This can collapse the tank or hoses associated with it, including the vent line itself. Small-bore lines are relatively easily blocked by insects (especially mud wasp nests) or kinking. A 1-inch-bore vent should be considered the minimum for any sewage holding tank.



Rinsing a holding tank by using the head to pump in clean water is laborious and only introduces water at low velocity. A permanent snake hose is one way to overcome this, but the hose must not be able to strike the level sensor.

***Tank rinsing.***

The vent outlet must, of course, be well above the tank level and the waterline and not within the boat's living spaces. The transom is usually the most suitable place for the vent as odors are carried away on most points of sailing and when anchored. The vent line may have a high loop but should have no low loops or sags where water can accumulate and block it. Flexible vent lines should be non-collapsible types intended for sewage and well supported to prevent sags from developing. Rigid PVC vent lines are reliable, relatively lightweight, cheap, and fairly impermeable to odors. The vent should be fitted with an activated-charcoal type filter, larger in diameter than the vent line since the filter inevitably has some resistance to air flow.

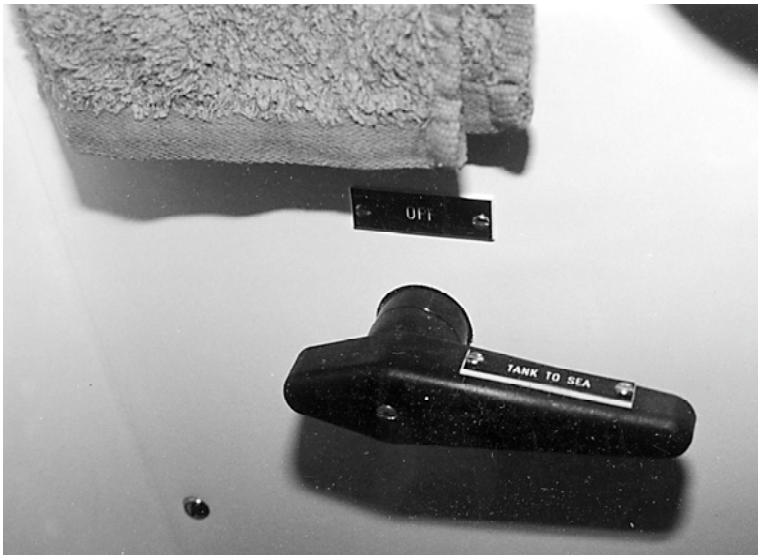
## Odors

Even an ordinary marine head, in which contact with sewage is intermittent, can develop persistent smells due to the permeability of flexible hoses. The problem can be much worse with holding tank systems, not only because pipework contact with sewage vapors is continuous but because bacteria working on the sewage generate additional odors.

Various disinfectants, deodorizers, or treatment chemicals are available to prevent or mask odors. Those added in one dose (pumped in through the head) need to be replaced each time the tank is pumped out, but there are also dispensers that use liquid or tablets designed to be fitted before or after the toilet pump to combat odors in the whole system. These work whether or not the holding tank is in use. Some of these products claim to reduce mineral buildup as well.

Traditional strong latrine odor-suppressing chemicals, such as phenol, are now considered to be environmental pollutants and should not be used. Bleaches may damage pump components, but in extreme cases it may be worth trying to sterilize hoses and so on by soaking them for a few days in heavily chlorinated fresh water.

Most odors reach the boat's interior through flexible hoses or from leaks at pipe joints (perhaps only leaking while the head is actually being pumped). The traditional way to find where such odors are escaping from the system is to wrap the suspected hose or joint with a damp




***A tank-to-sea valve (clearly marked to avoid mistakes) in the head of a Freebird 50.***

cloth for a while, removing the cloth, and giving it the sniff test.

As far as hoses are concerned, some temporary relief may be obtained by sheathing the offending section in aluminum foil held in place with packaging tape, but the best long-term solution may be periodic replacement of the hose, using the best smooth-bored sanitation grade you can find. Hoses should be kept as short as possible and be arranged so water does not lie in them. Rigid PVC pressure-grade pipe work should be used where possible with O-ring unions to allow for dismantling where necessary. Activated charcoal filters in vent lines should help with odors above decks but, as mentioned earlier, the filter should be large-diameter, particularly if the holding tank might be emptied by an electric or dockside pump.

Siphon-breaking vents in high loops are another potential source not just of odors but of bacteria-laden air from the holding tank. Use of a siphon breaker with its own poly-pipe vent tube leading to the transom removes this risk.

Holding tank systems should be rinsed after discharging, preferably with fresh water, particularly if the tank will not be in use again for some time. Even clean salt water left to stagnate in pipes will eventually smell. So flushing out any marine head with fresh water before leaving the boat locked up is a worthwhile practice.

With the benefit of on-board desalination, it may be practical on larger craft to operate a vacuum-type head using fresh water to reduce odor and mineral buildup. Charter boats running harbor cruises and so on often run conventional marine heads using fresh water drawn from a tank for flushing to reduce odor and long-term corrosion problems. Presumably salt water is an unwelcome additive to municipal sewage systems, particularly those that provide secondary or tertiary sewage treatment and discharge into freshwater rivers.

Even systems that are odorless on board create a stench and visible pollution during discharge of accumulated sewage into the water. This should only be done when well away from

***An unobtrusive diverter handle on a Victoria 37.***

shore or other boats and preferably while your own yacht is moving upwind. Don't be tempted to sneak discharge a holding tank at night in a marina; the culprits are easily identified, there are plenty of potential informants, and it's the very place where regulations are needed and likely to be enforced.

Inasmuch as they can be used to completely avoid discharge into the water, holding tanks, perhaps in conjunction with locks on hull discharge fittings, should satisfy local regulations in any country. The disadvantage is that you may have to go to sea or shift to a pumpout berth every few days to legally discharge the tank. You may hear about various alternatives to holding tanks that seem to offer a way around this problem, but unfortunately they are far from universally acceptable and are becoming less so.

## The U.S. experience

The U.S. has been legislating about MSDs (Marine Sanitation Devices) since 1972. Holding tanks are classified as type III MSDs, a group that also includes some innovative non-discharging systems, such as those that recirculate the flushing water, and even some that incinerate the sewage. Apart from self-contained, portable Porta Potti-type units, type III MSDs are the only systems allowed to be used in no-discharge zones. As pumpout facilities become more numerous, increasing areas of the U.S. are being declared no-discharge zones. If you can't find a pumpout in these areas you are supposed to sail outside the three-mile limit before discharging a holding tank.

## Treat and discharge

In most other U.S. marine coastal areas, small craft are still allowed to use what are called type I or type II MSDs, which treat the sewage chemically, biologically, or with heat to reduce bacteria levels before discharge and to macerate and disperse the sewage to the point where no "floaties" are big enough to see. In areas where these systems are legal, they allow boating to continue without the hassles associated with holding tanks, but they are relatively complicated devices and the legislative trend, not just in the U.S., is to move toward a no-discharge policy. Ostensibly this is because treated waste still contains some bacteria, adds "nutrients" to the water, and may also discharge some active chemicals into the environment. Such systems are certainly worth considering for cruising within areas where they are legally acceptable. The Internet can be a good resource for obtaining unbiased reports on the maintenance and operational problems of these systems.

*Aussie is a freelance writer and professional engineer based in Sydney, Australia. He has built four yachts of various materials, including his current 44-foot lift-keel aluminum cruiser,* Starship. *He and his wife and children circumnavigated via South Africa, North Europe, the Mediterranean, and Panama between 1988 and 1993.*

# A lazy reach, Grapevine Lake

***by Jeffrey DeLotto***

*Heeled at fifteen degrees,*

*Lulled into a somnambular doze,*

*Then tensing, sensing* Capricorn's *quickened pulse,*

*We feel the hull roll over another five degrees,*

*Hear the leather-like creak . . . creak . . . creak*

## *Photos by Bob Chambers*

*Of the jibsheet as it tightens on the winch drum,*

*See the distant mark swing slowly to port:*

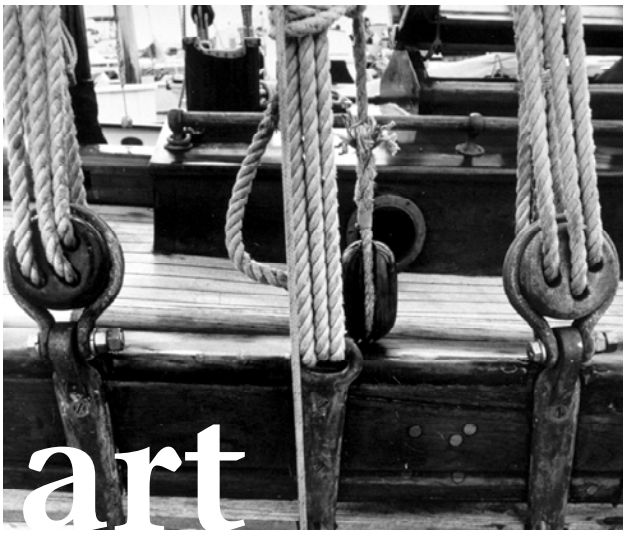
*I bring up the wheel a click or two, adjust*

*The mainsheet, am whispered to by*

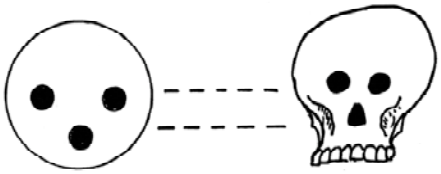
*The foaming furrow of our wake,*

*And settle back.*

# Deadeyes: an ancient mariner's art



## *These relics of nautical history still have practical modern uses*



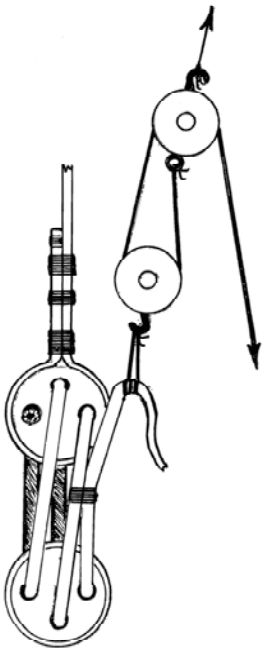
***The origin of the deadeye's name.***

**by Don Launer**

As sailors, sometimes our most basic feelings come to the surface when we go aboard an old boat. Whether it be a small craft or a tall ship, there is a strange wonder, nostalgia, and enchantment as we walk the deck and gaze in awe at the archaic rigging that rises above us.

Although much of the ancient mariner's art has been nearly lost in today's world of Tupperware boats, there are some things that have not changed. With the exception of a few self-supporting carbon-fiber masts and some masts found on very small boats, nearly all sailboat masts are supported by "standing rigging." This standing rigging, in turn, is attached to the hull of the boat or ship through the use of tension adjusters — the essential links that enable the sailor to adjust the complex rig.

Nearly all tension adjusters on modern boats are turnbuckles or, as the British call them, rigging screws. But these turnbuckles are actually a fairly modern development whose use began in the 1860s. Before that time, sailboats had, for more than 2,000 years, employed a much different method for adjusting tension on the shrouds. That device was the deadeye.



***Tensioning the deadeye lanyard.***

Disk-like pieces of hardwood with three (sometimes four) holes in each, deadeyes were the predecessors of today's turnbuckles. They are seldom found on today's recreational small craft, although a few exist on old boats and character boats whose owners like to preserve tradition . . . a handful of sailing purists, such as Chris and Laurie Bauer, profiled in the September 2001 issue of *Good Old Boat.*

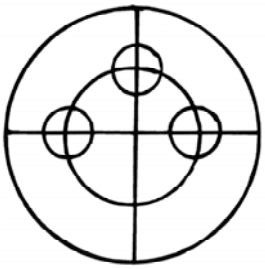
### Standard equipment

Today, however, about the only time we see deadeyes is when visiting tall ships. Surprisingly though, deadeyes are still being used as standard equipment in those parts of the world, such as in the West Indies, parts of South America, and Portugal, where working sail survives commercially.

Before Columbus discovered the New World, deadeyes were made from oak, elm, or locust. Bronze and iron were also used on rare occasions. But in the tropical Americas explorers found an evergreen tree whose wood was even more ideal for making deadeyes. Its wood was hard and durable, could take great compression forces, and was highly resistant to splitting. This tree's sap was also considered to have extraordinary medicinal powers. The tree was given the Latin name for "wood of life," lignum vitae. Lignum vitae is the heaviest and hardest of all woods, so hard and heavy that it doesn't float. It became the wood of choice for constructing deadeyes. The resin of this wood also provided wonderful lubrication, which was a great help in preventing abrasion of the tensioning ropes.

Deadeyes are actually very similar to multiple-part block and tackles, however deadeyes have no sheaves and, once adjusted, the resultant friction of the sheaveless deadeye becomes an asset. As with a block and tackle, there is an upper and lower deadeye for each shroud. The upper deadeyes have a groove around their circumference for the steel cable or rope shroud. On the lower deadeyes this groove is for the strap or cable that fastens the lower deadeye to the hull or chainplate.

*"Surprisingly, deadeyes are still being used as standard equipment in those parts of the world, such as in the West Indies, parts of South America, and Portugal, where working sail survives commercially."*



***Determining the hole layout.***

***A typical upper deadeye.***

Bob Chambers

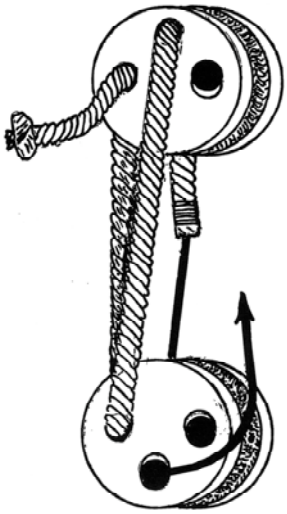
Although some deadeyes are pear-shaped, most are round, which makes it easier to create the outside shroud and chainplate grooves on a lathe (which in olden times was turned by hand).

## Primary tools

Making a deadeye was a fairly simple process, even with the archaic tools of the time. The saw, adz, and auger were the primary tools. The required diameter and thickness of the deadeye was the first consideration. For the old square-riggers, deadeyes were about 8 inches in diameter and about 5 inches thick, but for recreational boats in the 30- to 35-foot range, a 2-inch thick, 3-inch diameter deadeye is about right. Deadeyes for boats of 35 to 40 feet are just slightly larger: 3½ inches in diameter and 2¼ inches thick.

The process begins by selecting a plank of the desired thickness. Then two concentric circles are drawn. The outside circle is the diameter of the deadeye, and the inside concentric circle is half the diameter of the deadeye. A bisecting line is then drawn across the deadeye, with another bisecting line perpendicular to it (see sketch above). The three holes for the tensioning rope, or lanyard, are drilled at three intersections of the inside circle and these bisecting lines. All except one of these rope holes will have slight chamfers on both sides to eliminate the sharp edges that could abrade the rope, which, for centuries, was made of hemp. One hole, in the top deadeye, does not have a chamfer on one side. That hole is for the knot at the bitter end of the rope lanyard, where a chamfer might urge the knot to slip through.

Once the deadeyes have been constructed, filed, and sanded, the rigging begins. The bottom deadeye is fastened to the chain-plate with a strap, cable, or rope. The operation of securing the top deadeye to the shroud is known as "turning in." The cable or rope shroud is turned around the outside groove in the upper deadeye and seized.



***Reeving a deadeye.***

## Threading lanyard

The next operation is "reeving." This involves threading the lanyard through the holes in the deadeye, much as you would rig a block and tackle. A stopper knot is placed at one end of the rope lanyard, and the lanyard is threaded through the upper deadeye hole that has no chamfer. Tallow or wax is rubbed into the deadeye holes to facilitate the final tensioning, and the rope is threaded through the remaining holes.

Now the lanyard can be tensioned "full due," with the aid of a suitable tackle fastened to the shroud being tensioned or to another fixed point aloft (see sketch at left). When the shroud has been tensioned to the desired point, the lanyard is temporarily seized to hold it in place, and the block and tackle are removed. The free end of the lanyard is then fastened to the shroud with a cow-hitch or lanyard hitch, then run down and seized to the last reeved lanyard below the top deadeye.

Old-time deadeyes, which used natural fiber ropes such as hemp, had to be maintained about once a year, usually by coating them with black tar, but even with this preventive maintenance the lanyards seldom lasted more than seven or eight years. With today's synthetic fiber lines, the black tar program is no longer necessary, and the lanyards last much longer.

You're not interested in replacing your stainless steel turnbuckles with deadeyes? Even if you just want to make an interesting room-divider or a pair of bookends, the construction of a deadeye brings a reminder of the mariner's art and boats of yesteryear. With today's power tools, an authentic deadeye can be turned out in a surprisingly short time. Making a deadeye is a satisfying winter project that can bring us in touch with those skills of our ancestors — those skills that enabled them to cross oceans and circumnavigate the world in ships whose survival was dependent on such simple equipment as the deadeye.


*Don Launer has held a USCG captain's license for more than 20 years. He built his two-masted schooner,* Delphinus, *from a bare hull and sails it on the East Coast from his home on Barnegat Bay in New Jersey. He's a frequent contributor to boating magazines, has had a regular boating column in a New Jersey newspaper, was field editor for* Waterway Guide, *and is the author of the book,* A Cruising Guide to New Jersey Waters.

# From decimals to fractions

## *All you need is a simple calculator and Jerry's magic formula*

*by Jerry Powlas*

THE MATHEMATICIANS WHO READ THIS should be prepared to forgive me. It is my only contribution to "applied mathematics."

About 100 years ago, I used to eat supper with my calculus teacher before our night-school class. On one occasion I said to him: "Could you give me just one example of how I might use the concept we are studying?" His response was simply "No." Thus was born my personal idea of applied mathematics, which I distinguished from the other mathematics — stuff that I would study, rarely or never use, and then forget from disuse.

There are times when a worker will want to measure, calculate, or specify something in decimal inches. This happens to me often when I am measuring parts and spaces with a vernier caliper (or even a micrometer) which allows resolution to a thousandth of an inch (0.001 inch). It also happens when I am doing something using fractions, because the vast majority of modern calculators deal with decimals directly, but must convert fractions to decimals to process them.

It is well known that one may easily convert any fraction to its decimal equivalent by simply dividing the numerator (the number above the bar) by the denominator (the number below the bar). For example, the fraction ¾ is converted by entering into the calculator the number 3 divided by the number 4. The answer will appear as 0.75.

The difficulty, of course, is in going the other way, from a decimal to a fraction. This is necessary for me when I move from the calculation stage to the measuring and cutting stage, which often involves laying out something with my trusty machinist's square. It reads in fractions of an inch. It also happens when I have to use a calibrated square or measuring tape. In these cases, I like to be able to convert the decimal-inch measurement that I've calculated into a fraction.

### Nearest fraction

You are thinking at this point that most decimals don't convert evenly to fractions or at least not into the fractions with standardized denominators found on machinist's squares and tape measures. This is true, and it is also true that if you actually need to make the finished parts to a very high tolerance and fit, you should work with decimal-inch measurements throughout the project. In many cases, however, the nearest fraction of an inch will do nicely at the end of a long calculation. So then, how do we convert a decimal to the nearest fraction? You can carry a chart of decimal-to-fraction conversions with you, but it can also be done with the simplest of four-function calculators, and this method is my contribution to "applied mathematics."

Let's convert 0.75 back to a fraction. In your calculator, enter .75 x 4 + 400." You get back the number 403, which, if read in pairs from right to left, can be interpreted as ¾. You now say this is rigged, and how did I pick those numbers? Well, I wanted the answer in 4ths so I used "times 4 plus 400." If I'd wanted the answer in 16ths I'd have used "times 16 plus 1600" and gotten 1612, which I would have read as 12/16. Then, noting that the denominator was even, I would have keyed in "divided by 2." This would have yielded 806, to be read as 6/8, and again the denominator is even, so I would have divided by 2 again to get back to 403 or ¾.

Even if you have your calculator out by now and have not gone to sleep over this, you are thinking that I still have not dealt with decimals that don't come out even. Let's look at one of those. Let's take the decimal 0.4567 for example. We can get this back to a fraction with almost any dominator we might want, as we saw above.

Admittedly, 128ths are little tricky, but 64ths are easy. So enter ".4567 x 64 + 6400." Wow, it equals 6429.2288, which we read as a little larger than 29/64. In fact, it's .2288 64ths larger. Now there's a concept, a fraction with a decimal numerator. That's OK, however. If you are measuring something in 64ths, you will know that 0.4567 is about a quarter of a 64th larger than 29/64, which is good enough in most cases. In another example, the decimal 0.4525 would convert to 6428.96 or 28/64 with .96 of a 64th for a remainder. Naturally, you'd round that one up to 29/64.

### Handle separately

This technique is best limited to numbers smaller than one. Handle the whole units separately. It will work for any denominator you choose, but the common ones you need have two digits, and they are the least confusing.

The general case is (the target decimal, times the desired denominator) plus (the desired denominator, times one hundred). Read the answer in pairs from right to left, where the first pair of digits is the numerator, and the second pair is the denominator. (The pairs themselves are read from left to right in the normal way.)

Now you can throw away your table of fractions to decimals, and convert to any denominator you want with a low-cost, four-function calculator.

Please, don't ask me how I think this stuff up.

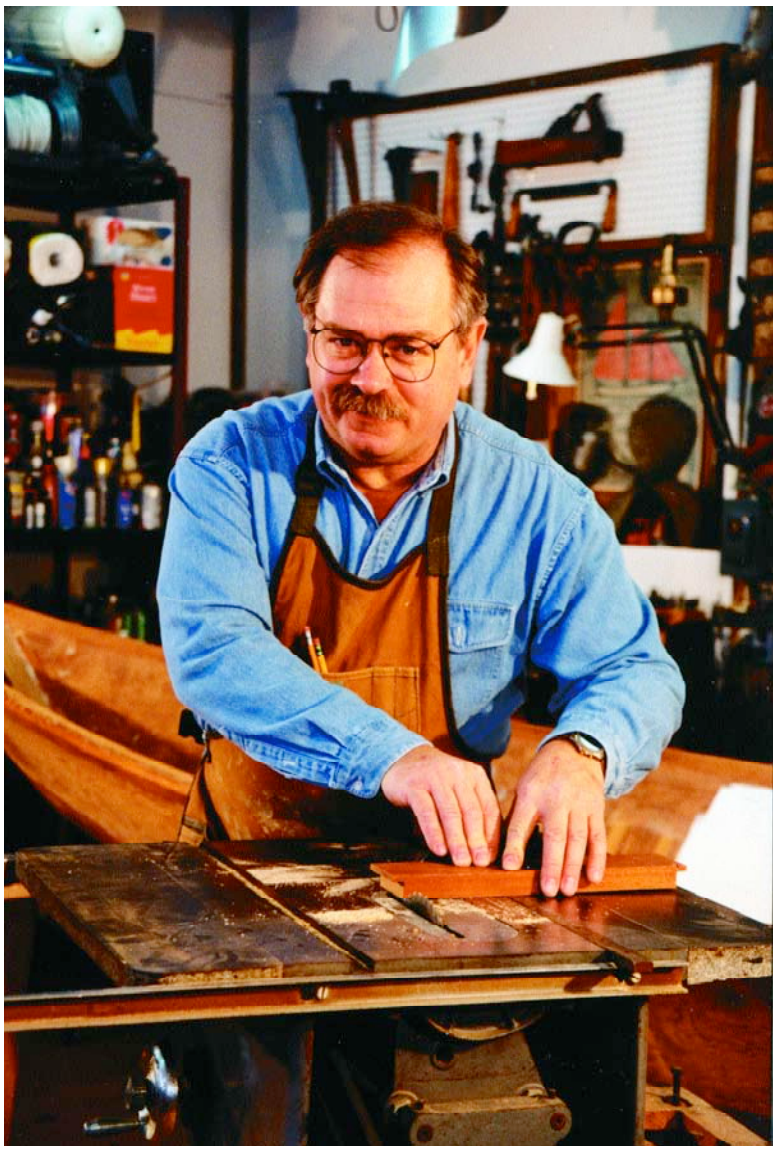
I will not write about mathematics again. I will not write . . .

