

GOOD OLD BOAT

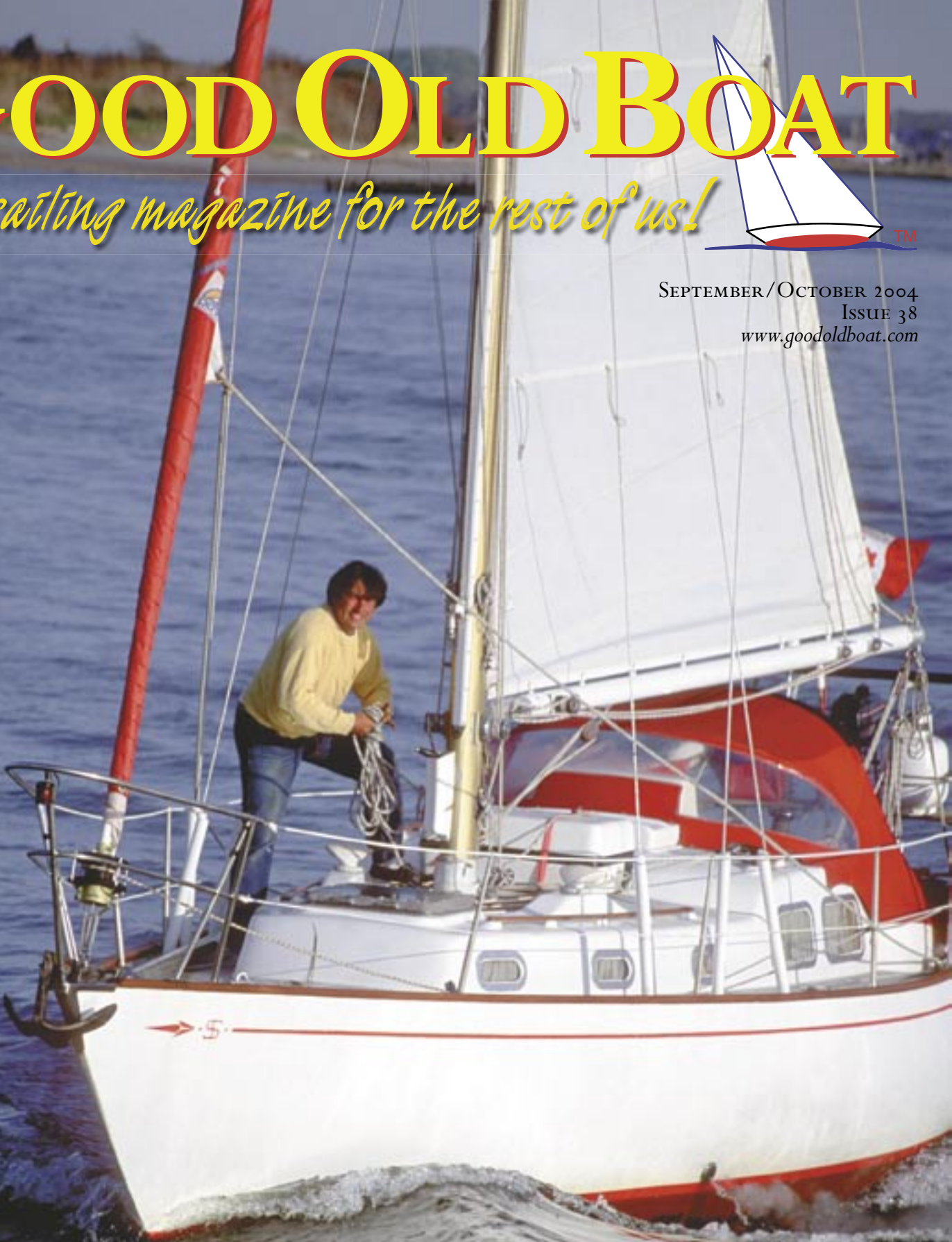
The sailing magazine for the rest of us!



SEPTEMBER/OCTOBER 2004

ISSUE 38

www.goodoldboat.com



\$7⁰⁰ (Canada \$9⁹⁵CDN)



On newsstand until October 31



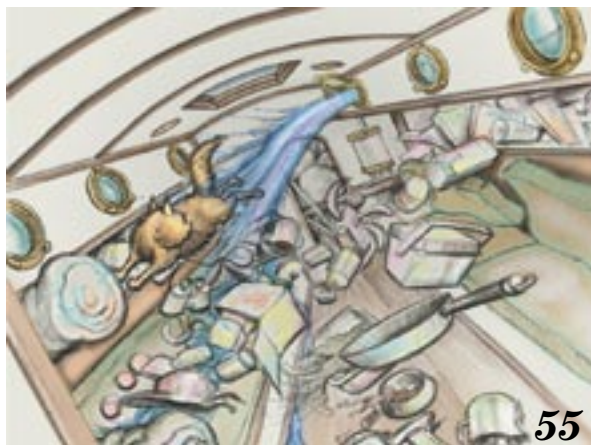
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Voices from everywhere

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Where you can find our magazine

(and sometimes the back issues you're looking for)

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Ed Lawrence (*Cor-sair 24*, Page 4) is a contributing editor with *Good Old Boat*. Adam the grizzly is a celebrity bear (and neighbor in the Montana outback) who occasionally looks over Ed's shoulder during the editing process.



Marianne Scott (*Bluewater Spencer*, Page 8) started writing about marine subjects when she and her husband, David, sailed from Victoria, British Columbia, to Bora Bora on their good old boat, *Starkindred*, a Niagara 35. Marianne is the author of *Naturally Salty — Coastal Characters of the Pacific Northwest*.



Dan Spurr (*The world according to Hoyt*, Page 14) is research editor with *Good Old Boat* magazine. He and his family moved to Montana where he writes books and articles for marine publications.

Three-time circumnavigator, **Hal Roth** (*Making the dream come true*, Page 20) has sailed 200,000 miles, much of the time with his wife, Margaret. He is the author of 11 books on sailing, including *How to Sail Around the World*, from which this article was excerpted.



Ed Verner (*Restoring the non-skid*, Page 25) is a pilot, musician, writer, and sailor. He grew up on Sunfishes and Hobie Cats on the Gulf of Mexico and cruises in the Tampa Bay area now. He provides occasional sunset cruises aboard *Wind Ketcher*, an Allied Seawind II ketch.

After years of messing around in boats, **Andy Uytenbogaart** (*We skid no more*, Page 29), his fiancée, Neena, and their cat, Nutmeg, have just completed a year of cruising the East Coast of the United States in *Second Chance*, their 1990 Hunter Passage 42.



Jim Craighead (*The little job that grew*, Page 32) found his sea-kayak construction skills transferred nicely to rebuilding sailboats when he purchased a Chrysler 26. It started as an experiment — just to see if he and his wife, Annie, would enjoy sailing. The rest, as they say, is history. They now spend many evenings and weekends sailing (and working) on *Festina Lente* (Rushing Slowly).



Dave Martin (*Deep-sea dreams*, Page 36) is a contributing editor with *Good Old Boat*. In the early 1980s, he spent two years sailing his Cal 25, *Martini*, from Seattle to New York City, via the Panama Canal. Between 1988 and 1995, Dave and his wife, Jaja, circumnavigated aboard that Cal. Between 1998 and 2002, the Martins, along with their three children, voyaged to the Arctic aboard their 33-footer, *Driver*.



Ben Shaw (*Love triangles*, Page 40) has worked as an actor in Los Angeles and a computer programmer for Microsoft in Seattle. He and his girlfriend, Miranda, cruised the Caribbean for a year.

He sold his Allied Luders 33 in order to attend Columbia Journalism School. He's currently a freelance reporter looking for work in public radio.