*Jerry is* Good Old Boat *technical editor.*

# Boatbuilding *for the rest of us*

## *TV series helps builders, gets people on the water*

***by Karen Larson***



***A natural boatbuilder and a natural in front of the camera, Dave Dean helps boaters get started with their own small craft projects. He makes it look easy and reminds others that the purpose of boats is to get out and spend time on the water. Boats are not meant to be museum pieces.***

David Dean likes messing about in boats. He likes working with wood, building boats in particular, about as much as he likes being on the water in them. Almost as soon as we meet, he says, "Boating should be an *inclusive* sort of thing. Yachting seems *exclusive*." Since 1996, Dave has been on a quest to bring boating to the people through the power of television.

His cable television show, *The Boat Shop,* is all about messing about in boats. Tune in, and it will be just you and Dave working together on a boat project while he shares some of his boatbuilding secrets and a bit of commonsense philosophy. "Seek results, not perfection," he tells you. "Remember this is a workboat, not a piano." He shrugs off a small imperfection in the project and advises you to do the same with your own boat. His warmth is genuine. His woodworking skill is obvious. And his goal is simple, "It's not important *how* you get out on the water, just *that you do*," he advises.

The letters Dave receives from viewers often tell him, "I'm an older guy. I've had a set of plans for years. But I never realized, until I watched your show, how easy it is to build a boat." Setting free this creative force in others is one of Dave's greatest joys.

Dave wasn't born with a vision of some day producing and starring in his own series of television shows. First a series of happy (and some painfully unhappy) coincidences led him to a point of increased introspection while sharpening his perspective of what he could accomplish with the skills he had.

***What you don't see when watching* The Boat Shop *is the camera in the shop with Dave Dean, the retakes to give viewers a different perspective, and the studio in the next room where it's all put together.***

## Learning skills

At 53, he looks back fondly at boatyard jobs where he spent time learning skills from "the old guys." In fact, he says, "That's the only place you can find these skills. You pick up a little bit from each person you meet."

A Michigan boy who grew up in boats at the summer cottage, Dave says he struggled in school but understood geometry without ever opening a book. He was accepted at Harvard but went to Georgetown instead. Mostly he enjoyed his involvement on the freshman sailing team and in summer stock theater. "I should have gone to Julliard instead," he says ruefully. After he'd played for a year, no one was too surprised when he was kicked out of school.

In the mid-'70s, Dave was married and running a boatyard in Traverse City, Mich., building large Atkins designs. Then he was diagnosed with cancer while still in his 20s. This heavy blow to a young man with his life still unfolding caused him to rethink everything, as he puts it. Families are often brought closer together by a health crisis of major proportions, but just as often they are broken up by the stress. Dave's young marriage suffered, and a divorce followed.

While he was searching for clear answers to nebulous questions, Dave was invited to run a video camera doing investigative work for a lawyer friend. Video technology was still evolving. Dave grew with it. Then another friend asked him to put those skills to use for him. This friend was producing a television series called *The Michigan Boater.* Dave says his involvement on the show brought more how-to projects to the viewers, and viewership picked up. Mail started flowing in. The project came to an end when funding ran out, but Dave's

***A boat in the shop will eventually evolve into a beautiful and useful finished craft such as the one on the facing page. To learn when and where this television series can be viewed, go to: <http://www.theboatshop.com>.***

eyes had been opened by the experience.

## Bought equipment

This was his defining moment. "I came up with the money to buy my friend's video equipment," he recalls. "I turned my barn into a studio. And I launched my own show in 1996." Of course, it is easier now to tell it in retrospect than it was to do it the first time around without a road map.

Dave was (and still is) living in an old farmhouse in Suttons Bay, a beautiful small coastal community on Michigan's pinkie finger (if you visualize the mainland of this state as a left hand). The farm has a real barn full of treasures Dave has collected: old cars and motorcycles, boats, tools, and the usual assortment of rodents (these were not really "collected" as such, rather they are "volunteers").

The barn and Dave's lovely old red 1959 Willys Overland pickup truck create the opening scenes of *The Boat Shop* and take viewers back in time to Dave's reality: a place where time really has stood still.

And there he is cutting out another small boat surrounded by clamps, spokeshaves, sanding blocks, chisels, and epoxy cans. While shaving a rudder, he looks you in the eye and says, "One thing I've learned while working around the boatyard is that you need a clock that runs at half speed. Everything takes twice as long as you thought it would."

Sage advice delivered one-on-one to you, the viewer. What you are unaware of is the production crew, the extra lights, the shot setups, the editing suite in the next room, and the struggle to find sponsors to fund a program costing upward of $750,000 for 13 segments (a year is broken into quarters, each consisting of a series of 13 segments).

## Impossible dream

How many boaters have searched for a way to spend time messing about in boats while simultaneously being gainfully employed? At first glance, Dave Dean has achieved the impossible dream. But a closer look reveals the intricacies of television programming.

*"One thing I've learned while working around the boatyard is that you need a clock that runs at half speed. Everything takes twice as long as you thought it would."*

Dave now knows more than you were ever afraid to ask about Nielsen ratings, networks, uplinks and downlinks, clearances, exchanges, and syndications.

In a nutshell, *The Boat Shop* was carried by a local Michigan PBS station in 1996. Soon it was also being carried on stations in New Jersey, Miami, New Orleans, and Houston . . . "It was popping up all over," Dave says. He was able to tell this from the mail he was receiving. Formal Nielsen ratings presented an impossibly high-buck way of getting the same information, he explains.

There had been no promotion, yet *The Boat Shop* was available for viewing in 30 to 40 million households. "People started seeing it. The buzz started growing," Dave recalls. Two years later he was "lashed up with American Public Television as a syndicator," and he had made a big investment in newer camera and editing equipment.

Dave Dean, a small town dreamer and lover of boats, had gone big time. During the 1999-2000 season, his show reached 70 million households.

While the previous segments he produced are still running in some regions around the country and in Canada, Dave is currently creating a new series of 13 segments and seeking sponsorship for these shows.

Each half-hour show includes a part on building a small boat, a piece about boats on the water (or in museums or at boat shows), and something about tools and techniques (sharpening, dovetailing, scarfing, problem-solving). And each show is sprinkled with Dave's truisms: "There's no mystery in boating. It's as elemental as crossing a stream on a log." (This from a man who once held a USCG 6-pack license.)

Dave's there in his shop with you not so much as an expert, but rather as a brother or uncle . . . the guy next door who just happens to have an old red barn, a classic jalopy, and a love of messing about in boats.

He's in the shop, warm and personable, building projects you can do, too, and encouraging you to take them out and float them . . . sail or paddle them . . . enjoy them. Dave Dean draws you in. The satisfaction of working in wood along with the simple beauty and harmony of a small craft you can make yourself will keep you there. Not bad for a self-described "guy in Suttons Bay with a dream."

*Karen is editor of* Good Old Boat.

**Dave has named his production company Shadetree Productions. Learn when and where his shows are aired by going to his Web site at <http://www.theboatshop.com>.**

# Topside refinishing

## *Practical tips for a brilliant finish from the author of* This Old Boat

*by Don Casey*

Old boats, like old boat owners, weather on their surfaces. For the boat, at least, a well-applied coat of paint can turn back the clock.

The cost to have this done professionally leaves most boatowners in shock. Even if you dumped your dot.com stocks before they tanked completely, the magnitude of this particular expenditure is likely to be incompatible with your motivation for owning an older boat. Fortunately, this is not an intractable problem. Do the job yourself, and you cut the cost by as much as 90 percent with no discernible difference in the end result.

The only paint choice for the uninterrupted expanse of topsides is two-part polyurethane. This paint has astonishing flow characteristics. Anyone — and I do mean anyone — can get spectacular results. Will the finish be perfect? Probably not. In any job you do yourself, you always see flaws, but they will be visible only to your eyes, unless, like a Poe character, you cannot stop yourself from pointing them out to others.

What follows are step-by-step instructions for preparing and painting your boat's hull above the waterline. I'm going to tell you what paint to buy, what thinner to use, and what grit of sandpaper is required at each stage. Do it my way, and you will get the result I get; let (other) boatyard wags deflect you, and you are on your own.

### Paint

The paint you are going to use is Interlux Interthane Plus. You can get a similar finish from other brands, but Interthane is specifically formulated for do-it-yourself application — meaning rolled and tipped. Polyurethane applied in this manner is hardly more hazardous than oil-based enamel, but it becomes potentially lethal when atomized by a spray gun. Don't even *think* about spraying polyurethane yourself. Spray application requires an air-supplied respirator and other safety precautions.

Interthane covers about 200 square feet per quart. Multiplying the beam plus twice the length times the average freeboard in feet yields a fair approximation of topside surface area. Buy enough paint for two coats.

A word about color is in order. I don't presume to influence what color you paint your boat, but there are two consequences that merit your attention. The first is that painting the hull a dark color raises the daytime cabin temperature significantly, something to consider if a cruise to the tropics is in your plans. The second is that dark colors do not flow out as well as light colors, making it more difficult to achieve a stroke-free finish.

### Primer, fillers, and solvents

Unless your gelcoat is in excellent shape (why are you painting?), plan on giving the hull one or two coats of primer. The primer you need is 404/414 Epoxy Barrier-Kote Primer. Coverage is around 100 square feet per quart.

The reducer (thinner) for both the paint and the primer is designated 2333N Reducing Solvent. When you factor in wipe down and brush cleaning, you will need a quart of reducer for every quart of paint and every two quarts of primer.

Right next to the reducer you will find another green can labeled 202 Dewax Solvent. Add a quart of this to your shopping cart.

If you have scratches and dings in the hull, you are going to need some kind of filler to repair them. I typically use epoxy thickened with a low-density filler, but you can also use a premixed epoxy filler, such as Marine-Tex.

The gloss of the first coat nearly always reveals a number of small flaws that you will not have seen on the dull surface. Fortunately, these blemishes are easy to eliminate with a glazing putty. 3M's Acryl-Marine Putty is the easiest to use, and no, it doesn't come in a smaller size.

### Tools and supplies

For sanding, you will need a dozen sheets of 120-grit production paper, and a half-dozen sheets of 320-grit wet-or-dry paper. If you don't already have one, you will also need to buy yourself a palm sander.

Buy an adequate supply of foam roller covers. If you paint one side of the boat in the morning and one side in the afternoon — to avoid painting in direct sunlight — you will need a fresh cover for each application. The strong solvents dissolve ordinary foam rollers, so be sure the ones you buy say they

are suitable for polyurethane. The foam rollers marketed for epoxy application are a good choice.

The quality of your finish is greatly influenced by the quality of your "tipping" brush. Ideally we would like one made from butterfly eyelashes, but the closest we can come is a top-quality badger-hair brush. Expect to spend more than $20 for this essential tool. I prefer a 2½ inch width, but if a 3-inch brush doesn't feel unwieldy to you — you are going to be moving it quite fast — the wider brush can be better.

Only a few of the other supplies mentioned in the accompanying "Shopping List" sidebar (see Page 40) need comment. Spend the extra money for Fine Line (#218) tape. Linear polyurethane has the consistency of milk when applied, and it will wick under lesser tapes. The lacquer is a sanding aid, which I will explain more fully later. Enamel won't do. The disposable brushes are for cutting the paint in at the deck joint and around skin fittings. The rubber gloves must be solvent resistant; use one pair for painting, the other pair for wiping. The respirator is to protect your lungs from the sanding dust, which can be toxic, but after you get a whiff of the dewax and reducing solvents, you may also wear this mask while painting. Ear plugs save your hearing while the sander's running, and they transform the sanding process from teeth-gritting to serene.

## Getting started

First wash the hull with a cup of laundry detergent (Wisk) and a cup of household bleach (Clorox) in a gallon of water. Rinse thoroughly.

Detergent may fail to remove grease and oil, so when the hull is dry, wipe it down with MEK to degrease the surface. Reagent-grade acetone can also be used, but the slower-evaporating MEK holds contaminants in suspension longer. Wear your wiping pair of solvent-resistant gloves and turn the rag often. Change the rag when you run out of clean sides.

*"Don't expect the paint to hide flaws; it accentuates them. If you want a flawless finish, you have to be painting a flawless surface."*

You must, I repeat, *must* dewax the surface you plan to paint. Why would the hull have wax on it? The obvious reason is that you or some previous owner waxed the hull. Less obvious is that the mold was waxed, and that wax transferred to the hull during the original layup. Virtually all bare fiberglass hulls retain traces of the mold-release wax. Silicone is especially tenacious, which is why it has long been a popular wax additive. Neither the detergent nor the MEK will have cleaned the surface of silicone. That takes a dewax solvent — #202.

Do not dewax the hull with a circular motion of the rag. Sweep the saturated rag slowly in one direction, typically in an arc ending at the waterline. Change to a clean side or a fresh cloth often. *(Not all rags are created equal. A rag that was once an article of clothing is not a good choice for finishing work. It has almost certainly been exposed to fabric softener and may even be made of a synthetic material that will dissolve in the presence of some solvents. Commercial rags made from new fabric may also have fabric softener on them. Fabric softener and other contaminants can cause fisheyes in a paint job. It is better to use heavy duty undyed paper wipes.* ***-Ed.****)*

Always dewax the hull before you sand it; otherwise the sandpaper drags the wax into the scratches, making it that much more difficult to remove.

## Sanding

With apologies to Thomas Edison, brilliance is 1 percent application and 99 percent preparation. Don't expect the paint to hide flaws; it accentuates them. If you want a flawless finish, you have to be painting a flawless surface.

Vinyl graphics can be removed by spraying them with Easy-Off Oven Cleaner. Remove a painted-on name with a gelcoat-friendly chemical stripper, such as Interstrip 299E. Be sure you wash away all cleaner and/or stripper residue before beginning your sanding.

If your boat has an indented cove stripe and you intend to paint it, now is the time to sand it. Tear a quarter sheet of 120-grit sandpaper into thirds, then fold these small pieces twice to give you a "fingertip" sanding pad. Wear cloth gloves to protect your fingers and hand sand the stripe.

When you are finished with the cove stripe and any other areas requiring hand sanding, load your palm sander with 120-grit paper and sand the hull stem-to-stem, waterline-to-deck. If you will be sanding away the existing bootstripe, use a flexible straightedge and a scratch awl to score its location

***Back in the water with a new-boat shine, above left. At right, a decade of nicks and scratches are filled with epoxy putty.***

***Solvent wiping in a downward sweep. The hull was wiped completely prior to sanding.***

***Misting the paint with contrasting lacquer aids in seeing where you have sanded.***

***Tipping out the paint. Note the roller in the other hand.***
***The pay-off: Don rolls out the paint.***

beforeyou start. *Do not* run your sander over any edges, such as where the quarters meet the transom. If you do, the sander will cut right through the gelcoat.

It is essential to remove all the gloss — probably not an issue — and to give the surface a uniform anchor pattern for the paint. While you are sanding you should be "looking" for flaws with your eyes and fingertips; anything you can feel will show in the finish coat. Flush the surface to wash away dust and grit. Running water over the sanded hull also can help you spot flaws you may have missed.

Mix your chosen filler and work your way around the hull, filling every flaw. Do not overfill with the idea of sanding the bulge flush. Differences in the hardness of the filler and the gelcoat typically result in uneven sanding and a visible "moat" around your patch. Instead, use a flexible spreader to make the patch flush.

When the filler has fully cured, sand the patches smooth with your palm sander and 120-grit paper. You should not be able to detect the repair by feel. Expect some of your repairs to require a second application of filler. Minor voids can be taken care of with the glazing putty.

Flush the finished repairs. When they are thoroughly dry, wipe down the entire sanded surface one final time with #202. Tape off the waterline, the cove stripe, and other adjacent areas at risk from your flying roller, and the hull is ready to paint.

## Let's talk about weather

You can do the prep work in almost any kind of weather, but you need calm, mild, dry weather to paint. Wind can blow dirt into any paint job, but it will also mar this free-flowing paint with wave patterns. The hull temperature should be at least 50°F but not warmer than 80°F. This limits what time of the year you can do this job in most places. If you try to apply this paint outside these temperature parameters, I can guarantee inferior results. Avoid painting in direct sunlight, which also affects flow-out.

It isn't that hard to schedule this job for a time when you can reasonably expect a run of 60-, 70-, or 80-degree days. But there is a another weather concern, and that is moisture. Two-part polyurethanes cure by a chemical reaction, which is what makes the cured coating so durable, but that chemical reaction is accelerated by moisture. If the air is humid, the paint gels before it has a chance to level out to that mirror-like finish we are after. The result is brush strokes in the finish. Do not paint in the early morning or late afternoon, to avoid the detrimental effects of morning or evening dew. Do not paint when rain is in the forecast. Do not paint when the humidity is above 70 percent. Lower is better. If you are sweating when you are preparing the hull, it is too humid to paint. There are no exceptions, as I was to relearn on this paint job. We don't get many low-humidity days in South Florida between May and December, and because the scheduling of my haul-out was set by other issues, I tried to push the limits. I didn't get away with it.

## Priming

In general, a hull in need of paint should be primed. It is possible to apply the paint without priming if the hull surface is in particularly good condition, but before you decide to do this, test the gelcoat for porosity. Brush a thin coat of regular enamel — bootstripe paint is perfect — onto a test area. Now examine it carefully. If it shows even a single pinhole, the gelcoat is porous and must be primed. The test patch might also develop "fish eyes" caused by wax residue,

indicating the need to rewipe the entire hull with dewaxing solvent.

Even if you decide not to prime the entire hull, all repairs must be primed. The primer in this case is 404/414 Epoxy Barrier-Kote Primer, a two-part product, mixed 3 to 1. Divide the square footage you want to coat by 3 to arrive at the number of mixed ounces you need. Let the combined Parts A and B sit for 20 minutes before adding thinner, then thin about 25 percent by volume; that is, to 20 ounces of mixed primer add 5 ounces of 2333N Reducing Solvent. Thinner is *not* included in the calculation of paint needed.

*"With two people painting, the job should take less than a minute per linear foot. If it is taking you longer than that, your pace is too slow."*

Pour the thinned primer into a paint tray and roll it onto the hull with a foam roller. You can apply the primer without tipping, but in my experience tipping the primer reduces the amount of sanding required to prepare it for painting. Tipping is simply dragging the dry brush lightly across the surface of the paint to eliminate the bubbles introduced by the roller and to smooth the surface. If the primer mix does not flow out smoothly, add thinner, a small amount at a time, until it does.

One coat of primer is usually sufficient to cure porosity, but if the gelcoat exhibits surface crazing, a second coat of primer may be required. If you are using 2100/2101 Multithane Primer as a conversion coat over a previously painted surface, apply it in a similar manner — except that the mix is 4 to 1, and Multithane requires less thinner.

After the primer coat has been applied, clean the brush thoroughly in the reducing solvent. It is not clean until it no longer discolors clean solvent. Wrap the brush in paper to maintain its shape.

Let the primer cure — overnight for 404/414, at least three days for 2100/2101 — then sand it with your palm sander loaded with 120-grit paper. You want the primer to be perfectly smooth, but in the case of a conversion coat, be very careful not to sand through the primer. To prevent this I generally sand the conversion coat lightly and overcoat it with 404/414. This reduces the risk of sanding through and it provides a completely compatible base for the polyurethane.

Always peel away the masking tape before sanding. Remove tape by peeling it back onto itself, not by pulling it straight out. Making your pull slightly away from the paint application, so that the stuck and peeled tape form a flat, narrow V, minimizes the risk of lifting the edge of the fresh paint.

Fill the small blemishes that remain with glazing putty, give it an hour to dry, then block sand it with 120-grit. You can paint over the glazing compound, but repriming is better if it doesn't hold you up.

After you sand these repairs, you should have a flawless surface. Remask the waterline and other adjacent surfaces and wipe the surface one final time with a clean rag dampened with 2333N.

### Mixing the paint

The paint, like the primer, is mixed 3 to 1. Unlike the primer, it does not need any induction time. Divide the square footage by 6.25 to approximate the amount of paint to mix. Our 175 square feet required 28 ounces of paint — 21 ounces of Part A and 7 ounces of Part B. Measure each part carefully, then mix them together, stirring for at least a minute. Take care not to accidentally catalyze the paint or contaminate the reactor in the cans by dipping into either with a contaminated stirring stick.

If you have waited for a dry day, the only remaining obstacle to getting a perfect finish is getting the thinner right. The can specifies between 25 and 40 percent by volume. The rule of thumb I use is that the percent of thinner should be half the temperature. If you are painting in 60-degree weather, you will need about 30 percent thinner. If it is 80 degrees, expect the thinner percentage to be around 40. Be forewarned that if you try to thin the paint more than 40 percent, it will lose its gloss. In fact, the less thinner you need, the glossier the finish will be, which argues for painting on a cool day.

To get the paint at the perfect consistency for ambient conditions, you must test it. Foot-square scraps of smooth-finish plastic laminate (Formica) make perfect test panels. So does a piece of window glass. Since these surfaces are perfectly smooth, any texture you see is in the paint.

Pour a little thinned paint into your paint tray, then lightly load your roller. Roll a thin coat of paint onto the test panel and, with the lightest touch you can manage, drag the tip of the dry brush horizontally across the paint. Tip the entire panel, always drawing the brush in the same direction. Now wait a couple of minutes.