Don Launer (*Seacocks 101*, Page 42; *Quick and easy: Boltropes and tracks*, Page 73) is a contributing editor with *Good Old Boat* and an inveterate do-it-yourselfer. He built his own home ("I bought 28,000 bricks, a cement-mixer, and a book on how to lay bricks") and has built about a half-dozen boats over the years. He constructed his present 32-foot Lazy Jack schooner from a bare fiberglass hull.



Elisa Nelson (*Center spread: Morning sail*, Page 44) is a self-trained artist specializing in pen and ink. She is also an accomplished photographer and occasionally works in watercolor. She works at the Lake Champlain

Maritime Museum on the Burlington, Vermont, waterfront, where professionals and volunteers are creating a full-scale replica of a wooden 88-foot canal schooner. <<http://www.LCMM.org>>. Elisa can be reached at 802-864-7573.



Suzanne Giesemann (*Flying blind*, Page 46) is a newly retired U.S. Navy Commander. She and her husband, Ty, began their long-awaited cruising life last summer and are exploring New England on their Morgan 46, *Liberty*.

Geoffrey Toye (*The woodpile . . .*, Page 50) lives in a beach house on the west coast of Wales. He's been involved with small craft for more than 40 years. A writer and journalist, he just finished his second novel.



Gregg Nestor (*Checklists galore*, Page 51; *Simple solutions: A proper winter cover*, Page 77) is a contributing editor with *Good Old Boat*. More than 20 years and four boats ago, he discovered sailing and has been an avid trailersailor ever since. He and his wife, Joyce, sail an O'Day 222, *Splash*.



Henry Cordova (*Passage to San Diego*, Page 55) is a geographer/cartographer who has been a sailor of the military persuasion (U.S. Naval Reserve on the USS *Dewey*) and of the recreational variety (a San Francisco Pelican and a MacGregor 22) for most of his life.



Bob Steadman (*Quick and easy: Cushion keepers*, Page 72) built a 37-foot cutter, based on a Cascade 36, 20 years ago and has been sailing her ever since. He has cruised Mexico in her three times and is getting

ready to take off once more for more distant anchorages.

Alfred Poor (*Quick and easy: Clean air act*, Page 74) grew up sailing on the Chesapeake Bay on his father's boats but only became a partner in his own good old boat, a 1969 Cal 29, six years ago.



George Colligan (*Simple solutions: Concordia seatbacks*, Page 79), formerly a marina owner in upstate New York, sails with his wife, Susan, aboard their Tartan 34, *Temujin*. Their sailing plans include voyages around the Great Lakes, passages to Cuba, Ireland, and other points around the compass.



Now retired after a career that included boatbuilding, boat deliveries, and writing, **Jack Dillon** (*Simple solutions: Plastic navigation*, Page 80),

lives in Hamden, Conn. He lived aboard a 27-foot cutter for 11 years, cruising both coasts and Bermuda.

Silver Donald Cameron (*Reflections: Last sail of summer*, Page 89) is the author of several books about ships and the sea. He lives in D'Escousse, Nova Scotia. Visit his website at <<http://www.islemadame.com/sdc/>>. Don was recently awarded an honorary degree for his many contributions to Canadian literature. We're particularly impressed by the honorary hat.



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38 – Volume 7, Number 5

Good Old Boat (ISSN 1099-6354; USPS
019327), published bimonthly by:

Partnership for Excellence, Inc.

7340 Niagara Ln. N.
Maple Grove, MN 55311-2655
Phone: 763-420-8923; Fax: 763-420-8921
www.goodoldboat.com

Periodicals Postage Paid at Osseo, MN 55369,
and at additional entry points.

POSTMASTER, send address changes to:

Good Old Boat

7340 Niagara Ln. N.
Maple Grove, MN 55311-2655

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part forbidden except by permission of the
publisher. Printed in Canada.

Editorial contributions are handled with
care, but no liability is accepted. **Opinions**
expressed by the writers are not necessarily
those of *Good Old Boat* magazine.

Subscription rates (1, 2, 3 years):

U.S. and Canada – \$39.95/\$74.95/\$110US
Overseas – \$49.95/\$95.95US

About the cover...



Photographer Mary Jane Hayes captured this photo of *Redline*, a Canadian visitor at New Jersey's Cape May Inlet in 1993. Mary Jane must hold some sort of record with *Good Old Boat* covers. We've featured her photos six times since we began publishing.

Transformer contentment

*There's no need
to change our snug convertible just yet*



NOT LONG AGO I READ IN ONE OF THE many books about living aboard that we should want to own a boat with separate eating and sleeping quarters if we plan to live aboard. That would be nice, I agree. I think about that every time we turn the table into a bed and the bed back into a table. I particularly think about it when Jerry jokes about having the ultimate Transformer toy. (Remember the kids' toys that clicked into and back from all kinds of interesting things?) Pretty soon, he says, we'll turn the boat into a car and drive it home. How hard could that be? It already shares many attributes with RVs.

I like our boat. Must I buy a newer or larger one to live aboard? It's tight living space for two in 30 feet, I admit. Even though we don't live aboard, we do spend weeks at a time aboard. And when we do vacation aboard, we make the bed into a table and the table into a bed several times a day. We never think of it as a hardship, but rather as a source of comedic relief. We get more out of our limited spaces because they're convertible. Our boat is like having a studio apartment... a bit small, perhaps, but more affordable, a little quaint, and definitely lovable.

Trade our boat in for something larger, something more comfortable below but less maneuverable on the water? I think not. Our home away from home is the best compromise for our current set of sailing needs. We'll keep our Transformer toy just as long as we can appreciate the humor in

the situation. That could be for many, many years to come.

Good old regattas

The first-ever Swiftsure Classics Race, sponsored by *Good Old Boat* in May of this year, was a great success. There were 16 competitors in this new division of a well-respected yacht race. The winner of the *Good Old Boat* Trophy was Bob Benthams with his boat, *Dystocia*.

Meanwhile the Good Old Boat Regatta in Annapolis hosted by the Shearwater Sailing Club, now in its

fifth year, has grown beyond all expectations. This year's two-Saturday event is set for October 2 and 9. For more information, visit our site <<http://www.goodoldboat.com/regatta.html>>.

Another new classic race, the Heritage Series for Good Old Boats, is running during

four weekends of September and October in New York and Connecticut, beginning with the Governor's Cup Regatta in Essex, Connecticut, on Sept. 11 and concluding with the Race Rock Regatta Classic Weekend Oct. 1-3 in Stonington, Connecticut. For more about this fun sailing event, contact Jim Cassidy at 800-959-3047, jim@heritage-marineinsurance.com. (Also see their ad on Page 82.)

Karen Larson

Corsair 24

Corsair Marine's little three-huller is fast and fun

by Ed Lawrence

LEST WE FIND OURSELVES ENGAGED IN one of those downward-spiraling debates about the characteristics that define a good old boat, trust me: I find a traditionally designed Colin Archer sloop or cutter as pleasing to the eye as the next chap. A main saloon with room for a kerosene lantern to swing from the overhead and an enclosed wine locker are just fine with me.

Nonetheless, the fact that a boat may not have teak on the gunwales or cockpit seats and may have a reverse transom need not result in its banishment from the world of good old boats. That it may have more than one hull (heaven forbid!) is not a knockout punch either, especially when it is as foldable and as easily trailerable as the Corsair 24 trimaran.

Think of it this way: with a trailerable boat you can be sailing in Kansas, Dorothy. Add this: if you're aboard a Corsair 24 in virtually any wind condi-

“‘Ease the sheet,’ the broker said, so I did. He footed off two clicks, and the 24 accelerated as if someone had lit an afterburner. Boat speed immediately increased to 9 knots...”

tion, you'll be going faster than similarly sized monohulls and some of their big sisters. There's more: if the mood strikes, 30 minutes after loading her onto a trailer you could be motoring toward a sailing destination in North Dakota. Or Nebraska.

Prior to my first Corsair Experience, I suffered from a heavy dose of skepticism, based on old prejudices. After all, multihulls just don't look like real

sailboats, do they? Plus the conventional wisdom (now there's an oxymoron for you) held that multihulls do not sail well to weather. They require the rental of two slips, so these craft were exiled to end ties with little protection from waves and wind. In addition, the Corsair was designed to fold up, and I figured that was merely trouble waiting to happen.

Wind and calm

Then I sailed on a 24 for two days during a regatta on Puget Sound in no wind and in lots of wind. Shanghaied by a boatbroker who was demonstrating the boat for a potential buyer (and the client's bikini-clad companion — bad form in the Northwest), I signed on as a sail trimmer.

What fun! Beating in 10 knots of breeze on the first weather leg, I managed to overtrim the jib and stall the main while trying to point to within 45



Photos courtesy of Corsair Marine

degrees of the apparent wind. With boatspeed at a steady 5 knots, that seemed to confirm the multi's lack of pointing ability.

"Ease the sheet," the broker said, so I did. He footed off two clicks, and the 24 accelerated as if someone had lit an afterburner. Boat speed immediately increased to 9 knots, and we began passing a monohull fleet that had started ahead of us, though well to leeward. No matter. Just as the book says, we sailed more distance on a lower course and made more tacks than the monohulls but were close enough to the breeze that we reached the weather mark ahead of the pack in the company of several other multis.

We were faster on the downwind leg too. Rather than sailing 130 to 150 degrees off the apparent wind with a spinnaker — the normal routine on a sloop — we sailed at 120 degrees under an asymmetrical spinnaker tacked at the bowsprit. I became a True Believer when the entire fleet of nine trimarans danced the same dance, with boat speed a steady, comfortable, 12 to 13 knots.

Day Two was a replay of Day One, except the bikini had been replaced by layers of fleece. Plus the designated trimmer made the classic boo-boo. As part of my contribution to the effort, I managed to attach a sheet to the head of the reaching spinnaker, resulting in the sail being hoisted sideways.

"I thought the numbers on the sail were a little hard to read," the broker said, hoping that his plans to cash a commission check had not been waylaid.

Company history

No longer the new kid on the street, Corsair Marine was founded in 1983 by John Walton of the Wal-Mart fam-

Nine to 12 knots and a hull out of the water looks like fun, and it is! Enough Corsair 24s have been built (398) to create some active one-design racing fleets around the country. For just cruising, it's a Spartan and spendy way to go ...but still a lot of fun.



ily to produce fast, easily trailerable multihulls. To meet that objective, the first compromise required designing accommodations that are, at the least, cramped but functional. Overnighting is akin to camping in a pup tent and cooking on an tiny camp stove. Nonetheless, John Walton and subsequent owner Paul Koch succeeded, despite the complicated, people-intensive construction process necessary to produce foldable boats capable of withstanding loads endured at sea and on the highway. A by-product, however, was pricing that ratcheted the boat into the upper stratosphere and initially produced sticker shock in the marketplace. In retrospect, when high resale value is added to the equation, the long-term cost is lower than that of many other boats.

At the outset, John convinced Ian

Farrier, a high-profile multihull designer in New Zealand, to abandon a thriving practice and move to California to execute his vision. (Ian's story is told in the March 2004 issue). Ian designed

"Under sail, this boat is as easily manageable as a traditional sloop. An optional bowsprit adds horsepower by allowing the use of the asymmetrical spinnaker, which is a kissing cousin to a light-air drifter."

the first Corsair, a 27-footer that still enjoys an excellent production run, before he and Corsair had a falling out that led to his departure. Rehired, he designed the F-24 Corsair Sport Cruiser in 1991 before a second disagreement, after which both parties

went their separate ways for good. Paul Koch purchased the company in 1994 and continues the manufacturing operation in California. In its first two decades, Corsair has produced 1,260 boats; annual production is typically 72 to 75 boats, Paul says. The original 24-footers, designed by Ian Farrier, were called F-24s; newer models, based on Ian's design, are called Corsair 24s.



Design

During a morning-long session with Ian Farrier at his Seattle office, I learned that he sees the world only through multihull lenses. While elaborating the many reasons he considers a multihull to be the best alternative, he says, “The proper attitude for a monohull is resting on its bottom on the bottom of the ocean. In comparison, a multihull’s natural orientation is floating on top, in either an upright or inverted attitude. Corsair boats are virtually unsinkable. They have watertight compartments so even if pitchpoled, the crew can crawl inside a capsize hull and have air to breathe and protection from the elements. A monohull’s crew will most likely be adrift in a life raft.”

As with most foldable trimarans, understanding Ian’s design target for the original F-24 requires a lesson in the language of the artist, since designers have different names for components. The main hull, which is typically narrow and shallow to produce speed, may be called a vaka. The floats are called amas by Ian Farrier and outriggers by Tony Smith, another noted multihull designer. The amas are V-shaped to produce maximum lift and minimum drag, and their center of buoyancy is located well forward to reduce any tendency of the bows to bury, especially when they are loaded

She’s lightweight, so she’ll go in light air, above, and plane in a blow. Accommodations are not luxurious, however, at right. The Porta Potti is beneath the port bunk. The galley is very simple. Headroom is for stooping or crawling only.

with spare gear. Akas, which would otherwise be referred to as crossbeams, connect the vaka to the amas.

Five years after its introduction, a new, lighter Corsair 24 Mark II was introduced. The newer version features a fine entry on the center hull, a U-shaped midsection, and a relatively fat and flat stern section. The flat section aft allows the boat to plane downwind and also dampens pitching moment when seas are up and wind speed is down. Most of the stern sits well above the waterline to reduce wetted surface (and friction) and add buoyancy aft.

Modifications

Other important modifications were a rotating mast and single-spreader rig, a transom-hung rudder, and a retractable daggerboard, all of which simplified sailing. Performance was improved by the combination of the weight-loss program, hull shape, and improved hydrodynamic shape of the daggerboard and more aerodynamic shape of the mast. A square-top mainsail added horsepower aloft and created a signature profile.

Compared to a folding catamaran, which typically slides together, a Corsair folds inward to produce the appearance of a giant daddy longlegs. The akas (those crossbeams) fold into

“The high cost of Corsair’s boats is attributed to several factors, not the least of which is the tooling cost associated with a boat that has more than 50 different molded sections.”

an upright position, reducing beam to an easily trailerable 8 feet 2 inches. Initial fears concerned the durability of the structure, but the boats have proven

themselves to be eminently seaworthy. From an operational standpoint, once he’s familiar with the process, an owner can have the hulls deployed in less than five minutes.

Another plus of the design is that, even when folded, the amas produce adequate stability for the boat to be motored safely at slow speeds.

Deck

Logic dictates that a 24-foot-long, 17-foot-wide boat should have room in the cockpit for a crew of 20, right? So much for logic. With room for the helmsman, tiller, and two sail trimmers, cockpit space is at a premium. However, space for a dozen loungers is on the center hull and netting between the vaka and amas... which also provides a ventilated space from which to view the water coursing below.

Under sail, this boat is as easily manageable as a traditional sloop. An optional bowsprit adds horsepower by allowing the use of the asymmetrical spinnaker, which is a kissing cousin to a light-air drifter. However, on this boat the payoff is tremendous. For openers, the sail is easy to handle,



eliminating the mental barrier encountered by crewmembers who just don't want to deal with a spinnaker, spinaker pole, foreguys, afterguys, and the complications encountered when flying a 'chute. With this sail, it's just a matter of attaching the tack to the 'sprit, adding two sheets, and holding on while speed doubles. Easy is good; fast is fun.