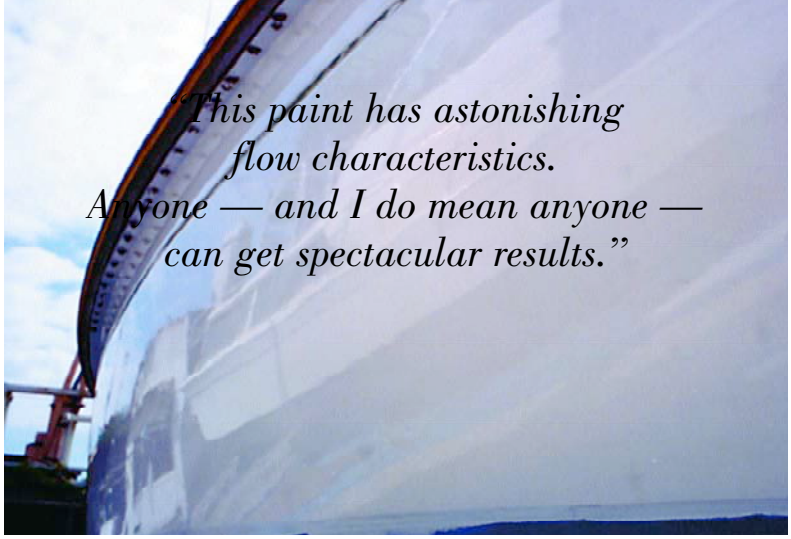
If you have the thinner right, the brush strokes introduced when you tipped the paint will fade out completely. If they don't, you need to add more thinner — always mindful not to exceed 40 percent. If the paint on your test panel runs or curtains (sags), you have too much thinner, and you will need to add some additional mixed paint. As a hedge against this possibility, I always divide the mixed paint evenly and thin only half. Once I have that half exactly

## Previously painted surfaces

Painted surfaces require a couple of additional steps after cleaning to determine their suitability as a base for the fresh paint. First, you want to make sure the old paint is well adhered to the underlying gelcoat. Do this by cross-hatching the old paint with a razor blade in an inconspicuous spot. Make a half dozen inch-long cuts ⅛ inch apart in both directions. Tape over the crosshatching with cellophane tape and burnish the tape down. Now peel it up with a jerk. If the paint comes away with the tape, the adhesion has failed, and the old paint needs to come off.

The second step is a test for compatibility. Saturate a small rag with Reducing Solvent (2333N) and tape the rag against the old paint — again, in an inconspicuous location. Wait 10 minutes, then remove the rag and examine the paint. If the solvent has softened or lifted the old paint, the same thing will happen when you paint the surface. The old paint will need to be protected with a conversion coat or removed.

The appropriate conversion coat is 2100/2101 Multithane Primer. This two-part primer uses a less aggressive reducing solvent, 433 Brush Ease. Follow the instructions in the text for sanding and primer application. However, give the conversion coat at least three days to cure thoroughly before sanding and proceeding.




right, I can thin the remaining half (or less) to the same viscosity by adding a now-known amount of thinner.

Retest the paint after every thinner adjustment. You can reuse your test panel by wiping off the paint application with solvent, but multiple test panels are better.

For your first mix, I strongly recommend mixing only enough paint to cover the transom. This will allow you to get a feel for how the paint goes on and to develop an application technique that is comfortable and gives a good result. If you get a bad result, you can get back to zero the following day in minutes by simply resanding the transom.

## Sprinting for the finish

If you cannot roll the hull-to-deck joint — ours, for example, turns out — cut it in with a brush before you start the roller application. A throw-away bristle brush should do this job adequately. Paint only what the roller won't reach and brush out the paint several times to make sure it doesn't run or leave a proud edge that will show when you roll on the main application. Cut in only the periphery ahead of time, not around skin fittings or other topside features.

Rolling and tipping is ideally a two-person process. Beginning at one end of the hull, one person rolls on a uniform, thin coat of paint from the waterline to the deck. The width of the hull section coated — typically 18 to 24 inches — is not critical and is determined by how much surface a roller load of paint covers. A thin coat is essential, so unload excess paint on the ramp of the paint tray before putting the roller to the hull. The person rolling should work quickly with no more strokes than are necessary to apply the paint uniformly.

While the "roller" reloads — and unloads — the roller with paint, the second person, the "tipper," makes quick, horizontal, parallel strokes through the paint with a dry brush. "Dry" means the brush is never dipped in paint except that already on the hull.

The roller immediately coats the next section of hull, overlapping the previously painted area by an inch or two. The tipper follows with quick, light brush strokes, gently "landing" the brush in the previously tipped paint just behind the fresh roller application and drawing the brush evenly beyond the wet paint onto the dry hull. The tipper must work very quickly, without fuss and with the lightest of touches.

### Shopping List:

- Interlux Interthane Plus — 1 quart per coat per 200 sq. ft. of surface.
- 404/414 Epoxy Barrier-Kote Primer— 1 quart per 100 sq. ft.
- 2333N Reducing Solvent — 1 quart per quart of paint and 1 quart per 2 quarts of primer.
- 202 Dewax Solvent — 1 quart.
- Epoxy and a low-density filler (or Marine-Tex).
- 3M Acryl-Marine Putty.
- 120-grit production paper — 12 sheets.
- 320-grit wet-or-dry paper — 6 sheets.
- Palm sander.
- Foam roller covers — 1 per application of paint or primer.
- Badger-hair brush — 2- to 3-inch width.
- Fine Line (3M #218) masking tape — 2 rolls.
- Roller cage (handle).
- Paint tray.
- MEK (or reagent-grade acetone) — 1 quart.
- Lacquer in contrasting color — 1 aerosol can.
- Measuring cups.
- Mixing buckets.
- Mixing sticks.
- Flexible spreader.
- Disposable bristle brushes — 1 of suitable width per application.
- Rubber gloves — 2 pairs.
- Respirator.
- Ear plugs.
- Box of rags.

Continue this process — roll, tip, roll, tip — without pause or hesitation until you reach the other end of the hull. If the other side of the hull is not in the sun, you can continue on, painting the entire boat in one session. Every 8 or 10 feet, the tipper should dip the tip of the brush into a cup of 2333N, squeeze out the excess, then "paint" the brush dry on a clean rag to keep it from loading up with paint.

Painting with two-part polyurethane is a sprint. With two people painting, the job should take less than a minute per linear foot. If it is taking you longer than that, your pace is too slow.

While the next roller application is going on, the tipper should examine the just-tipped section for sags or holidays that an extra stroke or two can correct. Once you start tipping a new section, you must never go back to a previous section to "repair" a flaw. You will only make it worse. All flaws are corrected with the following coat.

"Gang" painting is easier and reduces the opportunity for disaster, but unfortunately I needed my "gang" to handle the camera. It so happens that on boats up to around 30 feet in length, equally good results are possible with one person doing both the rolling and tipping. You must not pause, even for a minute, so forethought is required to have plenty of paint in the tray and both thinner and rags at hand for quickly cleaning the brush. I find I tend to lose momentum so I have learned to keep urging myself on to keep up the pace. "Go faster" is my mantra. You cannot go too fast, only too slow.

Keep a small throw-away bristle brush handy to use to trim around skin fittings and other obstacles as you paint the hull section that includes them.

## Between coats

As soon as you finish painting, thoroughly clean and wrap your tipping brush.

If you have done your preparation conscientiously, waited on the right weather conditions, and mixed the paint right, you should be standing slack-jawed about now at how good the

***Topsides continued on 58***

# Drying food on board

## *Supplement your galley stores with delicious dried produce*

***Drying apples in the Food PANtrie aboard* Lindsay Christine.**

***by Theresa Fort***

Snacking on dried apple rings, zucchini chips, or salmon jerky brings thoughts of sailing to mind. Dried foods are a wonderful addition to a boat's larder. With 80 to 90 percent of the moisture removed, dried foods take up less space and weigh much less than hydrated foods. Dried foods are not dependent on any power to keep them from spoiling. Plus, there is no loss of food if containers break. The only drawback to having dried foods on board is the requirement of additional liquids either for re-hydrating the foods or for drinking.

Drying foods on a boat can be accomplished through open-air (sun) drying or oven drying. On land, where unlimited AC power is available, dehydrators can be used. Speaking of dehydrators, they don't actually *dehydrate* foods. Dehydration means eliminating 96 to 98 percent of the water in foods. This can only be done commercially. Home/boat drying can only accomplish an 80- to 90-percent reduction in moisture.

Sun drying requires hot sunny days with low humidity in a pollution-free environment. Successful drying can occur on a boat while at anchor with a breeze to help whisk that moisture away or at a dock in a dry climate such as the Baja Peninsula of Mexico.

Oven-drying on a boat can be successful if your oven has a very low setting or pilot light that will keep the temperature between 140 and 150°F.

The best foods for drying are fruits and vegetables, but meat and fish can also be dried in an oven. Food preservation specialists do not recommend drying meats in the open air because of the danger of bacterial contamination and incubation during the drying process.

### Why drying works

Properly dried foods do not support the growth of spoilage organisms. Molds, bacteria, and yeasts are only capable of surviving on or in foods that contain a certain amount of moisture. Highly acidic foods, such as most fruits, are successfully preserved when 80 percent of their water is removed. Low-acid foods like vegetables and meats require 90 percent of their water to be removed. This reduction of water creates a hostile environment for bacteria, yeasts, and molds.

Sometimes salt is used in the drying process, as in the case of jerky and fish. The salt helps by drawing the water from the cells of the food, which shrinks the cells and hastens drying. The salt that remains after the drying is completed protects the food by creating a hostile environment for unwanted organisms.

Bacteria, molds, and yeasts are not the only factors in food deterioration, though. Enzyme action in some foods can result in undesirable flavors, colors, and textures. Because of this, some foods require pre-treatment before drying to destroy or slow down these enzymatic actions.

### Drying inside the cabin

Some open-air drying can be done inside your cabin. Chili peppers are easily dried by stringing them by their stems and hanging them between handholds in the cabin of your boat. Apple rings can also be dried this way.

Fresh herbs are best dried in your cabin by tying their stems into a bundle and placing them upside down in a clean brown paper bag. Close the bag around the stems and tie tightly. Hang this bundle in an out-of-the-way corner. The bag will catch the leaves that fall as they dry. Since herbs should be dried in the dark to retain their flavors and aromas, the bag also provides that protection. In a few weeks, when the herbs are dry, shake the bag to dislodge any remaining leaves. Store them away from the heat of the stove in small glass jars.

### Preparation of foods

The first step in preparing food to be dried is in the selection. It should be as fresh as possible and at the peak of ripeness. It also should be as clean as possible. Scrub it under running water. If produce is bought in a third-world country, soak it for 5 minutes in a bucket of lightly bleached water (1 capful of bleach for 5 gallons). Then rinse in clean water.

After a thorough wash, inspect your produce for soft spots or signs of spoilage. Cut these areas out. Leaving bruises or soft spots will increase the chances of your produce spoiling during the drying process. Next cut away all tough areas like cores, stems, and seeds. Some foods, such as winter squash, should have their skins removed as well.

Foods are then cut into slices appropriate for drying. Depending on the type of produce, the thickness of

***Dried food is a perfect pick-me-up for coastal cruisers and bluewater sailors alike.***

the slices may range from ⅛ inch to ¾ inch. Fruits can generally be left in larger pieces than vegetables since less water needs to be removed. Cut all produce into uniform pieces so the time required to dry each type of food will be the same.

After cutting foods into their proper size for drying, perform any pre-treatments that are necessary. Some produce will need to be blanched. Some fruits will need to be soaked in an acidic fruit juice or salt solution. Some, however, are ready to dry right after slicing. See the table on Page 43 for procedures.

## To blanch or not to blanch

After produce is washed, inspected, and cut, it is blanched if necessary. When an enzyme action can cause bad flavors, odors, or colors, blanching is necessary. During the blanching, the cell is killed. This makes the cell walls more permeable, allowing water to escape. Blanched foods are easier to re-hydrate also. However, the main benefit of blanching is stopping unwanted enzyme processes. In some cases enzymes are needed to help *create* desirable flavors and odors. This is true with garlic, onions, and horseradish.

Most of the vitamin and mineral loss during drying occurs during the blanching process. Vitamin C, in particular, is destroyed by high heat. So *only* blanch food when necessary. (Dried foods have much more nutritional value than canned foods since the canning process is much longer and uses such high temperatures.)

There are two ways to blanch produce: with boiling water or with steam.

## Water blanching

In a large pot, bring to a boil enough water to cover a double layer of produce. Quick removal is essential if you are to retain the nutritive value of the food. Produce which is simply dropped into boiling water is difficult to remove without some pieces getting overcooked, so it is advisable to use a colander or steam basket to keep the pieces together. Or you can use netting or cheesecloth to hold the produce tied as a bundle.

Immerse your produce in the boiling water and begin timing immediately. The water may not return to boiling before your time is over. This is OK. For specific times for water blanching fruits and vegetables, see the table.

## Steam blanching

Blanching produce with steam takes a bit longer because the steam must penetrate all pieces. But steam blanching retains more nutritive value since the produce does not sit in water, allowing vitamins and minerals to leach out.

In a large pot, bring an inch or so of water to an active boil with a good amount of steam. Use a steaming basket to keep your produce out of the water or suspend your bundle of produce in a large piece of netting or cheesecloth just above the water. Another way to steam produce is to use an aluminum pie pan with holes punctured in the bottom. The edge of the pie pan should rest on the pot's edge to hold the produce out of the water. Specific times for steam blanching fruits and vegetables are given in the table.

After blanching (with water or steam), plunge the food immediately into cold water for the same amount of time as the blanching. This stops the produce from cooking any further. Produce is then taken out and spread on toweling to dry for a few minutes.

Now your produce is ready to be arranged in a single layer on your drying trays so that no pieces overlap or touch. It is best to put pieces of uniform size together on the drying trays.

## Pre-treating some fruits

Fruit that is to be dried with the skin still on and not blanched should have the skin pricked with a sharp-tined fork before being sliced into pieces. Pricking the skin helps with mositure loss, thus hastening drying.

Unpleasant color changes that occur in some fruits can be slowed or avoided by a soaking the fruit in an acidic fruit juice like lemon juice, unsweetened pineapple juice, or in a salt solution (4 to 6 tablespoons of salt for each gallon of water). By slicing the fruit right into a bowl of juice or a salt solution, it gets immediate protection from browning. Let these pieces soak for 10 to 15 minutes. After soaking, spread the pieces on toweling to dry for a few minutes. Now your fruit is ready to be laid on drying trays. Arrange them in single layers with no pieces touching or overlapping.

## What to dry in open air

Authorities warn against drying protein products such as eggs, yogurt, and meats in the sun. Staphylococcus and salmonella bacteria thrive on these foods. There is no way to test the safety of the food.

Fruits are generally easier to dry in the open air than vegetables. The following guide may help:

**Fruits easier to dry** – Apples, apricots, cherries, coconut, dates, figs, guavas, nectarines, peaches, pears, plums, prunes.

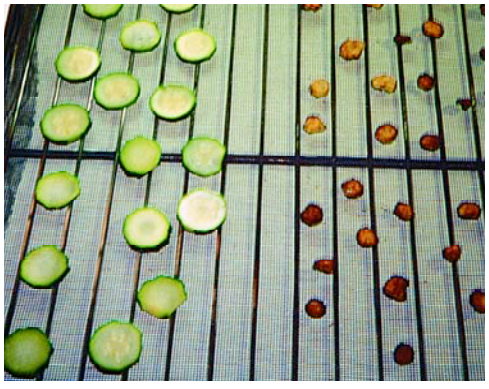
**Fruits harder to dry** – Blackberries, bananas, breadfruit, grapes.

**Vegetables easier to dry** – Chili peppers, sweet corn, sweet potatoes, onion pieces.

**Vegetables harder to dry** – Asparagus, beets, broccoli, carrots, celery, greens, green beans, sweet peppers, squash, tomatoes.

## Open-air (sun) drying

Arrange food on your drying trays. The trays need to be kept off the deck an inch or two to allow for air circulation but low enough to allow the deck's light color to radiate the sun's rays back to the food. To protect the food from bugs and other contaminants, cover the trays with cheesecloth or



***Zucchini before drying, at left, and ready for storage, at right.***

## Drying produce

| Produce | Preparation | Blanching/Pretreatment | | Drying | | |
|---|---|---|---|---|---|---|
| | | Method | Time | Method | Time | Done when |
| **Green beans** | Wash thoroughly. Cut in short pieces or lengthwise. | steam<br>water | 4-5 min.<br>3.5-4.5 min. | oven<br>sun | 3-6 hrs.<br>8 hrs. | brittle |
| **Carrots** | Use only tender and crisp carrots. Cut off roots and tops, wash. Cut into slices or strips. | steam<br>water | 3-3.5 min.<br>3.5 min. | oven<br>sun | 3.5-5 hrs.<br>8 hrs. | tough to brittle |
| **Corn, cut** | Husk and trim while on the cob. Wash. Cut kernels from cob after blanching. | steam<br>water | 2-2.5 min.<br>1.5 min. | oven<br>sun | 2-3 hrs.<br>6 hrs. | brittle |
| **Mushrooms** (Edible types only. Drying does ***not*** destroy toxins.) | Pick young un-bruised mushrooms only. Scrub thoroughly. Discard all tough stalks. Cut tender stalks close to the top. Slice thinly. | none | | oven<br>sun | 3-5 hrs.<br>6-8 hrs. | leathery to brittle |
| **Peppers** | Wash thoroughly. Stem, core, and remove partitions. Cut into strips. | none | | oven<br>sun | 2.5-5 hrs.<br>6-8 hrs. | leathery to brittle |
| **Hot peppers** | Pick only blemish-free peppers with stems firmly attached. Wash thoroughly. | none | | Thread string through stems and tie a knot at each. | several days in open air | leathery |
| **Tomatoes for stewing** | Wash. Steam or dip in boiling water for time period. Then chill in cold water to loosen skins. Peel. Cut. | steam<br>water | 2.5-3 min.<br>1 min. | oven<br>sun | 6-8 hrs.<br>8-10 hrs. | leathery |
| **Sun-dried tomatoes** | Use paste-type tomatoes (plum). Wash. Slice in half lengthwise or into thirds. | none | | Place cut side up on screens. | 1-2 days | leathery but pliable |
| **Summer squash** | Wash. Cut stem off and slice thinly. | steam<br>water | 4 min.<br>3 min. | oven<br>sun | 6-8 hrs.<br>8-10 hrs. | brittle |
| **Onions** | Wash. Remove outer papery layers and cut off tops, root end. | none | | oven<br>sun | 3-6 hrs.<br>8-11 hrs. | brittle |
| **Peas** | Shell peas and rinse well. | steam<br>water | 3 min.<br>2 min. | oven<br>sun | 3 hrs.<br>6-8 hrs. | wrinkled and brittle |
| **Apples** | Wash. Peel or leave unpeeled. Core. Cut into slices. | steam<br>water<br>soak in acidic juice or salted water | 5 min.<br>3-4 min.<br>10-15 min. | oven<br>sun | 6-12 hrs.<br>3-4 days | soft and pliable, no moist areas when cut into |
| **Apricots** | Wash. Pit or halve for steam blanching or acidic juice soaking. Leave whole for water blanch then cut in half. | steam<br>water<br>soak in acidic juice | 3-4 min.<br>4-5 min.<br>10-15 min. | oven<br>sun | 24-36 hrs.<br>2-3 days | same as apples (to shorten time, cut smaller pieces) |
| **Nectarines and peaches** | Wash. Blanch if you want to remove skin. Cut in half. If you want to leave skin on, cut in half and soak in acidic juice. | steam<br>water<br>soak in acidic juice | 8 min.<br>8 min.<br>10-15 min. | oven<br>sun | 36-48 hrs.<br>3-5 days | same as apples (to shorten time, cut smaller pieces) |
| **Pears** | Wash. Cut in half. Peel if desired. | steam<br>water<br>soak in acidic juice | 6 min.<br>none<br>10-15 min. | oven<br>sun | 24-36 hrs.<br>5 days | same as apples (to shorten time, cut smaller pieces) |
| **Grapes** | Wash. Leave whole. | none | | oven<br>sun | 12-20 hrs.<br>3-5 days | texture like a raisin, no moisture in center when cut |
| **Herbs** | Rinse quickly under running water. Pat dry with paper towels. | none | | oven<br>sun<br>paper bag inside cabin | 11-13 hrs.<br>6-8 hrs.<br>up to 2 wks. | dry and crumbly |
| **Seaweed** | Wash in fresh water to get rid of any rocks or tiny creatures. | none | | oven<br>sun | 2.5-3.5 hrs.<br>6-8 hrs. | brittle |

## Resources

For more information about drying foods, call your local county extension agent. I've found these books to be useful:
***Stocking Up***, by Carol Hupping and the staff of the Rodale Food Center. (Rodale Press)

***Putting Food By***, by Ruth Hertzberg, Beatrice Vaughan, and Janet Green. (Stephen Green Press)
***Food Drying: How to Dehydrate, Store, and Use Vegetables, Fruits, and Herbs***, by Phyllis Hobson. (Garden Way)

**Food PANtrie**
Product Source International
1101 Main Street, #104-500
Evanston, WY 82930
307-789-1285, 801-556-1966;
<http://www.domehabitat.com/pantrie. htm>

netting so that it doesn't touch the food. Check the food periodically and turn the pieces a few times a day. To avoid evening dew, bring the trays in each night at sundown and out again as soon as the sun begins to warm the deck. Timing only takes place when food is outside. On the second day of drying, begin to check the foods for doneness. The table tells you what each food should be like when done drying. Drying times are approximations.

If the sun is too intense for your foods, you will need to move them into the shade of an awning so the outsides of the food do not cook. It is a good idea to bring the trays into the shade when the food is about three-quarters dry anyway. You will get a tastier and better product.

On board *Lindsay Christine* we carry a portable hanging food dryer called a Food PANtrie. By sewing a loop on the two opposite bottom edges, it hangs easily in the rigging by its top hook. It can be controlled in light winds by tying it by the two bottom loops to handrails. The black netting around the four trays protects the food from contamination and increases the temperature inside the drier, allowing us to dry foods in less than hot conditions. When not in use, it folds up into its top plastic cover with a plastic bottom that we bungee on. It is small enough to stow under our settee. The trays are made of food-grade plastic and are easily removed for washing. This handy dryer has a double duty as a sprouter when we aren't drying food.

## Pasteurization

If there is any chance that bugs or airborne microorganisms contaminated your food while it was drying, pasteurize it before storing. Preheat your oven to 175°F. Spread the food loosely on trays or netting, using no more than two trays at one time. Place the food in the oven. Small pieces should be heated for 10 minutes; larger pieces for 15 minutes. Remove the pieces from the oven and spread them out on clean toweling. When it is thoroughly cool, package up your food.

***The Food PANtrie, collapsed and ready for storing.***

## Drying trays

Drying trays can be made with netting and unfinished 1 x 2s or stretcher bars (pieces of wood used to stretch painting canvases as a framework, found in arts and craft stores). Do not use metal screening for the bottom. Aluminum discolors food, copper destroys vitamin C, and galvanized screen is treated with zinc and cadmium, which would be dangerous near food to be consumed. If you have no choice other than to use metal screening, protect your food by placing clean muslin over the screen before arranging the food. This will reduce the air circulation around the food, but it will give you a safer product.

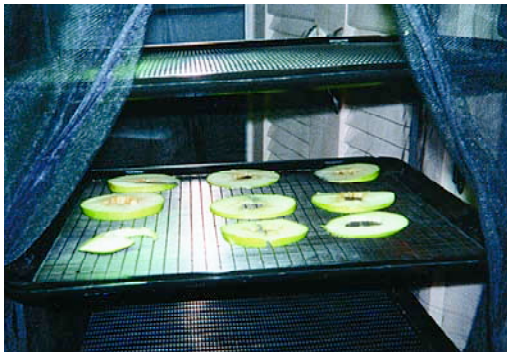
Even fiberglass, with its tiny splinters, can be hazardous to use as a bottom. If you use vinyl-coated screen, make sure it is food grade and will handle temperatures up to 140 to 150°F for oven drying.