Belowdecks

Living space is at a premium since the center hull has less than 7 feet of beam. The good news is that there's little risk that the boat will become the social center when tied up at the dock. Headroom is greatly improved when a pop-top is elevated, which also makes a very positive contribution to ventilation. Otherwise, headroom is about head high for a seated adult, and crew may be rubbing elbows and touching knees when seated on the settees. There's a paucity of storage space, as well, though additional space is under the cockpit and in the amas. Without shelves, those areas tend to have the appearance of an overstuffed sock drawer. As a consequence, one of the fun challenges for those with an organizational bent is creating storage with the use of small bags and other portable containers that may be attached to the interior of the hull with Velcro. Boat camping implies a portable alcohol stove, sink, and Porta Potti, and the Corsair does not disappoint. A (sort of) private V-berth forward will probably be occupied by the kiddies or vertically challenged adults. Skipper and first mate will usually occupy quarter berths port and starboard.

Construction

The high cost of Corsair's boats is attributed to several factors, not the least of which is the tooling cost as-

sociated with a boat that has more than 50 different molded sections. The 24's structure includes the vaka, amas, akas, and the dozens of interior components.

From the outset, the company has employed the use of high-tech raw materials, including vinylester resins, carbon fiber, double-bias fabrics reinforced with Kevlar, and a vacuum-bagging process.

The lamination schedule consists of a layer of gelcoat, a skin layer impregnated with vinylester resin to prevent blistering, and multiple layers of uni- and bi-directional fiberglass. Kevlar is laid in high-stress areas on the bottom, the daggerboard trunk, and at bulkheads. The hull-to-deck joints in older boats were bonded with a vinylester fiber-filled putty compound; newer boats are bonded with methacrylate. Historically, boats have not experienced hull-to-deck-joint leaks.

To increase their stiffness, the akas (crossbeams) are constructed of layers of fiberglass, carbon fiber, and foam. Additional strength and buoyancy are produced by watertight bulkheads in the amas.

Pricing

The base price for a new Corsair 24 is \$42,695. Expect to add \$1,000 to \$1,500 for mainsail and jib, depending upon fabric and design. Necessary options include an electrical package with navigation and interior lights (\$840). The wish list might include a Schaefer 750 furler (\$1,691) and a VHF radio,




A folded tri can occupy a standard dock space. In fact, its folded (and trailerable) beam of 8 feet 2 inches makes it narrower than most cruising monohulls.

antenna, and cabling (\$785).

A similar-sized monohull can be purchased for 75 percent of this boat's price. On the upside, well-maintained, newer used boats are selling for 75- to 85-percent of their original price.

The bottom line

First, she's a good boat, despite having three waterlines. She'll sail in light and heavy breezes. She's fast and simple to manage. Since her sailors spend most of their time topside, the deck (netting) space is a real plus. She does suffer a smallish interior when the galley slave is preparing a meal for five and if overnighing in cool climes with more than three adults. In warm weather, I'd sleep under the stars.

Nonetheless, unless accommodations are higher on your priority list than performance and comfort under sail (she sails flatter than a monohull, you know), or you are planning an extended cruise with a family of eight, this boat is worth a second look. Just be sure there's a big X on the head of the spinnaker before you hoist the sail. 



Corsair F-24

LOA: 24 feet 2 inches
LWL: 23 feet 7 inches
Beam sailing: 17 feet 11 inches
Beam towing: 8 feet 2 inches
Draft sailing: 4 feet 8 inches
Draft towing: 1 foot 0 inches
Displacement: 1,690 pounds
Sail area mainsail: 243 square feet
Sail area jib: 122 square feet
Sail area spinnaker: 243 square feet

Resources

Corsair Marine
 150 Reed Court
 Chula Vista, CA 91911
 619-585-3005
<http://www.corsairmarine.com>



Bluewater Spencer

*A baby-blue
Mark II Spencer 35
heads for the horizon*

by Marianne Scott

IN 2002, JIM KELLAM WON THE Singlehanded Transpac Race in his refurbished Spencer 35 Mk II. The Canadian from Vancouver won the race from San Francisco to Hanalei Bay, Kauai, on a corrected time of 10:10:48:11. This victory was a pleasant surprise; his goal wasn't winning the race, he simply didn't want to embarrass himself. But he found the Spencer was "easy to sail to its rating" (Pacific Cup Rating 231). "I averaged 90 percent of the boat's hull speed," he says. "We went around 5.8 knots or 140 nautical miles a day."

This wasn't Jim's first round-trip voyage to Hawaii. Three years earlier, inspired by the books of Moitessier and Knox-Johnson, Jim had counted on his Thunderbird experience to solo-sail a Gulf Island 29 to Hawaii: the 24 days alone were a test of his grit against the expanse of the Pacific Ocean. The 2002 Transpac race challenged him again, this time against both the sea and a pack of boats designed for speed.

Love-struck by long-distance sailing, the trim, compact 52-year-old signed on again for last June's 2004 Singlehanded Transpac Race. After that 2,120-nautical-mile voyage, he has plans for a 45,000-mile solo circumnavigation that will take about 27 months. He has persuaded his employer to give him a leave of absence. "Because I'm completely unimportant, the company is allowing me retirement on the installment plan," he banters.

His future route is nebulous; he might go south from Hawaii, maybe to Tahiti or Rarotonga, or he might spend time in New Zealand. I ask how, alone on his boat, he'd enter some atoll whose coral heads require someone on the bow to point out dangers to the skipper.

"I'm not going to those islands," he says with his gravelly voice flavored by nicotine. "You see, I'm not all that interested in *places*. I want to sail, be out on the water. I like the freedom and self-reliance. There are so few activities that allow that for ordinary people."

Quit school early

Jim grew up on an Ontario farm and never saw water unless "it was in the trough that waters the cows." He quit



Jim Kellam aboard *Haulback*. He had just completed this year's Transpac as this issue went to press.

school at 16, moved west, and began logging in British Columbia's abundant forests. In 1979, he joined Seaspan, one of Canada's largest marine transportation companies, whose tugs and barges operate from Mexico to Alaska.

Jim served as crane operator on

"...he has plans for a 45,000-mile solo circumnavigation that will take about 27 months."

self-dumping log barges but sailed whenever possible. In 2001, when he sought a "slightly larger sailing platform," he opted for a fixer-upper boat to keep it affordable. He found the Spencer 35 Mk II, *Atari*. The original Spencer 35 was designed by John Brandlmayr in 1961; the Mark II about a decade later (see sidebar on Spencer Yachts, Page 10).

"She's an old cruising boat with longish overhangs, full keel with a cutaway forefoot and keel-attached rudder," he says, lounging back in his cockpit and stroking his neat, grizzled

beard. "But she has nice easy motion in a seaway and, although she may not exactly gobble up the miles, we will get there eventually." He bought the boat for \$51,000 (about \$35,000 U.S.), figuring upgrading it would double the initial investment. "She was basically sound and had a practically new 30-hp, three-cylinder Yanmar. I hauled the boat and spent about 1,500 hours over the next eight months on the refit." As a reminder of his work, Jim rechristened the boat, *Haulback*, a British Columbian logging term.

Of course, there are refits and refits. You can upgrade a boat for the occasional weekend cruise and a bit of harbor hopping. Or you can meet the requirements of an offshore race. The Singlehanded Transpac stipulates not only extensive sailing experience from the skipper, a well-found boat, and standard safety equipment, but also a long list

of special gear, including a life raft, single-sideband radio, a masthead strobe light, EPIRB, extra GPSs, satellite voice communication... the costly inventory goes on and on.