Cloth netting is the best choice for tray bottoms as long as the mesh is no bigger than ½-inch. Mosquito netting will work unless it is made of a plastic that can't take 140°F. Cheesecloth can also be used if doubled over for extra strength, but it is difficult to clean for reuse.

With unfinished stretcher bars, make a rectangular or square frame. If you will be using the trays in the oven, the size depends on the size of your oven. The frames should be at least 1½ inches smaller all around than your oven interior to allow proper heat and air circulation.

Cut the netting to overlap the frame by 2 inches all around and double it over before stapling or tacking the edges to the frame. If you need more support, string lines diagonally under the frame.

A light coating of vegetable oil spray applied before food is arranged can prevent foods from sticking to the netting.



***Oven-drying apples.***

## Drying meats

We often saw fish drying on tin roofs in cities on the Mexican Pacific coast when we were cruising that area in 1995 and 1996. And being from the Pacific Northwest where salmon is commonly dried and smoked, I am used to the idea of drying fish in the open air or over a smoky fire. But it is not believed to be safe to dry your own meat outside these days. At least that is what the USDA and extension food specialists say. Why? With the rise in occurrences of e. coli, salmonella, and other bacteria showing up on meats sold in the United States, food preservation specialists have become cautious in their guidelines. And with good reason. Raw meat can incubate bacteria easily and quickly, even when we sanitize our preparation area and wash our hands well.

Because there is no known way to tell if the meat you dried outside is safe, those making the guidelines are hoping people will stay on the safe side, using the guidelines explained below. In fact, these days the authorities are only giving directions for drying meats as jerky. As for that huge fish you just caught while reading this, it is up to you how to preserve it. I know of many who swear they can dry fish by hanging it in the rigging. If you choose to be counted as one of those, remember that the cleaner the area is where you process your raw meat, and the quicker it dries, the safer your product will be.

Dry only very lean meats since fat will eventually become rancid. If you wish to dry wild game or pork, freeze the meat for several weeks to kill any of the tiny worms that cause trichinosis.

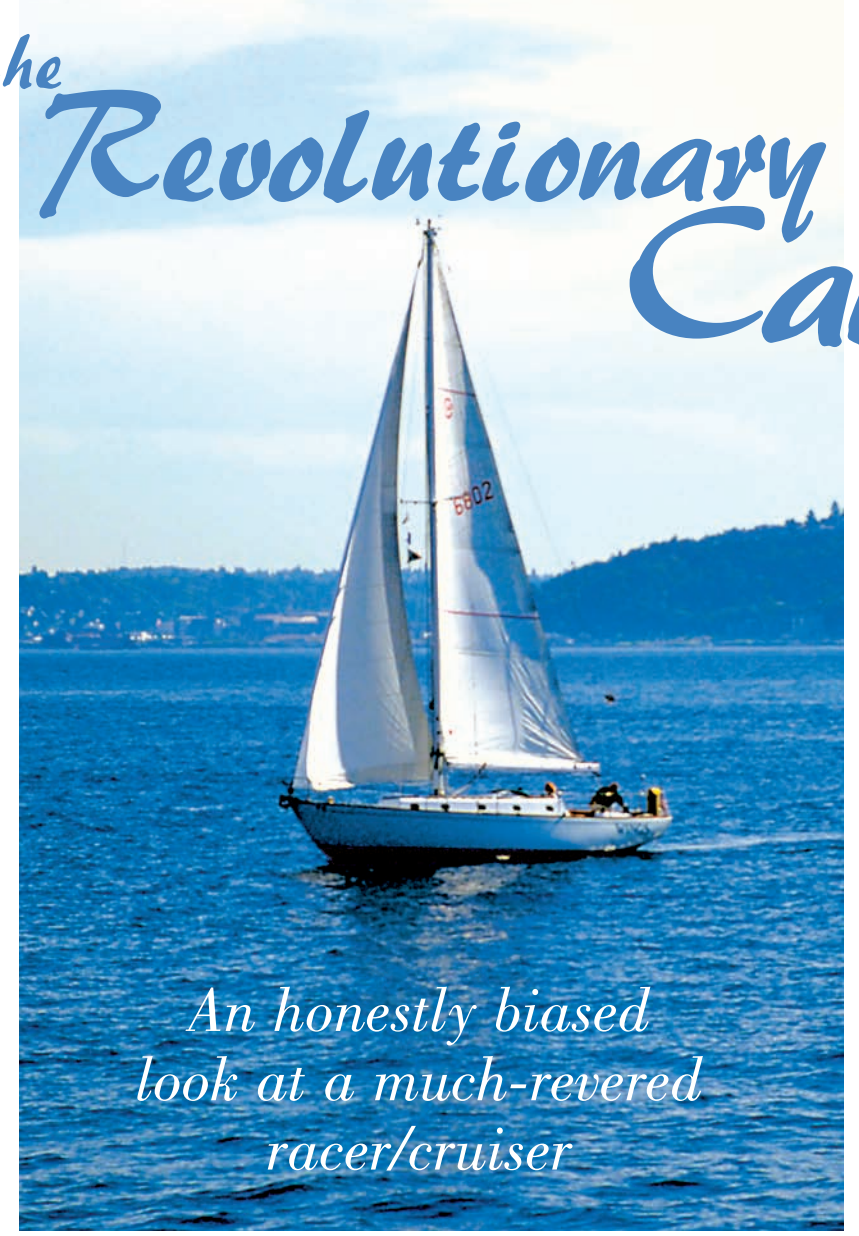
## Making jerky

Jerky is a popular snack. You can make your own jerky by following a

***Drying continued on 80***

# The Revolutionary Cal 40

## An honestly biased look at a much-revered racer/cruiser



**Wings** ***enjoys a daysail in Seattle. This Cal 40 is owned by three Seattle couples: Steve and Kathy Jacobsen, Chris Pittack and Annie Fitzpatrick, and Bob and Kathy Peters.***

**by Ed Lawrence**

Lest there be any confusion about where I'm coming from, I think that, despite her age, the Cal 40 is as legitimate a "performance cruiser" today as she was when launched more than three decades ago. I don't care that she is not a floating condominium designed for dockside entertaining, that her main saloon is not outfitted with an entertainment center, or that her galley does not have a microwave.

Not that I'm averse to speed and comfort, mind you.

*Speed?* She's legendary for surfing to 20 to 25 knots during passages between California and Hawaii. For the record, this Bill Lapworth design is the winningest ocean-racing-class boat of all time.

*Comfort?* The cockpit is large enough to seat eight NFL linemen. Spaces belowdecks are large enough to cook three-course meals for the crew. Settees are long and wide. She will sleep eight in comfort, not that she needs a crew that large to produce fast passages. And there's enough wood joinery to create a warm, nautical environment.

I warned you: I like this boat.

### Design

Like many boats produced during an evolutionary period in the 1960s, the Cal 40 has an interesting pedigree. Her design commission originated in 1963 with George Griffith, an avid racer in Southern California who completed his first Los Angeles-to-Hawaii race in 1941 at age 20.

"I owned a Lapworth 36 at the time and wanted to build a faster boat. I felt that designing a more powerful midsection and increasing sail area would improve downwind performance, so approached Bill about the project," George says.

The fifth in a line of Cal designs conceived by Bill Lapworth, the 40 is an evolutionary shape. Her hull shape was described by contemporaries as symmetrical with a moderately narrow stern and full bow.

"Design aspects that set her apart from her contemporaries were lighter displacement, a long waterline, moderate deadrise, a fin keel, and a spade rudder," Bill says. A nearly flat bottom produces a powerful hull with a generous waterline beam that allows her to surf when sailing downwind. A byproduct of the flat bottom is that she pounds when going to weather, a condition offset by reducing speed or footing off. Though the full bow detracts slightly from light-air performance, she's light enough in the ends to lift.

Bill Lapworth made history by designing a deep, high-aspect ratio, balanced spade rudder that delays stalling while producing lift with low drag. The shape is fairly broad at the top and fits close to the hull, which acts as an end plate to reduce turbulence. He is generally considered by peers to have been one of the few designers who could design a functional spade rudder.

### Retrofitting rudders

Many current owners, however, especially those preparing for extended bluewater passages, have retrofitted Carl Schumacher-designed rudders that reduce loads when sailing downwind in a blow (see sidebar on Page 48).

Since the coachroof is only 16 inches high, the Cal 40 has a pleasingly low profile. She carries a moderate sail

## Resources for Cal 40 sailors

**Cal 40 Class Association**
Fin Beven
626-795-3282, ext. 111
finbeven@msn.com

**Puget Sound Cal 40 Owners' Association (The Roaring 40s)**
Bob Peters
425-649-9167
robert.a.peters@boeing.com

**Cal Email List Web Site**
http://www.calyachts.org

**Cal Email Discussion List**
http://members.sailnet.com/resources/links/list/index-new.cfm?id=cal

**Cal Email Discussion List FTP Site**
ftp://ftp.sailnet.com/Cal



***Fin Bevens'* Radiant, *above, sails near Pasadena, Calif., and* Wings, *at right, frequents Puget Sound, the San Juan Islands, the Gulf Islands, Desolation Sound and Barkley Sound on the west coast of Vancouver Island.***

plan with a medium-aspect ratio characterized by a longfooted main that balances a spinnaker when running. Her sail area/displacement ratio is 18.3, so she's significantly lighter than what then was the Cruising Club of America's target of 15.4 for sloops. Compared to boats of her generation, she is light; the displacement/length ratio is 242 — now considered average, but revolutionary in the 1960s. With a Performance Handicap Racing Fleet (PHRF) rating of between 108 and 120, she's a rocket when compared to boats of her vintage. The Columbia 40, for instance, which rated 170, had a 27-foot waterline and displaced 20,000 pounds.

Now 82, Bill Lapworth says, "The Cal 40 received a lot of attention, and is one of my favorites."

Eventually, with completed blueprints in hand, George Griffith began seeking a builder. "I first went to Kettenburg, in San Diego, and he threw me out of his office. Lester Stone, in San Francisco, told me he'd build the boat, but I wouldn't like it or the price. Stevens Brothers, in Stockton, told me the same thing."

Jack Jensen, of Jensen Marine, attempted to dissuade George Griffith from pursuing the project but, when he committed to buying 10 boats, Jensen Marine assumed the task.

### Overall honors

George took delivery of hull #1, *Persephone*, and the following year, hull #2, Jack Jensen's *Conquistador*, took overall honors in the 1964 Southern Ocean Racing Conference (SORC). That victory was the first of a series of successes that included Ted Turner's first-place finish aboard *Vamp* in the 1966 SORC. The boats collected three consecutive first-place finishes in the Transpac between 1965 and 1967, and they were still winning ocean races in the 1990s.

Jensen Marine produced more than 160 Cal 40s. Like many independent builders who became takeover targets, Jensen Marine eventually became Bangor Punta, which became Siegler Marine, Starcraft Sailboat Products, and, finally, just plain Cal Boats. It ceased operation in 1989.

One of the first boats constructed of fiberglass, the Cal 40 played an important role in establishing laminates as a legitimate construction material.

### Deck Layout

Step onto the stern platform of this 40–footer and you face a long, lean cockpit. Since she's tiller-driven, there is little visual clutter to obstruct the view forward or to interfere with movement fore and aft. At the dock, crew and guests can lounge comfortably on eight-foot-long cockpit seats. The afterdeck is 38 inches wide, an ideal location for lazing on a folding chair with a good book.

Winch islands are aft of the helmsman, who stands at a tiller, remember, and within easy reach of crew

who can easily tend sheets and guys without interfering with the helmsmen. Sail controls also are close enough to the helm for singlehanding.

The cockpit has no lazarettes. However, a storage area below is accessed via a hatch on the stern, the perimeter of which houses cords that hold sheets, guys, and fenders.

The single-spreader masthead rig and standing rigging are typical of the era. The mast is stepped to a fitting at the level of the cabin sole, and three shrouds are outboard. Interestingly, the forward lower shroud is positioned 30 inches in front of the mid shroud; many owners disconnect it from the turnbuckle and pin it inboard to allow for better sheeting angles on headsails when sailing to weather. Standing rigging deadends at chainplates that are solidly secured to a transverse bulkhead tied into a heavy section in the bilges. Since decks are 20 inches wide, the bowperson need not be an acrobat to move forward in a blow.

Headsails may be led inboard on a 46-inch long track or outboard on a track that runs from the stern pulpit to the shrouds.


**Wings** ***enhances the Seattle skyline.***

## Accommodations

One owner describes the Cal 40 as "just *not* a liveaboard." Another has cruised the South Pacific with his wife, in comfort. So, we now know why Ben and Jerry make both chocolate and vanilla.

My test boat was *Wings*, which belongs to a trio of active sailors: Christian Pittack and Annie Fitzpatrick, Bob and Kathy Peters, and Steve and Kathy Jacobsen.

Though she was built ages before the major production manufacturers managed to create interiors that look like Park Avenue apartments, she's as spacious and well laid out as any similarly sized boat. And she'll never be compared to the stripped-out racers on the IMS circuit. A crew of six could sail comfortably to Hawaii, as could a crew of 10, since at least two crewmembers will always be on watch.

The centerpiece belowdecks is a wide-open saloon that's more than 10 feet long on the centerline and six feet wide between settees. It's a bit small for square dancing, but six crew members can move about without rubbing elbows.

The galley, located to port at the foot of the companionway ladder, runs forward along the hull. Some galley

## Performance

Among Cal 40 owners are Stan Honey and Sally Lindsay, who sail *Illusion* on San Francisco Bay and between California and Hawaii. Not your average boatowners, Stan is the navigator for Steve Fossett's *Playstation*, which recently made a record-shattering four-day passage across the North Atlantic. He's also navigator for Roy Disney's sled, *Pyewacket*. Stan and *Illusion* won the Singlehanded TransPac in 1994. A celebrity in her own right, Sally was twice named Rolex Yachtswoman of the Year. The couple won the doublehanded San Francisco-to-Hawaii Pacific Cup in 1996 aboard *Illusion*, setting the fastest corrected time in history in the process.

Their tips on sailing the Cal 40: "The Cal 40 is very well behaved on all points of sail and much faster upwind in wind over 10 knots than is generally thought. By today's standards the boat doesn't pound upwind any more than a modern design. The boat is very fast reaching and absolutely delightful downwind, particularly in a breeze and in waves.

"The boat has a single-spreader rig, which limits sheeting angles on the 150 genoa. So upwind, in light air with the 150, the boat points a few degrees below a boat with a multi-spreader rig. We find that if we are sailing well we are still competitive, but it can get tactically tricky to not have a "point-mode" in light air. Tacking through 90 degrees is about normal with a 150 in light air.

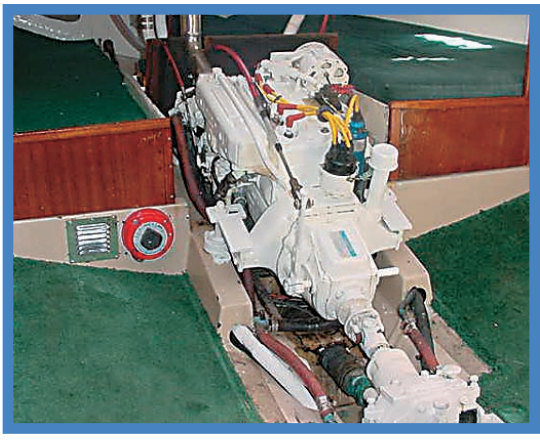
"Upwind, in enough wind to use a #3 jib, the boat is very competitive. A #2 jib is likely a poor choice for the boat upwind because of the long spreaders.

"The best point of sail is reaching and running in lots of wind. We have seen 25 knots of boat speed downwind while surfing. That boat is a cream puff to steer."

Highlights of the Pacific Cup? "Even though we were double-handed, the boat was easy enough to sail as hard as if we were fully crewed. We changed spinnakers about 15 times during the race, and jibed 50 times. Those are normal numbers for aggressively sailed, fully crewed boats.

"When I won the singlehanded TransPac, my passage was faster than any of the 200-plus fully crewed Transpac passages in Cal 40s. Being 10-percent lighter was a major reason, but the passage would not have been possible if the boat wasn't easy to handle for me and easy for the autopilot to steer in waves under spinnaker. I carried a spinnaker continuously for the last eight days of that 11-day passage," Stan says.

What tips would you provide a new owner? "The Yanmar 3GM30FRV fits perfectly if you need a new engine. Don't let the plumbing to the head leak — it can cause the steel I-beam to rust. Don't worry if the tabbing on the bulkheads is broken, just reglass it with X–mat and epoxy. Don't shorten the boom. Leave the boat in its class configuration so it remains a Cal 40." Stan says the I-beam is a galvanized steel beam running athwartship under the mast step with tie rods connecting it to the main shroud chainplates. It was heavily galvanized and is typically in good shape on Cal 40s today unless the boat was left full of salt water or the toilet had a persistent saltwater leak. Check this when buying a Cal 40.



***Above*, Radiant's *31-hp gas engine. Others are interiors on* Wings.**

## Rudder improvement

*Carl Schumacher says about the Cal 40:*

"I think there are two reasons that most of the owners are retrofitting their Cal 40 rudders. One is to get a more up-to-date plan form and its increased efficiency. Remember, the original one was designed almost 40 years ago.

"Two: control has never been a problem on these boats. The ability to push them hard is one attribute that made them legendary. But the helm loads are heavy and tiring. The new rudders have a slightly higher-aspect ratio and more balance. This has lessened the loads required for steering.

"These boats are still really great. When someone is looking for a good cruising boat in the low $50,000 range, it is one of the first that I recommend. When growing up in Newport Beach during the '60s, all of us wharf rats would lust over them.

"The bottom is a little flat, and they have a reputation for pounding. A friend of mine who cruised one with his wife for a couple of years in the South Pacific said they would just slow the boat down a little by reducing sail area. The ride would smooth out, and they were still faster than most of their friends. I would say Bill Lapworth was leading his time in yacht design. He also led the development in fin keels and popularized the use of spade rudders on big boats."

slaves complain that this makes cooking difficult in a seaway on a port tack since they are leaning backward. However, if you're leaning to leeward while cooking, what difference does it make as long as you have a safety belt?

Reflecting the boat's pedigree, however, the galley is a rather Spartan affair consisting of a stove, sink, large countertop, and several storage cabinets and doors. The icebox, located to starboard in the nav station, is notorious for having inadequate insulation. Serious cruisers will find it necessary to install new insulation or become acclimated to drinking tepid beer.

## Second-class

Unless conditioned to working while standing facing outboard, the navigator aboard a Cal 40 will feel like a second-class citizen. The chart table is large enough to roll out a full-sized chart, and space is available for the installation of instruments. However, I'd prefer to work facing forward on a seat.

Berths are located in the stern, amidships, and in the bow. The port and starboard quarterberths are so large they are commonly referred to as "torpedo tubes." Berths are 6 feet 4 inches long and 22 inches wide and have 30 inches of headroom, so it is possible to read comfortably in an upright position. A hazard is that the spaces could easily become as cluttered as Fibber McGee's closet. Storage outboard of the berths is 24 inches wide, 30 inches tall, and runs the length of the berth. On *Wings*, the space housed pots large enough to boil pounds of spaghetti and large baking pans. The only downside is that this will be a noisy spot when the diesel is running.

Space for four sleepers in the main saloon is on two settees and two weather berths. The shortest berth is 76 inches long and 26 inches wide, adequate for a typical adult. The skipper's V-berth measures 72 inches on the centerline and is 74 inches wide.

Bill Lapworth faced an interesting challenge while attempting to keep the engine low without intruding into living spaces. Because the exit for the drive shaft is in a shallow section of the hull, he solved the problem by mounting the engine backward and installing a Wolter V drive. It works!

## Construction

Considering that Jensen Marine built the Cal 40 during the infancy of the fiberglass building process, these 35-year-old-boats have maintained their structural integrity surprisingly well. Hulls and deck were handlaid of solid fiberglass. Wooden bulkheads and cabinetry tabbed to the hull acted as stiffeners and produced interior structures. Decks were reinforced with plywood in areas where hardware was installed.

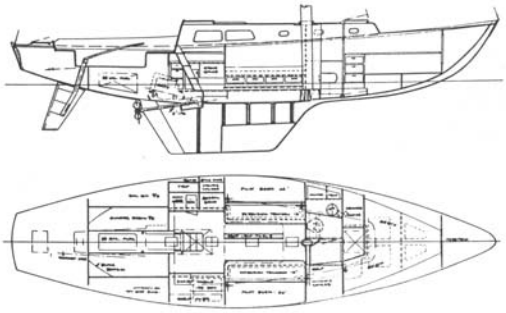
However, well-used boats need careful inspection in several areas. Strips of fiberglass cloth and resin were used to secure cabinetry to the hull. It's worth inspecting these laminations to assure the integrity of these bonds; many boats require reinforcing to prevent structural failure.

Similarly, the exterior of the hull at the keel bears close inspection. The ballast is an internal lead casting dropped into the keel before the insides were assembled. If it's not properly repaired, a vessel that has been hard aground may have water inside the cavity. Repairs will be awkward.

A caution: wiring runs are virtually inaccessible behind the interior cabinets and, in some spots, low enough to be submerged if the bilges fill. Many owners have taken the precautionary step of re-running wires inside PVC.

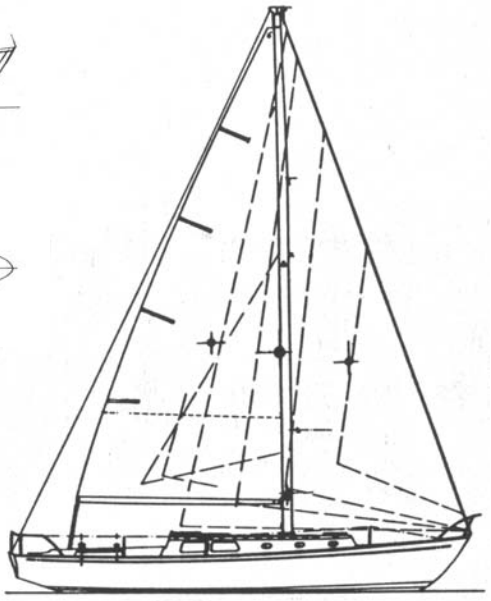
Finally: pay close attention to water entering the bilge from the inside of the mast. Without a boot that contains the drips, water will collect on the cabin sole at the base of bulkheads which, eventually, will become waterlogged and spongy. A preventive coat of two-part paint at the bottom of the bulkhead might prevent the condition.

Despite the flat bottom, the bilge is five feet deep so the water tank is located on the centerline. Fuel is aft of the engine, and the holding tank is located under the V-berth.



**Dimensions:**

| | |
|---|---|
| **LOA** | 39' 4" |
| **LWL** | 30' 4" |
| **Beam** | 11' 0" |
| **Sail areas:** | |
| **Main** | 350 sq. ft. |
| **Jib** | 242 sq. ft. |
| **Spinnaker** | 1,000 sq. ft. |
| **Displacement** | 15,000 lb. |
| **Ballast** | 6,000 lb. |



***Bill Lapworth's Cal 40***

## Conclusion

Do not let the Cal 40's racing pedigree taint your impression; she is the prototypical good old boat. Though a solid bluewater boat, she's quick. She won't compete with today's light-displacement sleds, but she'll record 200-mile days. She's also become a cult boat.

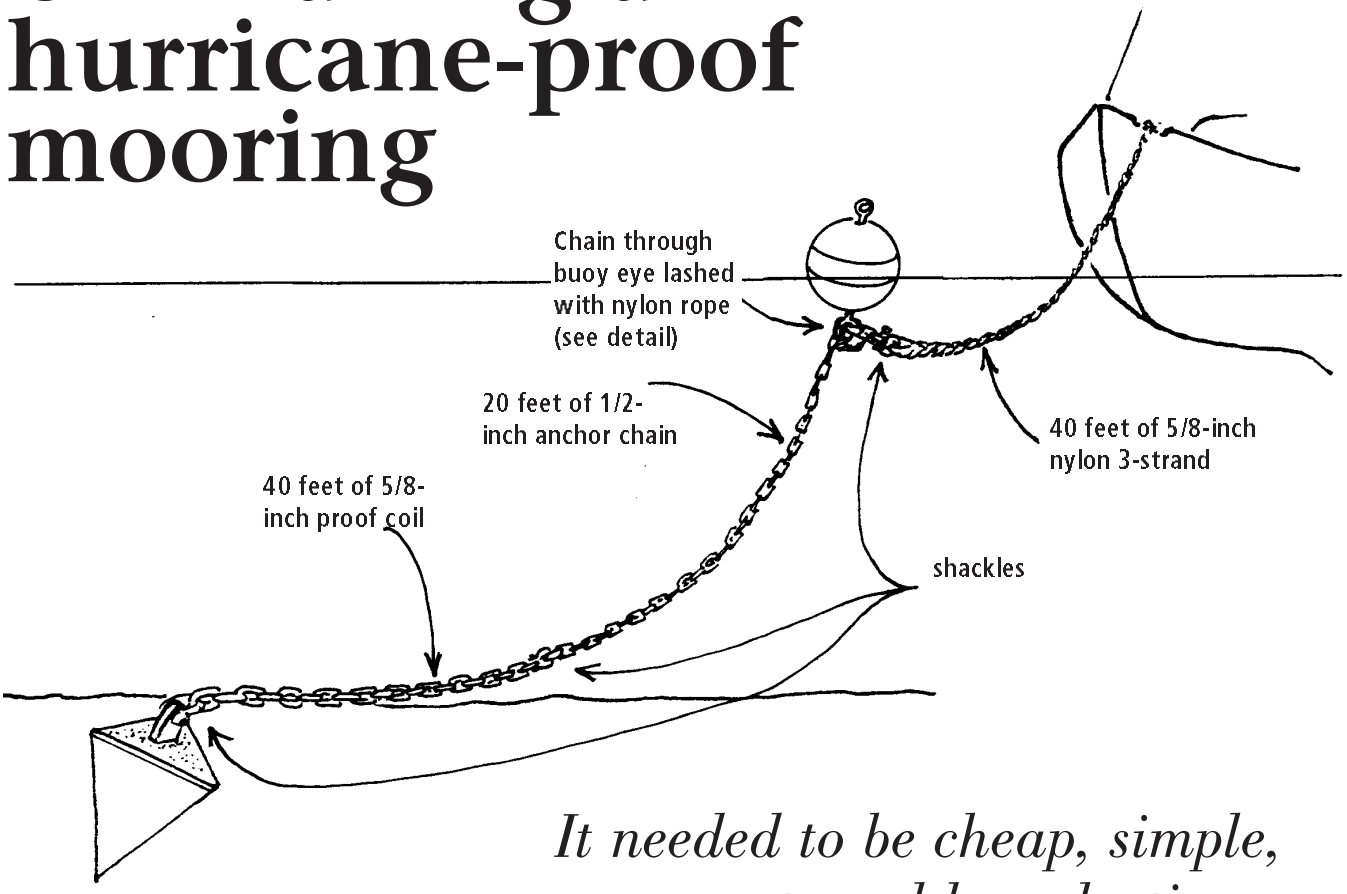
Her cockpit is spacious and comfortable, just right for evenings spent on the hook with crew, a good book, and a toddy.

Wide-open spaces belowdecks can be converted to a dining area by lowering a table hinged to the bulkhead. Her settees are long, her berths comfortable. Cruisers will appreciate storage areas in the stern, in four large drawers below the pilot berths that stretch to the hull, and in the nav station.

In human terms, she's reached middle age. In boat years, she's still a filly.

*Ed Lawrence writes about boats and off-beat subjects for several national magazines from his home base in Montana. Between boats right now, he's in the market for a trailerable 28-30 footer, but we suspect he'd consider a Cal 40.*

# On making a hurricane-proof mooring




*It needed to be cheap, simple, compact, and long-lasting*

***by Bill Sandifer***
***illustrations by Walt Pearson***

The anchorage where I kept my Pearson Ariel is a bayou, a tributary of the Jourdan River in South Mississippi. It's a dead end that is protected on all sides, providing excellent shelter. However, down here we can sometimes experience that powerful storm called a hurricane. I wanted a mooring that would be up to the job in the event of a hurricane.

The bayou is comparatively deep (19 feet), and it's not over 200 feet wide. The best location for the boat would be parallel to the long axis of the bayou, lying to a mooring off the bow and several stern anchors firmly planted in the mud or tied to trees.

I wanted a compact mooring anchor that would not stick up four or five feet from the bottom, as might a long-shanked mushroom. The anchor had to bury itself in the soft silt and mud of the bottom, leaving only the chain above the bottom. Finally, as there are alligators in the bayou, diving to check the mooring is out of the question, at least for me! Once the mooring was laid it would be down many years, maybe as many as 10 years.

The challenge was to design and build a mooring system that would meet all criteria and endure over time. I had seen an upside-down triangle pyramid-type anchor that looked good for a start but was expensive and not readily available. Plain old weights such as railroad wheels, engine blocks, and concrete were not suitable and would probably drag.

I had some used lead pigs in the shop, about 300 pounds, which gave me a start. I designed a triangle-shaped steel structure similar to a fishing sinker and about two feet on each side at the base. The structure was welded from ¼-inch mild steel plate. A vertical piece of steel flat bar, ½ inch x 2 inches, was welded inside the structure. This was welded to a three-piece web of horizontal bars made of the same material which, in turn, was welded to the inside of the structure (see illustration on Page 51). A ½-inch hole drilled through the wide side of the flat bar, 1 inch down from the top, gave me an attachment point to shackle on the chain. The entire structure was welded on all the seams. It was very strong.

## Launching problem

I realized that once I filled my upside down triangle with lead, I would never move it. How to launch it and set it in the bayou?

My old boat trailer was pressed into service to support the upside down pyramid while I filled it with lead. The lead was set in a loose mix of sloppy high-strength concrete to keep everything from moving. Once the concrete set, even if the side walls rusted out, the shape, lead, and center bar would remain. Total cost to build the mooring anchor was $50 for the welded structure from a local welding shop and $30 for the lead. The concrete was about $10. So far OK, but this was the easy part.

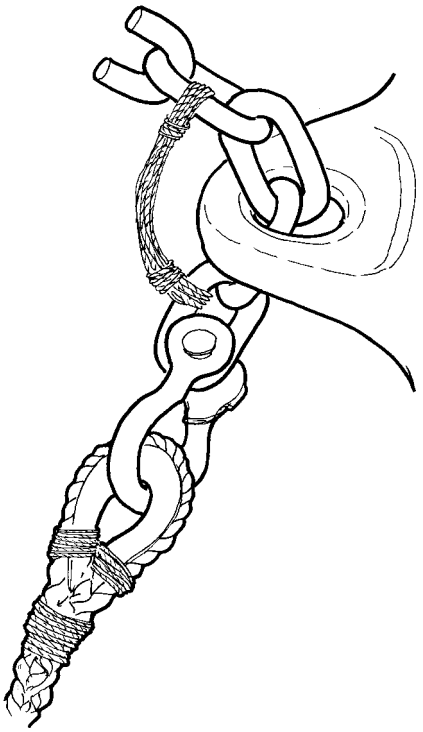
I wanted a mooring capable of a working strength of 6,900 pounds, as the entire boat weighed 5,400 pounds. This is definitely overkill, but a hurricane can tear up lots of things. I did not want my boat to be one of them.

I purchased ⅝-inch proof coil chain for the first 40 feet, reasoning that I could lift this chain to check the mooring even if I could not lift the mooring anchor. From here I shackled 20 feet of ½-inch chain and then 40 feet of ⅝-inch three-strand nylon.

The problem was to find a shackle small enough to fit the chain yet large enough to hold the rope with thimble while being strong enough to marry the two. This was not easy. The solution was three beautiful Wichard shackles that mated the two. They cost almost as much as the chain but gave me a lot of confidence that I had a 6,000-pound working system from mooring to on-deck eye splice.

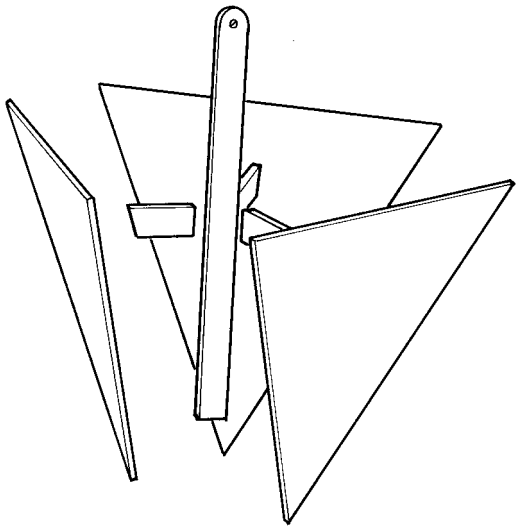
## Belt and suspenders

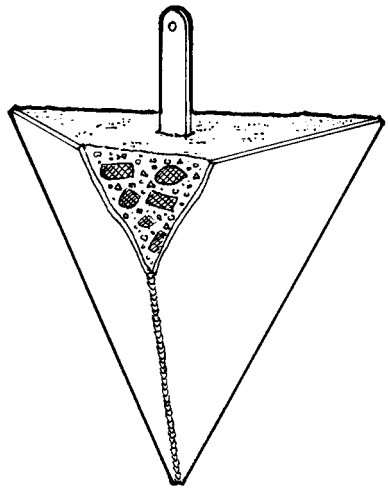
In hurricane conditions, I would bridle the eye splice on the bow back to the mast as well as to the bow cleat. I would not trust the cleat alone. The stern would be secured by two Danforth anchors set on 200 feet of ⅝-inch nylon three-strand to 20 feet of ⅝-inch chain. I would also secure additional lines from the bow to a Danforth on ⅜-inch chain leading forward, as well as lines port and starboard from bow and stern to pilings 100 feet away on shore. That should do it. Total cost about $250. Just the cost of a conventional 250-pound mushroom anchor. *(We contacted our favorite tire shop about the price and availability of scrap lead. They said they'd sell their used tire-balancing weights for five cents a pound.* ***-Ed.****)*



***Detail of buoy eye.***

Next came the setting part. The bayou has a boat launching ramp on the shoreward side. I towed the mooring over to the ramp with the car, backed the trailer down until just the eye on the mooring anchor was visible. I carried the chain and rope onto the bow of the Ariel and brought the bow of the boat over the mooring. I assembled the mooring and ran ½-inch braided Dacron rope from the bow cleat on deck through the starboard chock, through the shackle on the mooring anchor, and back through the port bow chock to the mainsail halyard winch on the mast. With my wife tailing the line, I winched the mooring anchor up from the trailer. The bow of the boat sank 18 inches, while the stern rose in the air. Some heavy anchor!





***Exploded view of the parts, above. Filled with lead and concrete, at right.***

Once the anchor was clear of the trailer, I put the boat engine in gear and motored out to the drop site. I slowly paid out the line on the winch to lower the anchor to the bottom. My wife slowly let out the chain so it did not pile up in one spot. Once the anchor was down, I pulled the line up from the standing part and backed away from the mooring in the intended direction down the centerline of the bayou. When all the scope was out, I backed down hard and set the anchor. The boat stayed in one place, and after 15 minutes I considered the mooring set.

This mooring has served for three years with no problems. Annually I clean the rope part and inspect as much of the chain as I can get a look at. So far all is well, with little sign of deterioration. We have not had a hurricane in this time, but I am ready. I try to take good care of my boat. She takes good care of me.

*Bill is a marine surveyor and boatbuilder who has been living, eating, and sleeping boats since the early '50s when he assisted at Pete Layton's Boat Shop. Since then he's worked for Charlie Morgan (Heritage), Don Arnow (Cigarette), and owned a commercial fiberglass boatbuilding company (Tugboats).*

# The joys of a dockside shop


*by Roy Kiesling*

There are a few legendary tools that may have little obvious use when you see them in the hardware store but win your heart totally when you have them at home and use them for a while. One is the Black and Decker Workmate, a full-height workbench compact enough when folded to live behind an apartment door. The other is a full-size, heavy-duty, industrial-strength machinist's vise . . . the kind with jaws four inches wide, opening preferably to a full five inches, and weighing 40 or 50 pounds.

The Workmate lets you stand upright at your task. It took humankind many millennia to become vertical bipeds, and we should not give it up easily. We do not do our best work on hands and knees.

A really massive vise can come close to making up for the lack of a second person to help hold things. The cast iron does a good job of damping serious pounding when that is necessary and can absorb the force of really energetic filing or hacksawing. Your effort goes into shaping the workpiece, not shaking the table. If the vise is of genuine high quality, it will open and close by means of a lead screw with acme square-cut threads capable of applying enough force by tightening pressure alone to straighten many bits of bent hardware or to press a new ball bearing into, for example, a water pump housing compact enough to fit within the jaws.

Mating the big vise to the Workmate so the pair could ride to the harbor in the car trunk (see photo at left) was one of those simple ideas that opens the floodgates to innumerable problems.

"Just bolt the vise to a piece of scrap two by four," was the suggestion of well-intentioned friends, but it doesn't work. The mounting footprint of the vise is much wider than a two by four, and much wider than the maximum opening of my Model 300 Workmate. Some kind of a sandwich, two boards of different widths, was indicated. Unfortunately, a heavy vise mounted atop a longish, narrow board, has the dynamic stability of a bowling ball. You don't want it anywhere in your car any more than Nelson wanted an untethered cannon on his gun deck.

# Defeating the dreaded drips

Do you have a leaky Lewmar hatch? Is it one of those intermittent drips that you can't find? Has it reached the level of Chinese water torture? Does someone on your crew open the hatch by pushing on the glazing instead of the handles? *Ah ha!* You may have a capillary leak.

That's what happens when the adhesive bond between the glazing and the rubber gasket has been broken, but the glazing stays in place. It seems to hold water when you hit it with a bucket, but over time capillary action pulls water molecules through the almost nonexistent gap. They collect on the inside until a drop forms, and the torture begins.

The obvious fix is to remove the glazing and reinstall it with 3M Weatherstrip Adhesive. In spite of its name, it's the right product for the job. It is made for installing windshields. Of course, if you're like me, you will tear the old gasket when you remove the glazing, leaving a bigger hole in the boat while you wait for a new gasket to arrive. Another small job turns into a major project. That's why we put up with so much water torture on boats.


There is another option: Re-glue the glazing in place. Permatex Flowable Silicone Windshield Glass Sealer (81730-65AR) is designed for this application. It's thinner than what you would expect of a silicone product so it is able to flow into nooks and crannies. It is also the only weatherstrip adhesive sold with a tip that lets you squirt it into small places. And it dries clear. At $1.99 for 1.5 ounces, it's a cheap fix even if you use a whole tube on one job.

**Tools:** The glazing is a tight fit even if the adhesive bond has failed. It butts against the side of the L-shaped gasket on the outside of the hatch. You could use a bread knife to insert adhesive from the top. But it's a different story from the bottom. You're approaching the joint from

*by Peter King*

# *How to mount a heavy-duty vise on a folding workbench*

### Reasonably stable

My solution to the challenge is shown in the photos. Folded for transport, the boxlike shape is reasonably stable in vertical and horizontal positions and has few projections to do damage. The slotted handholds are not merely an affectation; the thing is heavy, with a varnished surface slippery to wet hands. The possibility of dropping it on a foot is not acceptable.

The project required several square feet of ¾-inch plywood and a bit less than five feet of stainless steel piano hinge. Two small aluminum dowels locate and stabilize it for closing, and it is held shut for transport by a lathe-turned brass thumbscrew with knurling. (This was a pleasant winter-evening project that I turned out on my lathe, but any ¼-inch-diameter hex head bolt could be used.) It screws into a brass-threaded insert that is a common hardware store item. I also considered using a toggle-type latch as used on luggage and toolboxes. Anyone likely to take on this project would have ideas of his own, perhaps even a suitable latch in a scrap box.

The square piece with the strangely scalloped corners (to give relief for the hinges) gives rigidity when it is folded for transport. Design and construction went along together as a single process, requiring frequent disassembly and modification, rather like a tailor-made suit. Bringing it to completion has brought that special satisfaction that goes with doing something that most non-sailors would regard as far more trouble than it is worth. Now that it is done, I am confident it will earn its keep.

Should any readers wish to emulate this, I will mail basic sketches and assembly hints if you will provide a snail mail address. Reach me at rkiesl@cruzio.com or Roy Kiesling, 3014 Gera Drive, Santa Cruz, CA 95062.

*Roy Kiesling was introduced to sailing on San Francisco Bay in J24s and later crewed regularly on Monterey Bay on a C&C 30. He crews on passages between Santa Cruz and Seattle whenever he gets a chance. He spent a few years operating high-altitude satellites for Lockheed and has been senior product advisor for West Marine Catalog.*

# *This automotive windshield goop is cheap, effective, and durable*


the side with the glazing on top of it. You need something thin enough to slip into the gap and flexible enough to bend so the handle doesn't press up on the glazing. Yet it has to be rigid enough to not distort when you slide the tool along the gasket. The tool of choice is an artist's pallet knife. A short one is best. It's worth it to buy one if you don't have one left over from your student days on the Left Bank.

**Technique:** You're trying to smear adhesive into the gap between the glazing and the gasket. Work from the deck with the hatch open. This allows you to look from the top while you work from the bottom. Probe with the blade to learn the extent of the gap you are going to fill. Once you have an idea of what you are working with, squirt a bead on the edge of the gap and smear it in with the pallet knife. The sides of the blade won't carry much. This is an exercise in patience. Repeated strokes will push adhesive into the gap.

The filled areas will appear wet. You will feel the difference when the pallet knife needs more adhesive. It will move smoothly when it is wet and drag when it is dry. When the entire gasket area is smooth to the touch, repeat the drill from the top. With the hatch edges buttered on the sides and bottom, the leak will stop. The silicone will dry in an hour and cure in a day. It cleans up with paint thinner when wet and a razor blade when dry.

Is it a marine product? No. Then again, unless you're a Vendée Globe competitor, your hatch isn't going to see anything like the beating a car windshield takes from road salt, car washes, and highway wind speed. Car windshields don't fall out on the coast, do they? This stuff was designed for the environment. It just doesn't say "marine" on the label. It can be found in the adhesive section at Pep Boys.

*Peter raced Lightnings during his formative years and spent a portion of the 1980s as a member of the Hudson River Sloop Clearwater Foundation. These days he spends more time in a sea kayak, an Old Town sailing dinghy, and a Newport 27s MkII. Along with the boat, Peter is nurturing a 1987 Avanti coupe and a 1967 Land Rover 109.*

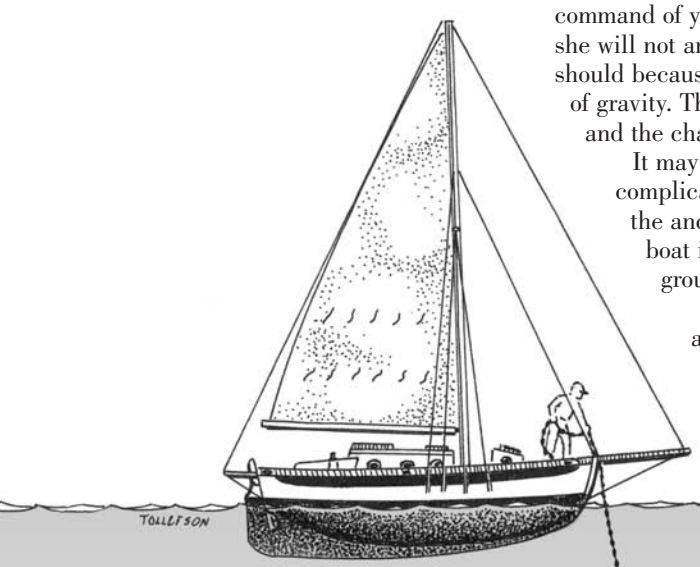
# Anchors aweigh

*by Geoffrey Toye*
*illustration by Ted Tollefson*

This is a classic textbook evolution with which I seem to have inordinate trouble, especially when sailing singlehanded. The yacht is at anchor in fairly deep water, stiff breeze. If I am lucky, I will be able to hoist working sail while at anchor.

Then what? Apparently you haul up the anchor chain until it is straight up and down. One more sacroileac heave breaks it out of the bottom; then the anchor is aweigh. At this point you and the boat are away, too, sailing off with a huge length of chain dragging under the forefoot of the speeding vessel, while you haul away like a man possessed for fear that you will sail into something, like shallow water (where you will involuntarily re-anchor) for example.

Finally, with an immense tangle of foul-smelling chain piled up on the foredeck, because you could not possibly get it down the pipe to the chain locker at the rate you were hauling, you crawl aft to assume command of your little ship only to find that she will not answer the helm quite as she should because of the change in the center of gravity. Then the boat heels to the wind, and the chain slides off the deck . . .