Secured sponsorship

To help pay for all this, as well as the entry fee of \$750, Jim approached Kyle Washington of the Washington Marine Group (which owns Seaspan) for sponsorship. Kyle liked the idea but decided it should be a company-wide adventure and invited Seaspan employees to participate. Jim's colleagues enthusiastically endorsed the concept of backing their own offshore racer and the company-cum-staff contributed \$30,000 (Canadian) toward equipping the Spencer.

Jim is pleased to have the Spencer 35 Mk II rather than the original Spencer 35. The later version was inspired by famous cruisers Hal and Margaret Roth, whose earlier Spencer 35, *Whisper*, added to the boat's reputation. But the circumnavigating couple had complaints, which led to a redesign of the sloop. Grant Brandlmayr, John's son, recalls the Roths' visit to Vancouver (they'd rounded Cape Horn) to solve some of the problems.

"Leaks along the teak toerail were a nuisance, so Dad designed a new

How Spencer Yachts began

SPENCER BOATS WAS FOUNDED IN 1952, in Vancouver, British Columbia, by John Brandlmayr, his wife, Patricia, and a long-term friend, Phil Hantke. John was born in Austria but grew up in Saskatoon. He studied mechanical engineering at the University of Saskatchewan. He had a long-standing interest in design and building of boats and aircraft.

Patricia bestowed her maiden name upon the boat-building venture — making the boats' names decidedly easier to spell — and the company began producing 18-foot plywood cruisers and runabouts. Pat administered the company — begun in the basement — while John developed a frame kit for sailboats and powerboats, allowing individuals to build their own fiberglass-covered plywood boats. The kits were popular, and several hundred units, ranging in size from 14½ to 46 feet, were sold.

In 1958, Spencer Boats produced its first 28-foot fiberglass sailboat hull laid in a female mold, thus becoming one of the earliest adopters of this new material. They were also among the first to use Airex coring in the decks. The Spencer 35 was next, to be succeeded by the 42. A 44-footer (a modification of the 42) introduced a center-cockpit version, followed by the 31 in a standard configuration. Both the Spencer 53 and the 1330 (a completely redesigned 44-footer and John's last design) were made available with an aft and center cockpit. Ferenc Maté in his 1982 tome, *Best Boats to Build or Buy*, wrote about the Spencer 1330 but had this to say about the yard: "Spencer has become famous in boating circles because of the quality of their construction, [and] the flexibility of their yard in accommodating the needs and desires of the owners ... Spencer excels in both structural and finishing construction."

Drew many boats


Phil Hantke, aided by Les McBurney, managed the shop and production, while John designed and also drew many other boats. So although John's name is most closely associated with Spencers, he created a fleet of other

vessels, including rowboats, custom sailboats and powerboats, fishing vessels, commercial vessels, ferries, and dredges. Today, the design shop, under the name "Brandlmayr Marine Ltd." is headed by John's and Pat's son Grant, a boat designer, who still sells the plans and is also developing a radio-controlled sailing model of the Spencer 35 in kit form.

John died very suddenly in 1974, at age 51, and Phil succumbed to illness shortly thereafter. Although these blows were severe, Pat continued her work with the company, aided by Grant, Les McBurney, and a group of skilled employees. On Pat's watch, the firm introduced the Spencer 34, the first design from the drawing board of another naval architect, Vladimir Plavsic. For a time, the company also produced Sun 27 sailboats for a brokerage, Specialty Yachts.

In 1982, a cruel recession drastically cut orders and forced the company to change direction. Shore Boat Builders, fabricators of aluminum boats, purchased the Spencer molds. They attempted to fuse the two technologies, producing a fiberglass hull and deck with an aluminum superstructure. Unfortunately, the aluminum and fiberglass processes and shop equipment were so different, Spencer production had to douse its sails for good.

The Spencers have had a bit of a rebirth. Bluewater sailors Malcolm and Darcy Wilkinson of Vancouver, British Columbia, once owners of a 1330, bought the aft- and center-cockpit molds of the Spencer 46 and 1330 in 1997. They created Spencer Yachts Ltd. and offer the four models with slightly revised details in both complete and kit forms. More information can be found at <http://www.spenceryachts.com/>.

Many Spencers are still happily afloat. Their solid construction and classic design have inspired several generations of yacht owners to sail their vessels on rivers, lakes, estuaries, and the open ocean. Spencers are flagged in Canada, the U.S.A., Denmark, the Netherlands, and the U.K. For a list of these happy owners, consult <http://www.spenceryachts.net/>. 

deck mold that integrated the toerail," he explains. "Dad also made the cabin longer and the cockpit shorter. A taller rig and squared-off rudder improved sailing ability as well. By the time we'd rebuilt *Whisper*, she'd become the Mark II."

Except for the engine, Jim revamped his 12,000-pound Spencer from stern to stern. He believes in simple systems but likes strength and redundancy. His first task was to haul the boat and strip the bottom. He carefully opened blisters, drained them, then filled the voids with cold-cure epoxy and mini-fibers. For the next two and a half months, the boat remained inside a heated, insulated tent, which dried the hull. While the boat dried, Jim ground out loose fiber

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around the rudderstock and rebuilt the area with fiberglass mat and epoxy. He changed the through-hull fittings. After fairing the hull, he applied three coats of Industrial Formulator S-1 sealer, followed by seven coats of Interprotect barrier coat and three coats of anti-fouling paint.

Shimmering blue

The hull above the waterline was also faired and primed, then it received a shimmering coat of baby-blue Endura polyurethane. He rolled gray Endura on the non-skid and embedded granules from International Paint to make the surface grippier. Large dark-blue numbers, advertising the hull's number (50), are painted on the trunk cabin, which also sports a coat of shiny baby-blue.

Jim dismantled all deck hardware, stanchions, pushpit, and pulpit and made them leakproof. New lifelines will help keep him on board and supplement the harness, tether, and jackline he uses when going forward during his offshore journeys. To make sure

The undercounter drawers, at right, have been extended to store tools. The corridor leading to the forepeak, below left, has been rebuilt to improve storage. Jim Kellam installed a two-burner Seaward propane stove, below right, and created fiddles to stow the dishes.

his winches can take the load during prolonged heavy weather, he glassed-in heavier winch pedestals. A Fleming Global Major 401 windvane steers the boat. A dual anchor roller was installed on the bow with a two-speed, 1,200-pound Muir Windlass controlling the rodes, chain, and two anchors: a 35-pound CQR and a 44-pound Delta.

The Spencer comes with teak-and-stainless-steel gallows but is designed with a fairly short boom. Jim extended the boom from 12 feet 6 inches to 16 feet 9 inches (see illustration on Page 12) with mid-boom sheeting and slab reefing. Naturally, that led to a new, larger, fully-battened mainsail with two deep reefs. He renewed the standing rigging and can transform the sloop into a cutter during offshore voyages by attaching a forestay and running backstays. During his circumnavigation, he will carry a 115-percent genoa, three staysails, a trysail, and asymmetric and Code Zero spinnakers, as well as 1.5-ounce nylon headsails for “running dead downwind.” Finally, a cold-molded hard dodger with Lexan inserts is solid protection in big storms and tough enough to carry Jim’s weight. Everything looks tidy, secure, and cared for.



Singlehanded voyaging

“You must understand,” Jim says before inviting me down through the off-center companionway, “that the interior renovation was designed for me and for singlehanded voyaging. The head, for example, was tiny, and the minuscule sink, walls, and door made me feel claustrophobic. So I ripped it all out and installed a Jabsco toilet in a more convenient location but left the space open to the corridor. No need for a door when I’m all alone.”

I note that Jim built storage shelves into the hull wide enough to hold cheerful plastic milk crates. Sturdy oak fiddles keep the boxes in place, but have extra protection from shock cord hooked into eye straps, with one cord doing double duty as a toilet-paper holder. The forepeak has been completely rebuilt, contains a new holding tank and serves as sail locker. Jim sleeps on the main cabin settee “on the low side” to avoid having to put up leecloths.