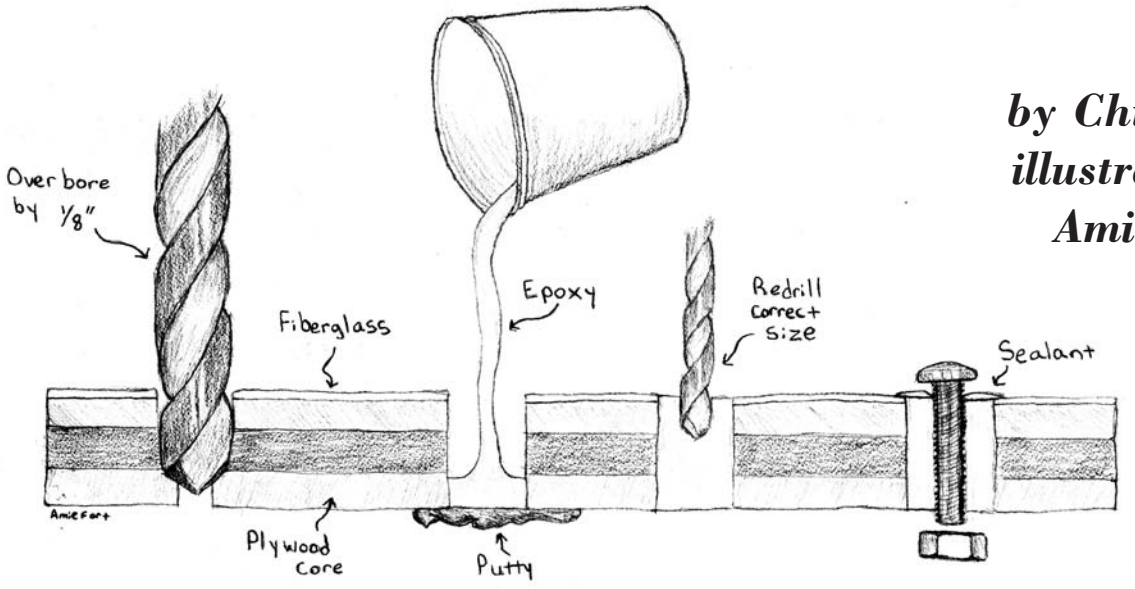



It may not be this bad, but it can be complicated on a smaller vessel. One course of action might have been to leave the anchor and cable hanging after the anchor broke out of the bottom, sail the boat into known deeper water with more sea room, heave to, and get the ground tackle aboard in a more orderly fashion.

When conditions have been too tight or uncertain for that, I have used a different method altogether. Knowing the water is deep, when I anchor I let out a small kedge anchor on a rope cable. With the boat lying to the kedge on a short scope, I hitch the bitter end of the kedge cable to the trip-line eye of my main anchor. Then I lower that, too, on its chain. The two anchors in tandem give much greater holding. Then when it comes time to hoist sail and haul up the ground tackle with the ship ready to go, I first haul up the chain, at a pace befitting my years, and feed it down into the chain locker. Next I secure the main anchor for sea while we are still lying to the little kedge. Then, when I am ready to go, I have a much lesser task in the raising of the kedge.

Of course you keep your weather-eye alert for possible dragging of the kedge, and you would be mindful of the danger to the propeller from a trailing length of kedge-warp, but that is the common sense of good seamanship. Over the years, that anchoring technique has served me and my little ship well.

*Geoffrey lives in a beach house near Cardigan, on the west coast of Wales. He's been involved with small craft for more than 40 years. He just bought his Westerly back from the folks he had sold her to. Turns out, he couldn't part with her after all.*




*by Chuck Fort*
*illustration by Amie Fort*

# Clay saves the day *(and the marriage)*

After rebedding our deck hardware (and in the process very nearly causing a Stage 2 Spousal Concern Incident) I thought I'd share a method I (we) discovered that might make the procedure easier. And prevent epoxy from dripping on the settee.

Deck hardware needs to be rebedded every few years in order to keep water from leaking into the boat or, worse, into the deck's wooden core. To be certain that water will never get into the wood, the best method is to overbore the screw holes by ⅛ inch, fill them with epoxy, and redrill to the correct size. Apply a good sealant, install the hardware, and you're set. The next time you want to rebed the hardware, you have only to remove it, clean off the old sealant, and reseal it.

One problem that crops up in this procedure is how to stop the epoxy from leaking into the cabin below while you're pouring it in the hole, which, as I have learned, is a *mistake*. Duct tape doesn't always work (blasphemy). Thickening the epoxy works but doesn't allow the epoxy to soak into the wood before it hardens.

After cleaning up some unfortunate spills, my wife, Theresa, suggested (rather strongly, I thought) that we plug the holes from the bottom with Plasticine, a modeling clay that doesn't dry out. A quick trip to the craft store, and we were in business. The clay will stick long after the epoxy has set and can be removed easily. When applying it to the hole, try not to push any inside or your epoxy won't get all the way to the bottom.

After redrilling to the correct size for your fasteners, apply a good sealant, such as 3M 4200, and lightly tighten. After the sealant has cured, tighten fully for a good seal. For peace of mind and domestic tranquillity, rebed your deck hardware using this procedure.

*An escaped corporate executive, Chuck Fort "sold out" to go cruising with his family. He holds a USCG masters license.*

# The $12.93 spare tiller

*by Peter King*

Crack! Not the sound you want to hear as you reach across the bay in a freshening breeze. Especially when the tiller feels as if it isn't connected to the boat at the same time.

Sailboats are full of spares: halyards, sails, lines. But what do you do when your tiller breaks — after the spinning, ducking, and yelling stops, that is? Do you install a boathook with a pair of Vise-Grips and a roll of duct tape? That might work in calm water, but what would you do in foul weather?

I was faced with that situation when the tiller on my Newport 27 split at the boltholes. The long piece came off in my hands. The short part fell on the cockpit sole. I was fortunate that my boat has a balanced spade rudder. Tiller forces are light. I stuffed the top half back into the rudderpost and steered home . . . carefully. Later inspection showed that water had penetrated through the bolt holes and caused dry rot in the butt. It looked good on the outside but it was powder on the inside. *(For more on this subject, see* Good Old Boat, *November 2001).*

Putting the issue of a permanent replacement aside for the moment, what would I rather have installed in its place if the parts that were left had not been big enough to use on the way home? I found the answer at Home Depot.

I discovered that 1½-inch PVC pipe has the same outside diameter as the original tiller. A length of 1¼-inch closet rod for stiffening and compression at the rudderpost, a can of Good Stuff foam to fill the gaps, a PVC end cap for looks, and I had the parts. A couple of brush loads of polyurethane on the exposed wood on the butt finished the job.

My emergency stick is straight. It is tempting to add a ⅛ angle coupler to make the shape more like a regular tiller. But that adds a weak spot in the shaft. This project is about reliability. A straight stick is cheap, simple, and can be stored anywhere.

This is not meant to be a permanent replacement any more than the inflatable spare tire in your minivan is meant to go more than 50 miles. It's a piece of Schedule 40 water pipe that is better than a boathook and a roll of duct tape. It will back up the repaired original tiller until I build a new one and the new stick after that. It's nice to have a "spare tire in the trunk" alongside the bottom brush and boathook.

Total cost? $1.98 for 5 feet of PVC pipe, 89 cents for the end cap, $1.25/foot for the closet rod and $3.97 for the can of foam. That comes to $12.93 with tax. A small price to pay for peace of mind.

Is this the only combination that will work? No. PVC pipe fit my rudderpost. Closet rod fit the inside of the pipe. It worked for my boat and sailing conditions. Something else may work for yours. The point is that you can put together a low-cost spare tiller from common materials. It will suit you better than anything you could cobble together on the boat when the tiller comes off in your hand.

Have you looked at what's connected to your rudderpost lately?

*As we've printed more articles by Peter in recent months, we're beginning to understand that he spends an inordinate amount of time prowling the aisles of auto parts stores, Home Depot, and Pep Boys. But he's doing it as research for the rest of us, so we're appreciative. His formal bio appears on Page 53.*

*Cutting board fits on the companionway steps, above, and on the galley table fiddles, at left. Construction detail below.*

# Companionway cutting board

*by Jerry Powlas*

There is never enough counter space in any galley, or kitchen for that matter, but this is a particular problem in smaller boats like our C&C 30. The galley is aft on both sides of the companionway, so the companionway ladder splits the galley in half. I've always been tempted to use the top step of the ladder as counter space in this situation, but I didn't like having the food-preparation surface stepped on by the crew.

I put a cutting board on top of the step, locking it in place with cleats that keyed into the ladder sides forward and the back of the step aft. I made this board out of scrap birch, but practically any fairly hard wood, or even an actual small cutting board, will work. Just add some pieces to the edges so the board locks onto the top step of the ladder.

When the cutting board is in use during meal preparation, the crew must be careful not to step on it, but this has not been a problem. When meal preparation is over, we move the board off the step and push it aft on top of the counter behind the ladder. No matter what the sea condition, it seems to say there. Sometimes we use the board as a tray to carry food to the galley table or to bring munchies up to the cockpit. With a little planning, the aft cleat of the cutting board can extend down about as much as the fiddles of the galley table extend up, allowing the board to sit flat on the side of the table.

I made my cutting board out of lumber that was almost ¾ inch thick when finished. This thickness was unnecessary, and over the seven or eight years that we have used the cutting board, it has warped a little. Thinner stock, or perhaps good plywood under a thin cutting surface would have been better.

If I get time this winter, I'll "un-warp" the board by cutting slots in the underside and filling them with filled epoxy and pressing the board flat. Sometimes two sets of slots at 45 to 90 degrees are needed, but in this case I doubt that will be necessary.

*Jerry is* Good Old Boat *technical editor.*

*Topsides continued from 40*

first coat looks. But we expect the second coat to be even better.

To prepare for the final coat, let the first coat cure overnight, then wet sand it with 320-grit wet-or-dry sandpaper. The safe way to do this is by hand, but I typically speed this process along by loading the wet-or-dry paper into my palm sander and spritzing the hull lightly with a trigger sprayer. This method no doubt poses some risk of electrocution, so I am not necessarily recomending it.

There is no point in sanding more than is necessary. The second coat bonds chemically with the first if applied within 48 hours, so you don't need tooth. You are sanding mainly to correct surface flaws in the first coat. You are using such a fine grit it can be very hard to see where your sandpaper has been. Also the high gloss tends to make your eyes lose focus. The solution is to mist the paint with contrasting lacquer — black on white, white on black or blue. This allows you to easily see where you have sanded, and it gives your eyes a feature to focus on.

Sanding polyurethane produces a very tenacious scum. When you are through sanding, flush the hull with water and scrub it with a sponge. When it is completely dry, and just before you are ready to apply the top coat, wipe the hull one final time with 2333N.

## Laying on the final coat

You have the advantage of experience when you apply the second coat. With the first coat results and the now-dry test panels from the previous day as a guide, thin your paint and test it carefully on fresh panels. When it is exactly right, lay it onto the hull in as close to one continuous flow as you can manage. The results will be spectacular.

Look closely enough and you will almost certainly find flaws, but no one else will ever notice them. Soon enough you won't either. If you are really disappointed with the results of the second coat, there is nothing to prevent one more attempt at perfection. The cost is nominal, and you begin the third coat with twice the experience level you had for the second. The chances of significant improvement diminish after three coats, so stop there.

As for my own job, I yielded to weather realities and stopped after the second coat. During my next haulout — in the dry season — I will wet-sand the surface and lay on that perfect topcoat. Meanwhile my official position is that a less-than-perfect job might actually be better because I am less uptight about getting a scratch or a ding.

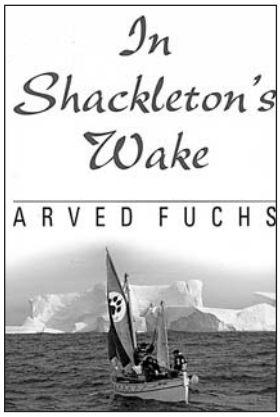
*Don Casey co-authored* Sensible Cruising: The Thoreau Approach *and became the authority on boat fix-it projects with* This Old Boat. *He is the author of a series of books in the International Marine Sailboat Library and of* Dragged Aboard — A Cruising Guide for the Reluctant Mate. *He and his wife, Olga, cruise aboard their 29-year-old Allied Seawind. They've done all the work themselves with no adult supervision.*

# Book reviews

## Recreation of a classic journey

***In Shackleton's Wake***, by Arved Fuchs (Sheridan House, Inc., 2001; 187 pages; $24.95)
**Review by Guy Wray, Plymouth, Minn.**

"Is it cynical to place yourself voluntarily in the position of desperate men whose only thought was of reaching home safely?" An interesting question. Author Arved Fuchs asks this question several different ways during the telling of his reenactment of Sir Ernest Shackleton's journey from Elephant Island to South Georgia.




Along with three fellow adventurers, the author sets out to recreate Shackleton's 1916 journey for survival in an open lifeboat, a journey of 700 miles at 60 degrees south latitude. This is followed by a 30-mile crossing of South Georgia over mountains and glaciers never before crossed by man.

The book that results, *In Shackleton's Wake*, has much to recommend it. I learned more about Shackleton than I had ever known, and I went to school in Australia, a country where Shackleton was one of the heroes. When I finished reading, my first thoughts were: "What Shackleton did was extraordinary; what Fuchs did was interesting."

That is not to take anything away from what Arved Fuchs and his companions did. In fact, the author may have underplayed the intensity of his experience. His goal was not to outdo Shackleton; it was to recreate the journey as closely as possible. By comparing his position and situation with Shackleton's, he ties the two journeys together. At one point he stands at the top of the glacier where Shackleton deliberately slid down 2,000 feet into the unknown, and he doubts if he would have had the courage to make the same decision.

In making his comparison, Arved Fuchs creates a very readable tale. He goes so far as to question a number of the decisions made by Shackleton, and he backs those challenges with the authority of experience in the Antarctic.

This book's a keeper. It is full of interesting facts and information, told in a very readable style. It's worth the read if you just want to find out more about Sir Ernest Shackleton. For those who are interested in contemporary adventures, the journey of Fuchs and his companions will hold your attention.

For those with a technical interest in things sailing, there is an appendix covering details of the rig of the *James Caird II*, including formulas for working out the minimum diameters of masts and shrouds.

And yes, Arved Fuchs answers his own question several different ways.

## From prominence to lunacy

***The Strange Last Voyage of Donald Crowhurst***, by Nicholas Tomalin and Ron Hall (International Marine/McGraw-Hill, 1995; 273 pages; $19.95.)
**Review by Robert Hays, Wichita, Kan.**

This is a chronological story of the life of Donald Crowhurst. The authors give insights into the psychological growth followed by the decay of the man into lunacy. Donald grew up in a time of heroes and felt he was made of heroic fabric. He was a boy and then a man who needed to be in the center of activity, an instigator of ideas and adventures, flitting from idea to idea. His follow-up ability was lacking, however; the usual result being eventual failure, be it in the military, commercial enterprises, or his round-the-world race.

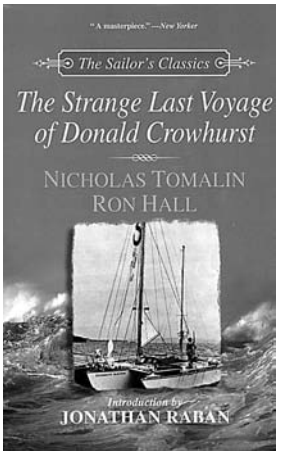
When Sir Francis Chichester returned from his round-the-world voyage, Donald was taken by the idea of his own triumphant trip. He pooh-poohed Chichester's labors thinking he could do much better with the same boat, *Gipsy Moth*. Many different ploys were attempted to gain the use of the boat, but Chichester rebuffed all.

The *Times* newspaper came up with the idea of a singlehanded race around the world, and Donald decided to enter. He tried many tactics to gain sponsorship and acceptance into the race. Finally, he talked a business partner into backing him and found a shipyard that could build a trimaran to his specifications. At that time, trimarans were a new untried type, and much doubt was cast upon his selection. He came up with a novel "computer-assisted" stability device that was far ahead of its time.

The building of the boat was a last-minute affair with several untried modifications added during construction. When it was finally launched, the boat had poor windward performance. By the time he sailed to his starting point, he had only 16 days left to complete preparations. It was a frantic time, but Donald seemed to be only half-heartedly preparing for the journey of a lifetime. Many important items were left to

chance, with the result that most were left behind.

Doubts were building in his head like cumulus clouds. Several times he tried to get his wife or business partner to tell him to forgo or postpone the race. He desperately wanted someone to take responsibility for his lack of preparedness.




Shortly after the start of the race, his need for acceptance was such that he started sending false daily mileages. Eventually, his false position was many hundreds of miles ahead of his actual position. During that time, he started to reason with himself about the possibility of staying out of sight in the South Atlantic Ocean until it was time to start back for England.

He stayed out of radio contact for most of the time, blaming a leaking hatch that was modified for generator access. During this time in the South Atlantic, Donald started losing his grasp on reality as we see it, and started seeing his own reality, derived from reading Einstein's *Relativity* and turning things into a mathematical realm.

Finally, on the homeward leg, the seriousness of his situation apparently overwhelmed him, and he carefully laid out his logbooks and then stepped overboard. The boat was found adrift several days later. It was upon examination of the logs that the twisted journey through the seas and through his mind was uncovered.

This book is one that should be required reading for psychology classes. It shows the downward spiral into lunacy like a downwind reach with brief puffs of logic.

# The funny side of living aboard

***If the Shoe Fits (The Adventures of a Reluctant Boatfrau)***, by Rae Ellen Lee (Sheridan House, 2001; 224 pages; $23.95)

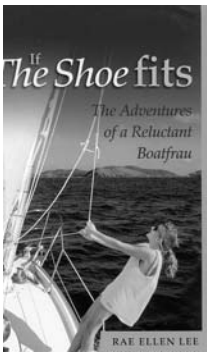
**Review by Frederick Street, Zimmerman, Minn.**

"I enjoy adventure and new experiences on a sailboat in the Caribbean."

This mantra, or variations on it, are what keep the author going in this frank but funny recounting of a neophyte sailor's exploration of the liveaboard dream. First-time author Rae Ellen Lee starts her tale in the mountains of rural Montana, where she and her new husband are living in an old bordello. Neither of them have any experience with sailing but get hooked on the idea of living on a sailboat while on a winter vacation to St. John in the U.S. Virgin Islands.

Soon afterward, they try their hand at chartering a boat in the San Juan islands of Puget Sound, and within months they've sold their home and most of their possessions, moved to the Pacific Northwest, and purchased an Alberg 30 in need of some TLC. The bulk of the book documents various aspects of the author's coming to terms with a completely new way of living.

This is not a Cinderella story of wishes fulfilled; the way to this new life is filled with unexpected snags at every turn. Rae Ellen has a hard time with the constant motion of the boat, and she hasn't got a clue as to what all the ropes are for at the start. But the book is filled with her wry humor, such as her version of GPS, which she terms her "Grunt and Point System."




With chapter titles such as, "I Only Cuss When I'm Sailing" and "To Be Rooted Is The Property of Vegetables," the humor is somewhat reminiscent of Herb Payson's dry, understated style. But it's interspersed with honest discussions on the insecurities the author feels about her lifestyle change. Halfway through the book, I felt things were bogging down a bit with Rae Ellen's philosophical musings; but then she came right back with a wonderful recounting of a Thanksgiving spent aboard. This event begins with the author trying to locate a turkey "less than seven inches high" to fit in the boat's diminutive oven.

The biggest disappointment in the book may turn out to be a positive. Judging from the cover photograph (the smiling author standing on a heeling deck, gazing up at the sails of a vessel obviously in tropical waters), I expected the happy couple to make it to the Caribbean on the boat of their dreams. But the close of the book finds Rae Ellen still on Puget Sound, still wondering if her choice of lifestyle was the right one for her. One can only hope this is just the first leg of the voyage. As sailors are fond of saying, the voyage itself is at least as important as finally reaching your destination.

# Book reviews

## Through the Northwest Passage in a 27-footer

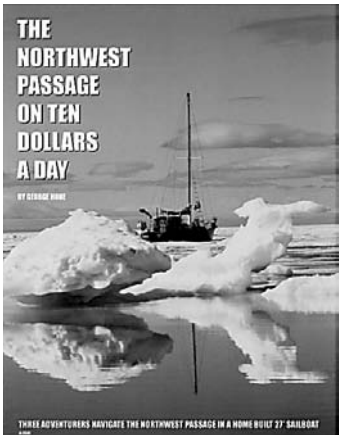
***The Northwest Passage on Ten Dollars a Day***, by George Hone (Nighthawk Marine Ltd.; April 2001; 138 pages; $24.95 – $34.95 in Canada).
**Review by John Allison, St. Clair Shores, Mich.**

"Life is either a daring adventure or nothing at all." This is a famous Helen Keller quote and also the "why" behind George Hone's story of how he and two other men in a home-built boat, with no real sponsorship or support, became the fourth vessel to transit the Northwest Passage in a single season. The Northwest Passage is defined here as "a water route through the Arctic, north of the Canadian mainland, from the Atlantic Ocean on the east to the Pacific Ocean on the west."

Beginning with the dreams of two dockmates, the author carries the reader through this entire adventure from concept to design and fabrication of *Dove III* (a steel-hulled, 27-foot sloop with a 4-foot draft) to launch in Nanaimo, British Columbia, through many adventures to a successful conclusion in Pagnirtung, on Baffin Island.

Although the author's description of ice conditions, villages visited, the landscape, and the seascape are revealing, they are not as vivid as I would have hoped for. Even though George Hone is obviously in awe of the harshness and variety of landscape, as well as the ice he encountered, I found it difficult, at best, to visualize what the crew must have seen and experienced. The artistic renderings are numerous and well done, but they are of such subjects as villages visited, the crew, and life on board, not the surroundings.

*The Northwest Passage on Ten Dollars a Day* would benefit from photographs or even more sketches of the ice flows, the tall cliffs of some areas and the barren bleakness of others. Hone's book would also benefit from better editing. There are typographical errors and incomplete sentences.



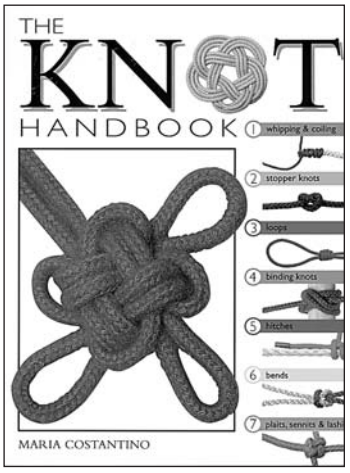

Though interesting and informative, I found the book to be written in the style of a daily diary or ship's log. There is such a story to tell here of excitement, of terror, and of tedium — the author truly hints at it all, but that is where it ends. The book reads like a cruising guide: it is not the type of book that you would stoke up the coals in the fireplace, sit back in your favorite easy chair, and open the cover to enjoy. If they were planning such an adventure, this might be a good book for the reference library. Otherwise, I would not recommend it to my fellow sailors.

## A handbook to delight knot people

***The Knot Handbook***, by Maria Costantino (Sterling Publishing Co., 2000; 256 pages; $14.95.)
**Review by Guy Wray, Plymouth, Minn.**

There are two types of knot people: those who use knots and those who hate to. I've been a user for 44 years because I've been sailing for 44 years. I've become very comfortable with the 25 or so knots, whippings, and splices I use on a regular basis. A book on knots has to be something special to get my attention.

Before reading *The Knot Handbook*, I decided it would have to meet certain criteria: 1. A clear understanding of where I can use the knot; 2. Easy-to-follow instructions; and 3. Ease of finding the knot instructions again (there are 118 knots in the book). Success in meeting these criteria would equal a useful book. *You* might not agree with my criteria, but as the reviewer *I* get to set the standards.




I was impressed with the book's layout. Each knot is classified into one of the following categories: whipping and coiling, stopper knots, loops, binding knots, hitches, bends, and finally plaits, sennits, and lashings.

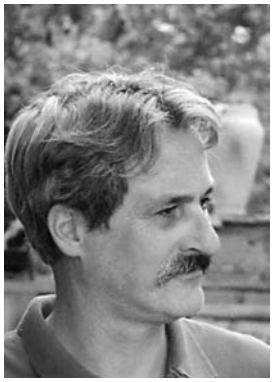
Did I get a clear understanding of where I could use a knot? The answer is yes and no. Author Maria Costantino usually gives a clear description of at least one use. The full-color photo directions of how to tie the knot leave very little doubt as to the knot's use. I suggest you read the introduction to each category. A clear indication of each knot's use will be found in this section.

Are the instructions easy to follow? Yes. With just a few exceptions, directions for each knot are contained within the pages. This means you don't need three hands to learn to tie a knot. Could I find the knot again easily? Yes — if I think in broad categories.

Was the book useful? Yes. Did I find a knot to add to my bag? Yes, actually a couple. Is it a book I would have on my boat? Yes. Actually I would have it just for the introduction, which contains very useful information on ropes. Should you have this book on your boat? That would depend on your current knot skills. If you use fewer than, say, 10 different knots, this book provides simple and easy instructions so you can easily increase your repertoire.

I suggest you practice your chosen knots and learn to tie them in the dark. Murphy's Law says that's when you'll need them most.

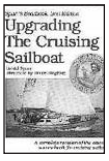
# Dan Spurr's collection



Dan Spurr recently left his post as editor of *Practical Sailor* magazine after 11 years. He earned degrees from Johns Hopkins and Eastern Michigan universities. Growing up in Michigan, his first sailing experiences were on the Great Lakes. He was human resources administrator for a large hospital in Ann Arbor, Michigan, for 11 years before moving to Newport, Rhode Island.

In Newport, he was senior editor of *Cruising World* magazine while living aboard his boat. *Cruising World* assignments took Dan to the South Pacific, Mediterranean, Caribbean, and both U.S. coasts. In 1987 he and his wife, Andra, cruised their Pearson Vanguard from Newport to the Canadian border, then south to Key West and the Bahamas. Over the years he has owned a Snipe, an Alacrity, a Silhouette, a Catalina 22, a Pearson Triton, a Pearson Vanguard, a C&C 33, and a Tartan 44.

As Dan and his family settle into their new home in Montana, we expect the call of the sea to bring forth more books and articles from the keyboard of this prolific writer.

| | *Price* | *Quantity* | *Extended price* |
|---|---|---|---|
|  **NEW! Offshore Sailing: 200 Essential Tips, by Bill Seifert with Dan Spurr** – Hard-won solutions to a host of design, construction, and equipment issues and seamanship dilemmas. It discusses safe and comfortable passagemaking, using clear instructions and detailed illustrations. – $27.95. | $27.95 | ____ | _____ |
|  **Spurr's Boatbook: Upgrading the Cruising Sailboat** – An extraordinary approach to refurbishing and structurally upgrading an older fiberglass sailboat for off-shore cruising. Excellent illustrations by Bruce Bingham. – $24.95. | $24.95 | ____ | _____ |
|  **Heart of Glass** – The story of the fiberglass boat, from the first ugly ducklings of the 1940s, is a rich one, peopled with a colorful array of pioneers, visionaries, and entrepreneurs. Illustrated with 220 rare photographs, this is a must-read. – $27.95. | $27.95 | ____ | _____ |
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*Subtotal* _____

*(carry over to Page 65)*

Also ask BookMark (Mark@goodoldboat.com/763-420-8923) about Dan's book, *Steered by the Falling Stars,* which is out of print but available at used-market prices.

# Good Old Bookshelf

# www.goodoldboat.com/bookshelf.html

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| ***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*** – Mainentance and repair. | $49.95 | ___ | _____ |
| ***And others*** | | | |
| **Richard Henderson** | | | |
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# Good old classifieds

## For sale

**Sabre 28**
Good old boat needs home. 1977 Sabre 28 with CQR, wheel steering, Harkin roller furling, VHF, cradle. Recent compass, depth, knot meter, sail cover, bottom paint, boot stripe. Well-cared-for freshwater boat. Must sell before slip renewal. At Lake Monroe in southern Indiana. $17,900 OBO.

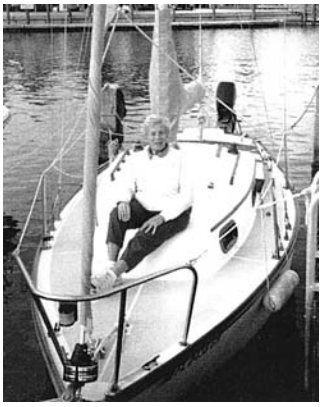
**Jim Lichtefeld**
**502-635-7799 day**
**502-933-2987 eve**
**KAirCo@aol.com**

**Pearson Ariel**
1963 hull #87. Unique cutter-rigged custom cruiser. Full keel with outboard rudder. Very clean and fresh. Well maintained. Custom cabin trunk. LOA: 28'. LWL: 26'. Draft: 4'5". Ballast: 3,000 lbs. lead. Displ: 8,000 lbs. Headroom: 6'2". Atomic 4 rebuilt in 1998. New CDI prop and shaft. Batteries new 2000, 30-amp charger. Shorepower: 110V/30 amp. Main, roller furling head sail, storm sail, stay sail, spinnaker. Two self-tailing two-speed winches. 16-lb. Danforth, 300 feet rode. VHF, Loran, speed, compasses, full international nav. lighting. More. $5,500.

**Timothy Bevier**
**847-682-2318 or**
**847-838-2070**

**Cape Dory 25D**
1983 fiberglass cruiser. Yanmar 8-hp diesel. 6-ft plus headroom. Sleeps 4. Exc. cond. Many upgrades in 2001 including dark green Awlgrip, cockpit and cabin cushions, matching curtains, shorepower wiring and dodger. Enclosed head forward. Ratheon autopilot, Ritchie 4-in compass, depth. Beautiful edition of an Alberg classic. In Martha's Vineyard, Mass. Asking $21,600.

**Dave Richardson**
**508-693-9723**



**Cape Dory Pocket Cruiser**
Classic seaworthy 22-footer. New SS standing rigging, new furler reefing. 3 sails. Bronze and teak. 9.9-Evenrude LS OB pushbutton start. Full keel, draws 3 feet. SS pulpit, Bimini, new sail cover, Porta Potti, VHF radio, new interior cushion covers, two anchors, cockpit cushions, 1-yr-old halyards and sheets. In St. Petersburg, Fla. $12,600.

**Harry Pohlig**
**727-867-4610**
**pohligdigs@aol.com**

**C&C 31**
1969. Shoal draft: 3-ft CB up, 7-ft CB down. 4,000 lead keel. Custom mahogany interior, 25-hp Universal diesel. Fully enclosed dodger. In Portland, Ore. $19,000.

**Bruce Covault**
**503-659-2354**

**Bristol 29.9**
1977. Yanmar diesel, new 2-burner Origo 4000 stove. New 2 ST Lewmar #16 and #40 winches. New closed-cell cockpit cushions. New interior cushions. LOA: 29'11", LWL: 24'0", draft: 4'4", beam 10'2". Water: 63 gal, PHRF: 186. Fuel: 19 gallons, new Datamarine depth, speed and wind indicator instruments. New Horizon VHF radio. Danforth and Bruce anchors. Very lightly used. Located in Oyster Bay, Long

Island. Well cared for by loving owner. Asking $29,000.

**Rhonda Ehrler**
**516-628-8727**
**Michgold42@aol.com**

**Beneteau F456**
The Legend. 1985 French-built ocean passagemaker. Good/very good condition. Excellent sailer, goes to weather and points like a witch. Comfortable liveaboard cruising boat. LOA 46, hull length 45, LWL 39, beam 14, draft 6. Large fin keel. Perkins 4-108 diesel with twin alternators. 3-blade Maxi-Prop. Sleeps 6 in 3 cabins. 3 heads. Spacious saloon. 110v. Sea Frost reefer/freezer. Force 10 BBQ, 3-burner stove with oven, pressure water, Furuno radar, VHF, new in 2000 Autohelm 6000 autopilot, B&G depth and log, Heart 1800 inverter/charger, 800 amps in 2 house banks plus starter batt. 2 BP 105-watt solar panels, oversize rigging, full-battened main, 130% roller-furling genoa, storm jib, 44# CQR, 47# Danforth, electric windlass, 8-man Avon life raft, hard dinghy with sailing rig, 6-hp Evinrude OB. Other equipment and spares. $ 115,000 U.S. Lying Rodney Bay, St. Lucia, in the Caribbean. If you buy the boat, I will reimburse your air fare.

**Brian and Alexis**
**758-458-0541 evenings**
**legend_tales@hotmail.com**

**Kittywake 24**
Classic lines. Designed by Howard I. Chapelle in the 1960s (although also attributed to Carl Alberg). LOA: 23'7". Beam: 7'5". Draft: 2'10". Yes, that's less than 3 feet! Displ: 3,700 lbs. Color: Original olive-green gelcoat. White deck with green non-skid. Johnson 9.9-hp LS OB. Aluminum spars, two winches in cockpit, mast stepped on deck, nearly new full-batten main by Meade Breeze, Rock Hall. 120-percent jib on furler. Asymmetrical spinnaker by Moorehouse Sails. As new. Burgundy sailcover, cushions. In the water and ready to go. $3,500. Northeast Md.

**Dane Anderson**
**Dane.anderson@att.net**
**610-328-6448**

**Chrysler 22**
1977. A nice good old boat. Safe, easy-to-sail swing-keel boat. Pop-top with curtains. M[illegible] percent genoa, [illegible] OB. Compass, d[illegible]ts, marine radio. T[illegible] spare. Need to reduc[illegible]ood old boat fleet from 3 to 2. Located in the U.P. of Michigan; will deliver to northern Wis., Mich., or Minn. $4,000 OBO.

SOLD

**William Fyvie**
**906-883-3753**
**fuzzy5e@yahoo.com**

**Newporter 40**
Classic pilothouse cutter-rigged ketch. Hull #91. Documented. Exc. cond. Good liveaboard or cruising boat. Built by Stowman Ship in Dorchester, N.J. LOA: 48'. LOD: 40'. Beam: 12'8". Full keel, 14 tons. Sleeps 6. Full-sized double bed in main cabin. All sails, Dyer sailing dinghy on davits. 4-108 Perkins diesel with 135-gal tank. 19x16 three-bladed prop. 135-gal water. VHF, depth, Loran, 2 handheld GPS units. USCG-compliant holding tank. Adler Barber refrig/freez; Force 10 stove/oven; dive compressor and dive scooter. Other equipment also. New in 2000: Balmar 90-amp alternator; batteries; mahogany caprail and taffrail; painted topsides; refinished 'sprit, booms, masts; twin-groove ProFurl roller furling on headstay; twin hydraulic

helm stations; wiring; extensive renovation. New 2001: 3 offshore life jackets; 2 Stearns survival suits; flare kit; EPIRB; charts. Health problems force sale. Price reduced. $49,900 OBO. Lying Newport, Ore.

**Peter and Roberta Fynn**
**503-434-2759**
**peterfynn@aol.com**

**Compac 19**
1981. Hull #162. Shoal draft daysailer/weekender. Sleeps four in cabin. Main with cover and 110 jib. 1991 Evenrude 4-hp OB. 1985 trailer. Many extras. Located on Long Island, NY. $5,000.

**Jim Bellotti**
**516-379-6476**
**jimb324@aol.com**

**Catalina 27**
1974. #1914. Std. rig, traditional interior, 1998 Yamaha 9.9-hp 4-stroke OB, LS, high-thrust, electric start with cockpit controls. New standing rigging, upgraded chainplates, upgraded spreaders, new main, RF 155 genoa, autohelm, VHF, depth, Porta Potti, safety equipment, and Bimini. Fully equipped with many other extras. Includes Walker Bay 8 dinghy with sailing kit. Very nice, well maintained, solid boat. $8,995. More information at http://users.starpower.net/tlitty. Located Shady Side, Md.

**Ted Litty**
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**Flex-o-fold propeller**
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**Ben Doucette**
**902-823-1617**

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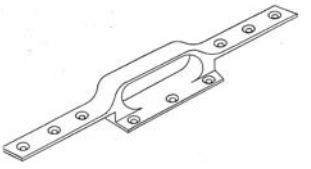

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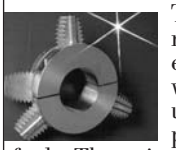

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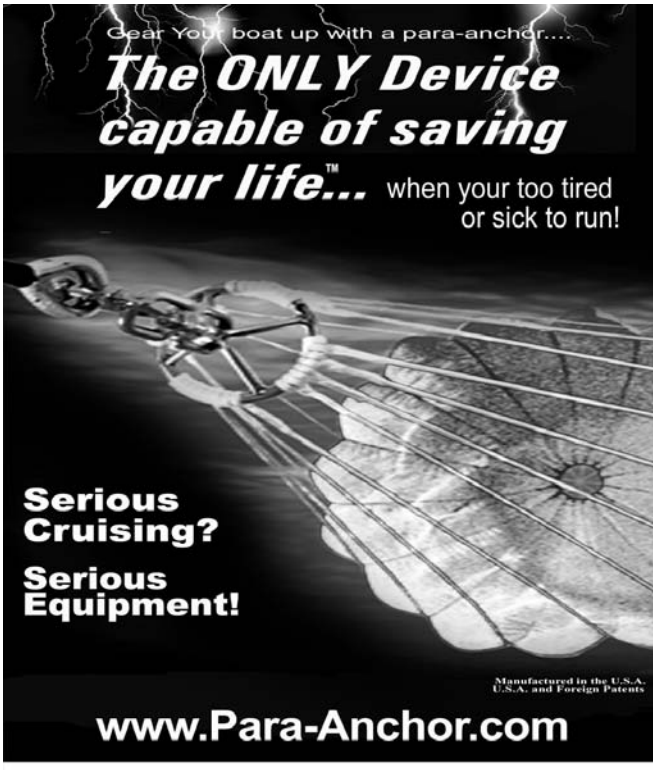


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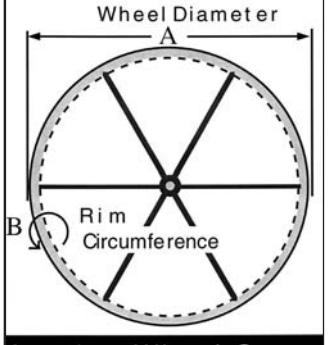


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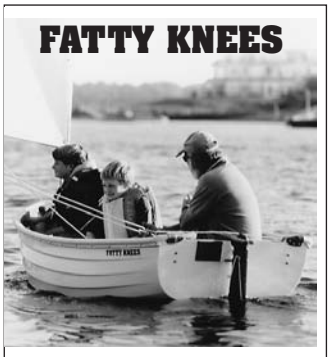
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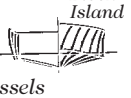
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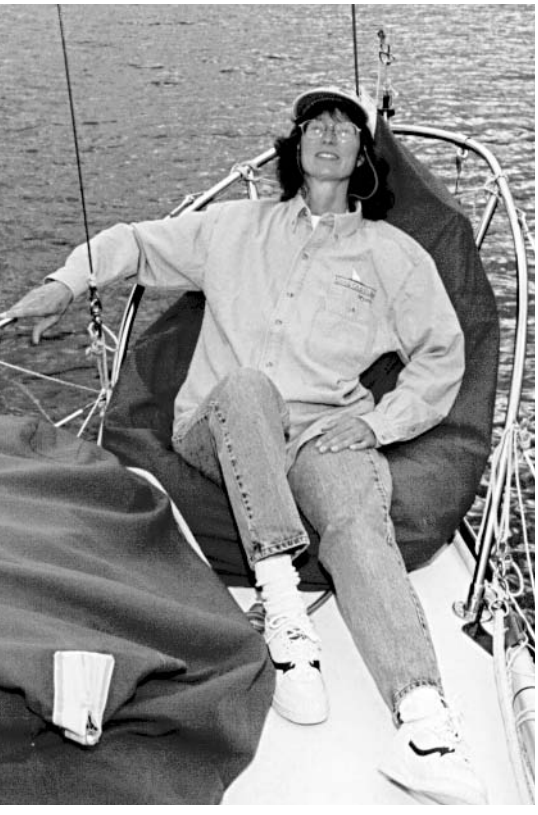
- **Tilley-brand** *(as available)* ___ *head size:* ___ *(inches)* ___ @ $53.00 US = _____

  *Natural color, 2 3/4-inch brim. Sizes 7 - 7 5/8. (As available.)*
  *Measure around your head just above the eyebrows for inches or order by hat size (one size larger than your normal size is suggested by Tilley).*

**Shipping/handling** $4.50
*$4.50 for shipping and handling*

**Total** _____

❑ **Check/money order enclosed** **Bill my:** ❑ **Visa** ❑ **MasterCard**
**Card #:** __ __ __ __ - __ __ __ __ - __ __ __ __ - __ __ __ __ **Exp:** __ __ / __ __



Name _____

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GOOD OLD BOAT
7340 Niagara Lane North, Maple Grove, MN 55311-2655
763-420-8923, 763-420-8921 (fax)


***That smile on the editor could be bliss or simply madness, we're not sure. We're simplifying part of our business by limiting the clothing we sell. We'll sell the Tilley hats we've got in stock, make the short-sleeved denim shirt available until it's gone, and the same goes for the museum T-shirt. So if we've got your size, we'll sell it. But we won't be restocking these items. We prefer to think of that smile as one of bliss. The ball cap and long-sleeved denim shirt will continue to be available in all sizes. We're keeping one T-shirt, too.***

# good old hats and shirts

*Milo Feinberg lives and breathes sailing. How does he come by this? We don't know. His parents are not sailors, but Milo's got sailing fever anyway. This is a New York City boy who spends summers in Maine. If his folks are lucky, he'll teach them to sail. There's no doubt about Milo's luck though: this summer he got a chance to meet and sail with Olin Stephens (see Page 3). We're honored that he subscribes to our magazine and wears our ball cap and denim shirt (the shirt's in the photo on Page 3; it's hidden under the life jacket).*


Back

Front

*It wasn't intentional, but we held a "T-shirt contest" of sorts when we offered two variations on the* Good Old Boat *T-shirt. This one, which we call the "work for boat parts T-shirt," has been the better seller, so we're going to continue to offer it while discontinuing the "museum shirt." Dave Chase, at right, drew the design initially for our Web site. A couple of subscribers begged us to turn it into a T-shirt, and you know the rest of the story. Susan Chase is wearing the shirt with the* Good Old Boat *logo in front (of course). Ever the creative type, there's no telling what Dave will do next. He decided to model his backward. Go figure.*

SpinSheet photo

# Second Good Old
# Double the

***Who says sailboats are slow? Cal 25 king Charlie Husar's* Chicken Little *moves at full tilt during the gusty first day of the race.***

**by Don Frye**

Last year, when *Good Old Boat* founders Karen Larson and Jerry Powlas agreed to sponsor the first Good Old Boat Regatta, in Annapolis, Md., they did so with a certain amount of trepidation. Although it was just a short, single-day race for "boats of some maturity," the magazine editors were more interested in concentrating on the maintenance, enjoyment, and *cruising* of old boats. This *racing* thing just might not jibe with the editorial mission.

But this year, at an after-race party, Karen and Jerry were all smiles. And they were surrounded by many smiling cruisers who had just discovered that racing can be another fun activity with old boats, especially when conducted as a low-pressure, non-combat sport.

This year's event was expanded to two Saturdays of racing, each followed by a party and trophy presentation. The venue obviously clicked because the number of entries nearly doubled those of last year. This year, the field included more cruising boats, ranging in size from a Pearson Ariel 26 to a Tartan 41. In addition, three one-design classes turned out: Tritons, Cal 25s, and Tartan 30s. Those who could not muster the three-boats-of-the-same-design minimum needed to field a one-design class were divided into fin-keel and full-keel handicapped classes. Also new: Miller Brewing Co. joined *Good Old Boat* magazine as an event sponsor.

The parties, held after each race at the Sailor's Wharf Bed and Breakfast, on Mill Creek, were as much of a highlight as the races themselves. Ron Davis, owner of the Albin Vega, *Waki*, winner of the full-keel handicapped class, put it this way: "The parties were a pleasant surprise. The people were all low-key and had one thing in common: their enjoyment of old boats. And their conversation wasn't limited to just the race."

That was illustrated by the lone Pearson Ariel owner, Robin Mace, who joined the Triton crowd in a discussion of the similarities of the boats and common problems. Through the Triton owners, she learned of another Ariel owner in Whitehall Marina, where most of the Tritons are based.

When racing entered the discussion, it was in total fun. Darlene Forte, of the Tartan 41, *Something Special*, which came in second in the fin-keel handicapped class, found the crew of the first place Cal 2-30, *Checkmate*, by their red shirts. "I kept wishing this little boat would go away, but they passed us and took the gun. And we owed them time — lots of time!" she complained to their amusement.

See the box on the facing page for the overall trophies awarded. For complete race results, fleet by fleet, on both days, refer to the *Good Old Boat* Web site:

<http://www.goodoldboat.com/regatta.html>

In two weeks of racing, not one protest was filed, nor were there any reports of shouts or anger. This was truly a fun event.

In its second year, the Good Old Boat Regatta continues to be a work in progress. While there was great satisfaction in receiving thank-you notes from several entrants (see Mail Buoy, Page 77), and in seeing eight Tartan 30s on the water after their exit from racing nearly 20 years ago, we are not about to sit back on our sterns.

A greater effort will be made over the next year to contact more older-boat fleets and cruising clubs to promote the event. Shearwater Sailing Club is discussing the possibility of enlisting its many experienced racers to volunteer on next year's cruising boats to offer pointers on trim and tactics. And for next year's post-race parties, the club will try to have two tenders to serve the many entrants and spectator boats that anchor off the Sailor's Wharf dock.

# *Boat Regatta*
# races, double the fun

In short, we are planning to keep Karen and Jerry smiling next year. While we're at it, we're planning to put smiles on the faces of a growing number of cruisers-turned-racers in the Annapolis area.

*Don, a founder of the Good Old Boat Regatta, is the sailor of a Pearson Triton,* Luff Affair.

## Overall trophies

**Best Performing CBYRA Racing Boat**: *Chicken Little*, Cal 25, Charlie Husar

**Best Cruising Boat**: *Miranda*, Tartan 30, Gene Gottschalk

**Good Old Boat Magazine Perpetual Trophy**: *Miranda*, Tartan 30, Gene Gottschalk

**Oldest Boat**: *Sandpiper*, 1960 Triton, Dan Lawrence


SpinSheet photo

## More about the regatta

**For complete race results and Don's view of the race action**, see the *Good Old Boat* Web site: <http://www.goodoldboat.com/regatta.html>

**For more race photos**, visit the *SpinSheet* Web site. (Thanks to editor Dave Gendell, who *really knows* how to shoot race photos): <http://www.SpinSheet.com>

**Want to start your own good old regatta?** Co-founders Don Frye and Charlie Husar will offer guidance: DonaldFrye@aol.com and charlie@cal25.com.