Stainless shields protect the main bulkhead against the high temperatures radiated by a Sigmar diesel heater, which gets its fuel from a 4-gallon day tank installed inside the head above the toilet. To freshen the interior’s look, Jim tore off the old vinyl liner covering

the deckhead, ground off the old adhesive, and installed white fiberglass panels with acrylic coating. “Those panels are used for walls in commercial freezers,” he explains.

The rest of the cabin is lined with pale oak and oak-veneered plywood, making for a warm, clean look. The galley has been rearranged to hold a two-burner Seaward propane stove with dishes neatly stowed above it. He wrenched out the power-gulping fridge but rebuilt the icebox surrounding it with 6 to 8 inches of glassed-in polystyrene, which makes ice blocks last for a week. He also removed the



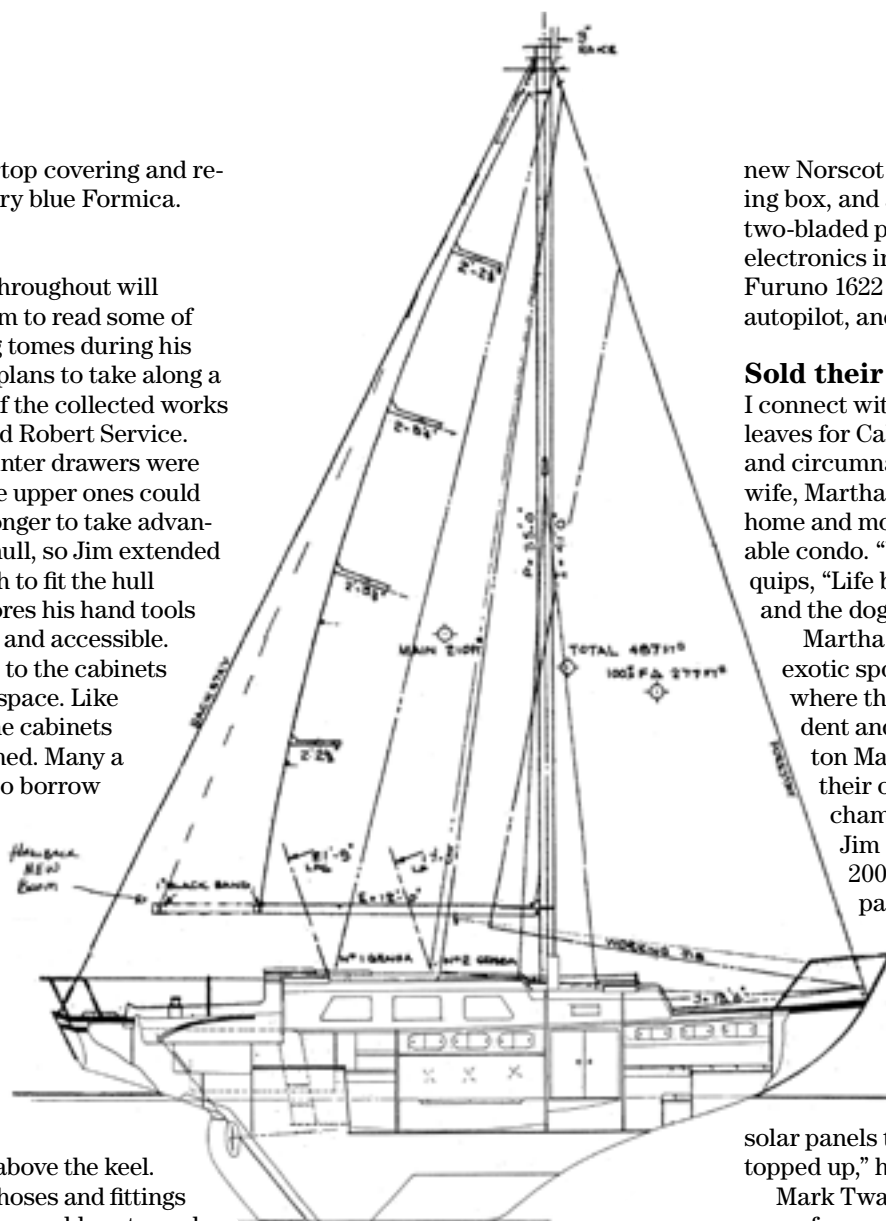
scratched countertop covering and replaced it with merry blue Formica.

Sailing books

New cabin lights throughout will make it easy for Jim to read some of his favorite sailing tomes during his voyage — he also plans to take along a compact version of the collected works of Jack London and Robert Service. All four under-counter drawers were short, although the upper ones could have been made longer to take advantage of the wider hull, so Jim extended the drawers' length to fit the hull shape and now stores his hand tools where they're safe and accessible. He added shelving to the cabinets to extend storage space. Like everything else, the cabinets are carefully finished. Many a sailor would love to borrow Jim for refurbishing a boat. He's a meticulous craftsman.

The same care has been lavished on the less visible, but equally important, furnishings. Jim cleaned the water tanks and fuel tanks carried in the boat's belly above the keel. Certified propane hoses and fittings substituted for 20-year-old parts, and a new sniffer monitors the bilge. He replaced all the wiring, choosing multi-stranded, shielded copper wire, and put heat-shrink insulation over the connectors.

Power is supplied by a 120-amp Ample Power alternator with a three-stage regulator which also monitors the twin 8-D Davidson gel batteries and separate starting battery. Among the other new and updated equipment are bilge pumps, water pumps, Racor filter/water separators, fuel lines, plumbing, a



new Norscot lubricated dripless stuffing box, and a Campbell Sailor fixed two-bladed propeller. Contemporary electronics include a Garmin 152 GPS, Furuno 1622 radar, Raytheon ST4000 autopilot, and ST40 wind instruments.


Sold their home

I connect with Jim just before he leaves for California to begin his race and circumnavigation. He and his wife, Martha, have just sold their large home and moved to a more manageable condo. "You know the old joke," he quips, "Life begins when the kids leave and the dog dies."

Martha plans to visit Jim in some exotic spots — when he figures out where those places are. The president and employees of Washington Marine Group, thrilled with their own blue-water sailing champion, again sponsored Jim and *Haulback* for the 2004 Singlehanded Transpac. He didn't do anything

too startling to the old girl this time around. "I added a Van Nav computer to support electronic charts and high-frequency email by SailMail. I also installed

solar panels to keep those batteries topped up," he says.

Mark Twain once wrote, "Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover." It's as if Twain wrote those lines especially for Jim Kellam. If he suffers any disappointments, it won't be because he feared the devil and the deep blue sea. 

***Haulback*, with its sparkling blue paint, at the Royal Victoria Yacht Club prior to this year's Singlehanded Transpac Race.**

Spencer 35

She's capable of cruising anywhere in the world in comfort

by Ted Brewer

WITH THIS ISSUE WE HAVE THREE YACHTS THAT ARE ABOUT as alike as peas in a pod — or peapods in Maine, if you prefer. Each is definitely of the old narrow-beam-long-ended school and all have husky displacement to boot. Interestingly, the seemingly great spread of displacement/length ratios, from 343 to 417, may seem extreme but it is really a matter of a mere 4 percent difference in displacement and 5 percent in waterline length, hardly extreme by any standards.

The differences in beam and draft are equally small. The major change is in the ballast ratio. The Spencer 35, with the longest waterline, is the most lightly ballasted of the three and, not surprisingly, carries the least sail area. Trying to handicap these three for a major race would be a real challenge as so much would depend on the hull's form and wetted area, the breeze, and the skipper's skill. The Spencer, with her longer waterline and smaller sail area, would not be at her best in light air, obviously, but how she would fare against the other two in average conditions or heavy air is anybody's guess. Jim Kellam's sail-area modifications are shown above.


None of the three will compete with a modern light-displacement, long-waterline, beamy auxiliary in all-around performance and, certainly, they will not go to weather like a fin keel/spade rudder performance cruiser. Still, when the going gets rough, I'd rather be aboard one of these husky old-timers than many of the modern lightweight beach balls.

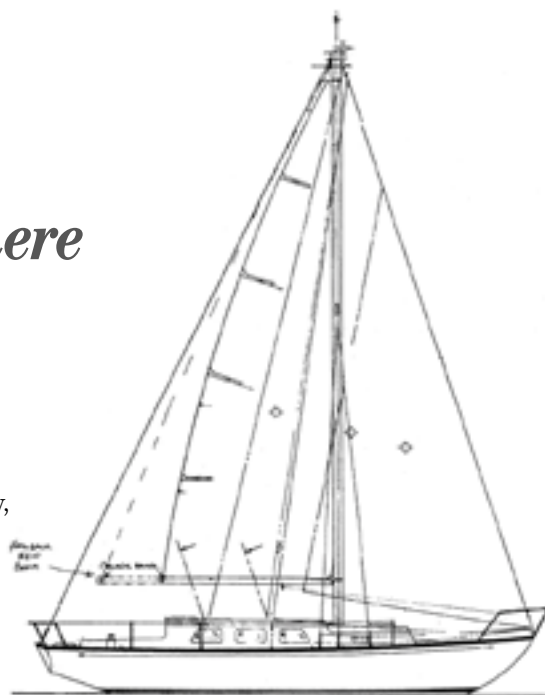
The comfort ratio of all three is very high for 35-footers, right up there with many contemporary 40- to 44-footers. So while the narrow beam might cramp their interior accommodations, any one of the yachts could well be the boat of choice to be aboard in heavy weather. She might be a bit

tight below, but she would have a relatively easy motion while the long

bow overhang should help keep the spray where it belongs. While on the subject of accommodations, I have to say that the Spencer's galley layout is one of the best I've seen on a boat this size. It's remarkably good considering her relatively narrow hull.

The capsizing screening factor of all three is also very low, thanks to the narrow beam and husky displacement of these old-timers. If capsized in extreme conditions, they would not remain upside down for very long due the narrow beam, good ballast ratio, and deep draft. In effect, they would be very unstable if inverted. However, all three have rather large cabin windows and — while this is great for a bright, cheerful interior — it's not desirable when that cabin is under water. A broken window would quickly fill the interior if any of them were capsized, and then the chance of righting them would be almost non-existent. The best answer is to carry a good set of storm shutters and fit them before conditions become serious.

Given that, and having all other parts of the yacht in first-class shape, there is no reason that any of these vessels cannot cruise anywhere in the world. They have what it takes to get you there and bring you back in safety and comfort. These yachts, and others like them, have been doing just that for many years. 



Spencer 35



Alberg 35



Bristol 35

	Spencer 35	Alberg 35	Bristol 35
LOA	35' 0"	34' 9"	34' 8"
LWL	25' 0"	24' 0"	23' 9"
Beam	9' 6"	9' 8"	10' 0"
Draft	5' 3"	5' 2"	5' 0"
Displacement	12,000 lb.	12,600 lb.	12,500 lb.
Ballast	4,500 lb.	5,300 lb.	5,200 lb.
Sail Area	487 sq. ft.	545 sq. ft.	531 sq. ft.
Beam/LWL ratio	0.38	0.40	0.42
Displ./LWL ratio	343	407	417
Bal./Displ. ratio	0.375	0.42	0.42
SA/Displ. ratio	14.9	16.1	15.8
Comfort ratio	32.8	34.6	33.1
Capsizing Screening	1.66	1.66	1.72
Designer	Brandlmayr	Alberg	Alden

The World according to

Freedom Yachts founder believes something's amiss in

by Dan Spurr

GARRY HOYT HAS A PASSION FOR sailing, there's no doubt. At Newport Rhode Island's Ida Lewis Yacht Club, to which he belongs, there is, down on the dinghy dock, one of the yellow-hulled Escapes he designed, ready whenever he wants to, well, escape. And up the western shore of Aquidneck Island at the East Passage Yachting Center in Portsmouth, there is an Alerion Express 28 ready to sail at a moment's notice. Sometimes there's an Alerion Cat and Alerion 38 yawl too.

If not a demo sail for a potential buyer, then perhaps an hour spent in solitude. It's a daily routine, like walking the dog. To be enjoyable, nay, even possible, short outings like this have to be easy. Getting underway quickly is paramount. With too many boats, "sailing" and "easy" are mutually exclusive. It's a beef Garry has had with the industry for years. For the last 25 he's been taking his crusade to the street, or the dock you might say, trying to interest John and Jane Doe in the sport. The essence of his sales pitch is to keep it simple, safe, small, and affordable.

Listen in:

We're sitting in Garry and Donna Hoyt's Newport R&D office at the Little Harbor complex in Portsmouth. After brief salutations, he begins the rant.

"There's a whole pool of used boats out there," Garry says, "which is great for the buyer. But in terms of new boats, there's not a lot of vitality in the sailing market. People are turning to powerboats. I think there's a lack of design innovation. Fiberglass is forever so there is an abundant supply of used highly durable objects that are going to be there forever, that don't have the good grace to rust away like cars do. The truth is there hasn't been a lot of progress in hull design. There's nothing wrong with a 20-year-old boat. You Awlgrip it, give it new sails and change the rig a little bit, and you're laughing because the price is much lower than a new boat. That makes it tough to sell a new boat. The market is very tradition-bound, which inhibits progress. I think the problem has to be solved with small boats."

All talk

Right now Garry is all talk, but he's also a man who gets down and gets it done. A former marketing executive, writer, talented salesman, and self-taught designer, he backs up his talk with boats. The line of rotomolded polyethylene Escape sailboats he designed for Peter Johnstone is one of the more recent milestones in his long quest to simplify sailing. Like the Expo Solar Sailer, on which he developed the color wheel that helps beginners figure out how to trim the sail for any given wind direction (more on this later).

On the office floor Garry rolls out drawings of his current projects. The first is of a boat called Volare (see illustration on Page 17) that looks to be a cross between the Laser and Sunfish. But each, according to Garry, is flawed. (And he ought to know, being a one-time world champion in the Sunfish.) "Catboats," he says, "suffer from weather helm, which throws the boat out of balance. Anytime you put up a big sail on one side, you've got weather helm. What I've done," he says, pointing to the assemblage of pipes and fittings that support the Volare's sail, "is try to get a clean leading edge on a fully battened sail (*concept drawing shows short battens. -Ed.*) using the lateen rig." The advantage of the lateen rig is that some of the sail area is to windward of the mast, improving balance. To test the idea, he worked with John Harris at Chesapeake Light Craft,

The boat that started the Freedom line was the Freedom 40. Garry Hoyt sailed the prototype in the Virgin Islands for a few years, challenging all comers to a race. He put up \$5,000, but there were no takers. TPI, builder of all Freedoms when Garry owned the company, began production of the 40 in 1977.



Hoyt

the sailing world

makers of high-quality plywood kayak kits, to build a 15-foot prototype.

Planned for plywood

"It certainly is an irony," he says, "that the Sunfish and Optimist, the most popular boats of all time, were both conceived for plywood. Plywood is ideal for flat surfaces... and the best surface for planing is a flat bottom."

He's got plans for the Optimist too. It's one of the country's most popular sail trainers for junior sailors. "I feel we need a better boat than the Optimist," he says. "After all, it has a square bow. I've never seen a fish with a square nose. It's just not the right shape. It was dictated by the practicality of the plywood construction, which is excellent for that. But now we have fiberglass. Fiberglass doesn't like flat. It likes curved surfaces."