SpinSheet photo

***Whoops! Above, the crew of Dan Lawrence's Triton,* Sandpiper, *decide mid-race that the #1 isn't the best sail choice in winds of 20+ knots. At left, Bob and Cindi Gibson's Cal 2-30,* Checkmate, *is on its way to cleaning up the Fin-Keel Handicap Class. Below, Regatta co-founders Charlie Husar (left) and Don Frye (right) celebrate with* Good Old Boat *editors Karen Larson and Jerry Powlas. Karen (the one without a beard) holds the Good Old Boat Perpetual Trophy.***

*Continued from Page 3*

years it was time to produce another. Who else for the next choice but S&S, arguably the most successful yacht design firm in history.

In an off-the-cuff conversation with Dana Hewson of Mystic Seaport, he expressed interest in having the seaport provide its resources as a co-producer. Carl Cramer of *WoodenBoat* also expressed interest. These organizations joined my firm, Heritage Marine Insurance, and we formed a triad producer group. This was an ideal combination, and I am very pleased to say that the results showed it. The DRR '01 featured the largest, the broadest, and most significant display of S&S boats ever gathered. Add to this a 200-foot walking timeline display of the history of the firm and Olin Stephens onsite, actively participating at age 94, and you had the best living story of what S&S has done and will continue to do.

We intend to produce more of these Designer's Recognition Rendezvous in the future. The designer under consideration now is John Alden. The target date is June 2003.

As an insurer of both classics and newer boats, we believe in being an active and involved member of the boating community in unique and meaningful ways. The Designer's Recognition Rendezvous is one of those ways.

**Jim Cassidy**
**Heritage Marine Insurance**

**Viking ships**

I enjoyed your article on Viking yachts (September 2001). I saw the two "yachts" featured in the article while in Oslo last summer. But you don't have to go that far back in history to find good old boats that are built to a very similar design. They are still being made and sailed. One current version, called the Nordlandsbat, is built in sizes from 16 to 46 feet. They are reputed to be fast and seaworthy. Some of the larger ones have made trips from Norway to the Faeroe Islands and have achieved speeds up to 10 knots.

I visited Gunnar Eldjarn at his boat shop near Troms, Norway, as he worked on one of his beautiful creations. You can see some of his work on his Web site – with text in Norwegian – <http://www.eldjarnbaat.no/bater.html>. I saw examples of these boats – basically scaled-down Viking ships – in many parts of Norway.

**Larry Carpenter**
**Minneapolis, Minn.**

**Florida Rigging & Hydraulics**

This summer, while searching for a good old boat, I found an Islander 37 in Panama. It had been in an accident while transiting the canal. Its entire rig was destroyed, which would be the most costly of the required repairs and replacements. I emailed seven riggers and spar manufacturers for quotes on a mast and boom. My first response was from Peter Linwick at Florida Rigging & Hydraulics. He expressed familiarity with Islander 37s. He attached very detailed forms of rig measurements to be completed. Three others replied over the next few days and three not at all.

***Larry Carpenter spent the spring and summer of 2000 as crew on the 81-day delivery of a Pacific Seacraft 31 from Bayfield, Wisconsin, to Bergen, Norway. Once there, he appreciated the waterfront scenery and the hull shapes of the local boats.***

*Larry Carpenter*

Upon receiving the completed forms, Peter replied two days later with a very complete quote at acceptable prices for the mast and boom and with excellent prices on standing and running rigging, boomvang, and so on. Further questions were answered within 24 hours and usually the same day. Since placing my order, all questions, additions, and changes have been handled as though I were their only customer. Not only has Peter given freely of his rigging knowledge, but other questions regarding repair and sources of supply have been answered with speed, candor and obvious experience. Enough cannot be said about such sources.

Now, if only he would do housecalls! Florida Rigging & Hydraulics, 3905 Investment Ln., Suite 9, Riviera Beach, FL 33404. 800-718-1649, <http://www.rigginghydraulics.com/>.

**Bengt Frey**
**Beaconsville, Quebec**

**About the Pacific Seacraft Dana**

We enjoyed John Vigor's article on the Dana 24 in the November 2001 issue of *Good Old Boat*. Understanding that this is a 24-foot sailboat, some additional standard and optional features should be addressed. Storage, in addition to the usual settee and V-berth areas, include the linen closet above the V-berth, a hanging locker on the starboard side, and an enclosed wet locker located in the head and shower. Under the sliding table, there are two large drawers with a third opening door (which we use for storing shoes). The engine is also accessed at the front with a removable panel behind the companionway steps. Midship cleats are also standard. Some optional features include hot water, refrigeration, and 110-volt service. Our Colorado location requires a trailerable boat. We have trailered our previous boat to the Pacific Northwest, Sea of Cortez, Chesapeake Bay, Florida (then sailing to the Bahamas), and Maine (from there sailing to Nova Scotia). We did not want to eliminate these and other trailering options when we chose the Dana 24 cutter as our new boat. We share John's remarks about known weaknesses.

**Jerry and Arlene Le Cocq**
**Arvada, Colo.**

**Simpson-Lawrence**

Recently I bought an old, well-used 20-lb. CQR for my 1976 Northern 25. Thinking the hinge seemed a bit loose and maybe worn out, I emailed Simpson-Lawrence asking about the tolerances involved. I received a reply from one of their engineers telling me what I needed to know: "Maximum size of shank hole 31mm diameter; smallest pin size 20mm

diameter. Maximum gap between shank hole and pin when assembled 11mm. If you require this in inches, divide by 25.4. John McMaster, SL engineering." This is an example of good customer service. My anchor was fine, by the way.

**David Stovold**
**Victoria, British Columbia**

***For the past 13 years, Lawrence Lambert worked to restore the 12-Meter,* Dame Pattie. *But the rewards are many . . .***

**Used book source**
The mention of the bookshelf in the *Good Old Boat* newsletter caught my eye, so I turned to that early on in my reading of issue 21. Readers might want to check with the planet's most amazing bookstore, Powell's City of Books, in Portland, Ore., <http://www.powells.com/>. In a used book store that takes up three stories of a city block, one's bound to find something interesting. For example, one of the "hard (but not impossible) to find" books (listed in the November issue), *The Sailing Yacht*, by Juan Baader, is available: hardcover/used – standard condition for $32.50.

As of this writing, Powell's has three copies on the shelf for various prices – between $11.95 and $32.50. (Act fast. They will likely have only two copies by the time you read this!)

**Cory Carpenter**
**Aloha, Oregon**

**More good old books**
Nostalgia and collector buffs who want early editions of maritime and boat classics, may be interested in cruising by my Old Book Shop Web site at <http://abebooks.com/home/OWENOBS>.

**Jack Owen**
**Lake Worth, Fla.**

**About that 12-Meter**
A good friend of mine brought to my attention an article in your magazine. I'm writing from Ladysmith, on Vancouver Island, Latitude 49. I purchased *Dame Pattie* 13 years ago as a rigless, gutted hull, lying in Victoria, BC. She now is a rocket ship cruiser but retains all the 12-Meter features. I've included some photos. Your 12-Meter *(on the cover of the September 2001 issue)* may be *Dame Pattie*.

**Lawrence Lambert**
**Vancouver, British Columbia**

**Thanks for the regatta support**
I would like to take this opportunity to thank *Good Old Boat* magazine for your support of the annual Good Old Boat Regatta. Traditional yacht racing on the Chesapeake Bay is fast and furious, discouraging many potential participants with its aggressive and expensive form of racing. I think forums such as the Good Old Boat Regatta will encourage new skippers, those with older, less competitive boats, and those without the interest or financial wherewithall to sink a fortune in yacht racing to become interested in organized yacht racing. This will only help fortify the diminishing ranks in Chesapeake Bay yacht racing events.

In my younger years I was quite involved in sailboat racing in one-design classes, mostly as crew. I never thought I would be able to afford a real keelboat, but found there were many good deals on older one-design racing yachts that had fallen from the ranks of favor among the highly competitive Chesapeake Bay racing community. I view my 1977 Tartan 30 in the same light as I would a 1967 Chevrolet Corvette, a priceless retired high-performance collectable classic, due the same respect and worthy of restoration to its former glory. I'm hoping that this will lead the way to a new era in yacht racing, and I feel the Good Old Boat Regatta will be the premier event starting this renaissance.

**Gene Gottschalk**
**Magothy River, Md.**

**Casual racing**
On behalf of the Pearson Sailing Association of the Chesapeake Bay, thank you for the efforts of *Good Old Boat* magazine in the sponsorship of the Good Old Boat Regatta. Without your help, many of our members would not get a chance to find out what the "racer" part of owning a 1960s- or 1970s-era "cruiser/racer" sailboat means. The first race two years ago turned me on to casual racing and, while I don't race my 1967 Pearson Renegade, *Athene*, too hard, I've found a whole new world of sailing while I'm not cruising. The best part of the Good Old Boat Regatta is that the big handicap I usually carry means nothing and it is actually more challenging. I just wish I could sail against more Renegades! I hope the magazine will continue to sponsor this event in the future and will reap the benefits of increased participation as this once-a-season event becomes a fall fixture here on the bay.

**Michael Lehmkuhl**
**Washington, D.C.**

*For more, see Pages 74-75.*

**Greetings from Brazil!**
I've had many good comments on the "Twice Around in a Triton" piece *(May 2001)*, but unfortunately the Web address given at the end of the article became obsolete just prior to publication. Lots of readers have asked me about it. Any readers who are interested in more information about *Atom's* two circumnavigations can check out my site at: <http://www.yacht atom.com>.

Mei and I are in Brazil after finishing a delivery of a 28-foot Taipan sloop from Brazil. You can read about the trip by checking out the articles link on my site called "The Long Way Back to Brazil." We are leaving soon to deliver a Dean catamaran from Brazil to Trinidad and then fly back to *Atom* in Margarita, Venezuela.

**James Baldwin**
**Joao Pessoa, Brazil**

**Some friend!**
I recently showed your September 2001 issue to a friend who owns a Baba 40, and he won't give it back. I hope you can send me a replacement issue, and in turn I'll buy my friend a subscription.

**Leslie Smith**
**Amherst, Mass.**

**Address correction**
The trickle of procrastinated chores has grown with the inclement weather into a surprising torrent of "must do – should have dones." One of these "oh yeahs" is

to update my mailing address. I thought I had already done this in the spring, but my neighbor keeps delivering my *Good Old Boat* several days and a few wrinkled pages later than I expected it, with no complaints about correcting my address. So perhaps the message didn't arrive.

**Will Sturgeon**
**Vancouver, British Columbia**

**Don't lose focus**

Just a quick note to compliment you on another fine issue of *Good Old Boat*. I especially liked the piece about Olin Stephens. He has cast a huge shadow across our sport and continues to promote the values that provide the GOOD in our old boats. I did notice an expansion in content to include articles on sailing schools, Alaska, and marine mammals. I mention this as an observation rather than a criticism. You continue to set the standard with well conceived and executed articles that lend assistance and encouragement to older boat owners. I would hate to see that sharp focus diminished!

**Dave Chase**
**Fenton, Michigan**

*Not to worry, Dave, we do wander a bit but only for variety's sake and not very far. Our interests lie in articles about our boats, the maintenance and upgrades that go into them, and the people who love them. In the beginning of this publishing adventure people wondered what we would* ***ever*** *come up with to fill six issues a year. That has not been a problem. There are many more boats to cover, tons of projects not yet mentioned, and more, much more. We know where we're heading, and we won't pull any surprises.*



**Eagerly awaited**

For the past year, the arrival of *Good Old Boat* in my mailbox has been an eagerly anticipated event. To those of us who sail older boats and subscribe, your endeavor is much more than just a magazine. It speaks our language, helps solve our problems, all the while informing and entertaining.

**Bill Bell**
**Sea Cliff, N.Y.**

**Where have you been?**

Congratulations, yours is the first magazine in which I have read every article from cover to cover since Jon Wilson began publishing *WoodenBoat* some 30 years ago. What puzzles me is how I have missed your magazine for the past few years. When I first saw it last week at a West Marine store, I thought it must be the first issue. Somehow, it seems to have escaped the attention of the sailing public at large.

**James Shannon**
**New York, N.Y.**

*James, we're creating this magazine on a shoestring, so we can't afford to shout as loud as some publishers do. We rely on "the kindness of strangers" as much as anything to spread the word, so if you know other good old boaters who don't know about "the sailing magazine for the rest of us," please tell them about your discovery. We will happily send sample copies to anyone who has not yet seen the magazine. We'd even send any individual who wants to evangelize a bit on our behalf a bunch of copies to spread around any marina full of sailors with good old boats. We call it guerrilla marketing. It's slow, but that's how we find our subscribers: one at a time. Along with finding them, we strive to give them the content they're looking for, so they'll stay!*

**But it's tempting**

I'll probably still have my Chrysler 22 (in years to come) since my daughter would kill me if I sold it. She wants me to will it to her. I guess that means I can't take it out and pull the plug when I'm old.

I'm sure everyone tells you this, but I love *Good Old Boat*. Have since the first issue, and I saved all of them since.

**Gwen Sanford**
**Traverse City, Mich.**

**Modern equivalent of the front porch**

There is a great deal more to be gleaned aboard a sailboat than just how to capture the wind. The quiet, relaxing nature of sailing presents an intimate, cathartic atmosphere where sensitive subjects are naturally and comfortably explored. Our sailboats are, in effect, the last bastions of the long-gone front porch where we share, learn, and teach without the distraction of the television or the Internet. The close confines of the cockpit allow us to observe each other in a way not possible in other venues. Sailing and the art of human interaction are important gifts to pass on.

**Glen Smith**
**Fairfield, Conn.**

***Send questions and comments to* Good Old Boat, *7340 Niagara Lane North, Maple Grove, MN 55311-2655, or by email to jerry@goodoldboat.com. Please limit messages to 150 or fewer words. We reserve the right to edit.***

# Last tack

# This isn't Kansas anymore, Toto

by Jerry Powlas

I wrote the editorial for the November/December issue on September 10 and handed it in the next day. It made no reference to the events of September 11. When you publish every two months, you tend to stay away from current events. I wasn't sure we would ever discuss terrorism in this magazine. I wasn't sure it had anything to do with sailing. Now it looks like this is going to be a marathon, not a sprint, so maybe there are some things worth saying in this venue.

Others have observed that nothing is going to be quite the same ever again. On September 10, most people felt pretty safe. Most people literally couldn't imagine that they and their loved ones were in any danger from terrorist attack. The next day they saw that their fellow citizens could be slaughtered by the thousands. They felt fear and terror, as our enemies intended.

The civilian population of our country has not felt these kinds of fears since World War II and has not experienced such massive losses since the Civil War. We are not likely to be able to feel as secure as we did on September 10 any time soon. Perhaps never again. This isn't Kansas anymore, Toto.

But I'm talking to sailors here, and most sailors already know that they don't have to feel absolutely safe all the time. Coin collecting would be safer, but they have chosen sailing. Such risks as sailing may pose are either not entirely understood or are considered acceptable. Either way works.

The object of terrorism is to spread fear among a large population and so impose the political and military will of the small group on the larger. Sometimes it works. Sometimes it doesn't.

There is nothing really new here; it is just new to us. We can look to other times and places for how to deal with this. Londoners in the Blitz, for example, displayed the courage we need to understand. Other countries have endured acts of terrorism on a regular basis for many years. We can learn from these people, too.

Percentagewise, terrorists don't actually attack very many people. Their goal is to kill a few people and frighten the rest. This is a very efficient process when it works.

But it does not have to work.

On any given day, for any person who is not actually attacked, the battle is between that person and his or her own fear. There is no courage without fear, and courage can be learned. On those days when a person discharges his or her responsibilities effectively and enjoys the pleasures that life may offer, the person wins the battle, and the terrorists lose.

The popular culture of September 10 was based, to some regrettable degree, on the media entertaining and motivating the population by shocking it. Things that were shocking only a few years ago had lost their effect, and so more shocking things were devised. On September 11, the events were more shocking than most of us could ever contemplate, and we were not amused.

Sailors who have been on a boat in threatening circumstances have probably observed that fear can spread through a crew very rapidly, and that it will degrade their performance. They know this is to be avoided. I would hope that my fellow members of the media would take this opportunity to truly understand their responsibilities, and that they would not assist the terrorists in spreading fear. Our citizens need to be informed; they do not need to be shocked. This is a time when duty demands a higher degree of professionalism and objectivity from our media. I sincerely hope they rise to the occasion.

Sailors who have been on a boat in threatening circumstances with a crew that possessed both confidence and competence probably look back on the experience as a positive one. A good crew does not let fear spread, and they are the safer and more comfortable for it.

We are not in any greater danger now than we were on September 10. That was the illusion; this is the reality. It is time to study and acquire the virtues of courage and toughness, and it is time for all of us to prevent the fear from spreading. If we do this, life will be more or less normal for most of us most of the time.

It seems to me that the duties of citizenship and love and family have not changed in the light of recent events, and when we have discharged these duties, we can still be proud. And there still will be time to go sailing.

*Drying continued from 44*

few simple procedures:

- Freeze your jerky meat to make it easier to slice. Jerky can be made from any type of low-fat meat such as beef, poultry, pork, wild game (remember to freeze this meat for several weeks first), or even fish.
- Slice partially thawed meat into ¼-inch thick slices, across the grain for tender jerky or with the grain for tougher jerky.
- Prepare a marinade made from soy sauce with a little pepper, garlic powder, and onion powder or whatever spices you've got on hand.
- Bring the marinade to a full boil and add a few slices of meat at a time making sure that the marinade covers the slices.
- Bring this back to a full boil then remove the jerky slices with tongs. Drain the slices on paper toweling then transfer them to your oven to dry at temperatures between 140 and 150°F. Line the bottom of your stove with aluminum foil to catch any drips.

Jerky is done when a cool slice will crack but not break when bent. There should be no moist spots on any slice. When done, refrigerate or cool it overnight in a plastic bag. If there is any moisture in the bag, dry it further. Store jerky in a cool, dry place away from sunlight.

Food preservation specialists have begun advocating precooking your meat slices before drying, due to an outbreak of food poisoning after several people ate homemade jerky that had been dried in a home dehydrator. They found that home dehydrators do not bring the temperature of the meat high enough to kill all possible bacteria.

Nor is presoaking in a marinade overnight advised since bacteria can spread throughout the galley when the slices are drained. So pre-cook your meat and do your marinating in a boiling marinade.

## What to dry in the oven

Meats and fish are easier and safer to dry in the oven since the temperature can be controlled better. Because oven drying is twice as fast as open-air drying, it makes a better product. I prefer oven drying for the harder-to-dry fruits and vegetables as well as for any fish or meat jerky.

## Oven drying

When oven drying, you need not have drying trays. Just stretch netting tightly around the oven racks and pin or temporarily stitch it in place. Line the bottom of your oven with aluminum foil to catch drips. Preheat your oven to 140°F before placing food inside. Place food in the oven so air can circulate around it. Leave the oven door slightly ajar to allow moisture to escape if you are using a gas oven. Stir or turn the food halfway through drying to help keep the drying even. Times given in the table depend on your oven temperature, the humidity level, and the level of moisture in the food. It helps to have good air circulation; running a fan nearby can hasten the time. *Never dry foods overnight when using a gas oven due to the danger of asphyxiation.*

## Storing dried foods

It is important to store your dried food in containers that will protect it from moisture and bugs. Storing dried foods in small quantities will limit the amount of food lost if spoilage occurs. Glass jars or double-bagged resealable plastic bags work well on board. Plastic freezer bags inside glass jars protect your food even further. Protect glass jars with padding or by placing each inside a sock. Store dried foods in the coolest, darkest place on board. Dried foods stored at cool temperatures tend to retain more of their vitamin content than those stored in hot conditions. Nutritive value depends on the length of the storage time, so if you are in a very hot climate, eat your dried foods in a timely manner. That's not hard to do anyway!

In the first week or so after drying your food, check it daily for signs of moisture. If there is moisture on the food or in the container, finish the drying in the oven at 140°F. Later, check your dried foods weekly to make sure they have not become damp, contaminated, or moldy. If dried vegetables show any signs of mold, throw them out! Some molds on vegetables produce aflatoxin food poisoning.

In optimum conditions (40 to 60°F in a dark, dry environment), dried fruits and vegetables maintain taste and nutritive value for up to a year. Meat and fish can be stored for three to six months theoretically. But boats rarely provide such optimum storage conditions since cabin temperatures can fluctuate sharply. Temperature fluctuations can cause condensation to form inside storage containers. So, it is important to check your dried foods periodically.

Dried foods add another dimension to eating on board. They are wonderful to add to cooking when fresh fruits and veggies have been consumed. And they are great to snack on during night watches or on the first part of a passage when you need to eat lightly. Weighing less, saving space, longer storage . . . hmmm . . . that sounds pretty great! I wonder what else I could dry around here?



*In another life long, long ago and far away, Theresa was a home economist specializing in consumer education. After receiving her BA in home economics at the University of Montana, she went on to become a master food preserver with the co-operative extension office in Montana. Theresa and family live and cruise aboard* Lindsay Christine, *a Mercator Offshore 30.*

# Reflections

# As good as it gets

**by Philip Nunn**

As I stood on the top step of the boarding ladder inspecting *Dream Quest* in the dim starlight, my mind drifted back over the day. We'd spent 13 hours in a moderate northerly breeze with 3-foot waves, billowy clouds, and temperatures in the low 70s. My wife, Hilde, and I had been tapped to entertain a couple with a day of sailing. This was the first time we had done this. The couple had never sailed on a yacht, although 27 feet is barely considered a yacht these days.

Right off the mooring buoy, I let our guests sail the boat with my guidance (I don't yell any more, even when something goes wrong). With the benign weather, our obligation quickly turned into an enjoyable cruise with a gentle undercurrent of excitement. Hilde had planned the meals as well as I had planned the sailing. She coaxed a bountiful table from the small galley. Out of compassion for her challenge and to enable seating our guests at the table in the cabin, I anchored behind the breakwater during mealtime. The conversation was quiet and relaxed, punctuated with soft laughter.

At the end of the day, we were rewarded with a nice sunset, not a great one but the kind that pleasantly punctuates the end of a nice day of sailing. As they disembarked in the deepening dusk, our guests exclaimed that their expectations had been exceeded. They were happy. We were happy. I swung the boat west toward her mooring buoy half a mile away in the dark. It was a challenge to steer through the crowded mooring field by starlight and to avoid the walleye and salmon fishermen. One fishing boat didn't carry any light and was only a darker shadow. But I was in a good mood and just brushed around it as a caution to this negligent one.

As we approached the buoy, I noticed our neighbor, Ron, had his cabin lights on. He likes to stay on his boat on weekends. He recognized *Dream Quest* in the dark and called, "What are you doing?"

With a chuckle, I answered, "Trying to hit my mooring in the dark for the first time."

His blessing was: "Good luck."

I did hit it on the first try and had enough light from the mast light to be able to pick one of my mooring lines out of the water. Before I stepped down into the dinghy, I stood on the top step smiling.

"This," I thought, "is as good as it gets for an old man and an old boat."

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