Garry believes the key to getting new people into sailing is giving them the thrill of singlehanding a small planing boat. Handling sheets for someone else just doesn't do it. But what boat?

"If you're 9 years old you're stuck with the Optimist. Your next jump is up to a Laser, which is almost unmanageable until you're stronger. So what do you do with a 9-year-old girl, who is probably better than the boys? Well, the Optimist is a great boat, and there's great competition, but you can't plane so you've got to go into a (two-person) 420 or something else."

That something else *could* be a boat of his own design he calls the Escape Express, with a square-topped mainsail. "With this you unfurl the sail and you're underway. It's a bridge boat that would give the yacht clubs and their youngsters a singlehanded boat that planes."

That cursed genoa

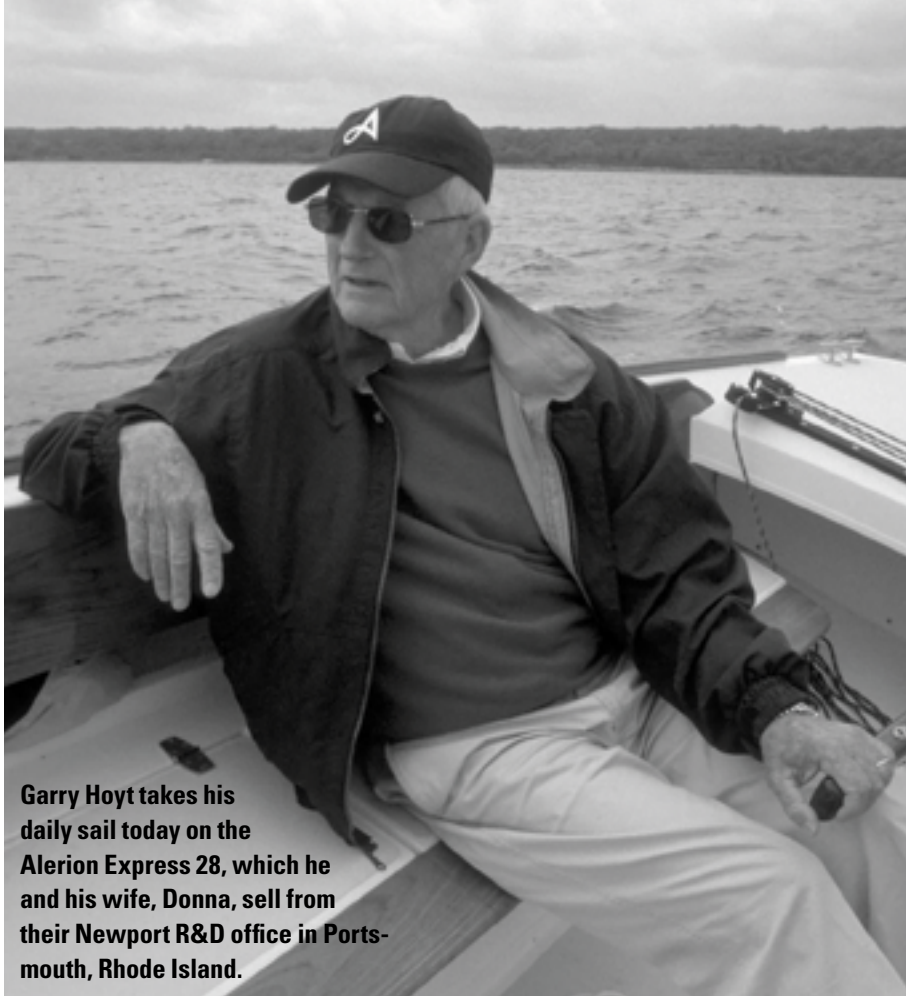
Garry thought the title of a September 2002 article in *Sailing* magazine should have been "The curse of the

genoa jib," rather than "Why the genoa is not a cruising sail." It's a measure of how intensely he feels about the problems caused by genoas, one of the major reasons, he believes, that sailing is more difficult than it need be. Their size makes them difficult to trim; the high headstay tension required to keep them from scalloping puts huge loads on the hull; their size often doesn't match wind strength, requiring cumbersome sail changing (even a genoa on a furler has a limited range of effectiveness); and off the wind their shape is necessarily poor. Garry throws a pile of magazines at me, opening them randomly to photo after photo of genoas luffing and twisting.

"It's on every page," he says with agitation, "but no one sees it. It can be discouraging." He says he'd be satisfied if his legacy was "only for people to put Hoyt Jib Booms on: they'd sail faster, they'd sail easier, and it would be a great thing."

It also would make him a little money to help cover the cost of his prototypes, but more importantly, it would validate his ideas.

Garry advocates rigs with larger mainsails and smaller working jibs. If the boat is designed with this rig in mind, there is minimal loss in speed.



Garry Hoyt takes his daily sail today on the Alerion Express 28, which he and his wife, Donna, sell from their Newport R&D office in Portsmouth, Rhode Island.

The fastest boats in the world, he points out, have small jibs. "And the very fastest," he wrote in *Sailing*, "— iceboats and windsurfers — have no jibs at all!" The patented Jib Boom makes the headsail self-tending, like a club, but it does one important thing the club doesn't, and that is make the sail also self-vanging. "The Jib Boom does for the jib what the vang does for the mainsail," he concludes (see photo on Page 16).

Bob Johnson bought the argument, and now every Island Packet comes factory equipped with a Jib Boom.

Battling traditions

But old habits die hard. Garry knows that; he's spent half his life battling traditions.

The AeroRig inspired Garry to find another and different way to solve the curse of the genoa jib. His variation is called the Hoyt Balanced Rig (see illustration on Page 16).

The AeroRig, developed in the United Kingdom by CarboSpars (now out of business) and built and distributed in the U.S. by Forespar, is essentially one long boom that extends forward and aft of a rotating, free-standing mast so that both the headsail and the mainsail are set on it and can be trimmed by a single sheet.



It's a wonderful idea," says Garry, "but so cumbersome and heavy it almost defeated the purpose. I really liked the AeroRig's balance when I sailed on it. The feel of the helm, the way it jibes softly. You have balanced rudders (where part of the rudder extends forward of the rudderstock to balance and reduce loads), why not a balanced rig?"

As with most things having to do with sailing, Garry saw ways to improve it.

So he said to himself, "What if I take this idea in another direction? What I didn't like about the AeroRig was they rotated the whole rig, which means you need a massive bearing at the mast step. And they have a backstay to get headstay tension. With the Hoyt Balanced Rig the mast is fixed, and the wishbone boom rotates around it."

The wishbone boom, which would be made of carbon fiber, is self-vanging, which means it tensions the leech of the sail automatically. This eliminates the need for a backstay to tension the rig and allows a full-roached, fully-battened mainsail. The wishbone also helps contain the sail when it's dropped, rather like lazy-jacks.

So far Garry hasn't built a prototype or found a builder willing to try it. But he's hopeful.

Hoyt's background

Garry Hoyt was born in Elizabeth, New Jersey, and grew up in Plainfield. His family summered on Barnegat Bay, in Tom's River. He started sailing in a Barnegat Bay Sneakbox and later raced with his brother in the Snipe class. He liked to win. In high school they placed third in the Snipe Nationals. He went to college at Colgate, then on to a business school out west, in Arizona, called Thunderbird. "It was a school for foreign trade, basically," he says.

After college he joined the U.S. Coast Guard. "That was good," he says, "because the Coast Guard gave me a whole lot of management responsibility early. I was executive officer on

one 165-foot cutter and got to do all the ship handling there. And on occasion I was skipper of an 83-foot cutter, search and rescue, berthed out of Key West and then out of St. Thomas. And based in San Juan for a while.

"Then I went back to work for an advertising agency, Young & Rubicam, Inc. Earlier I spent a summer in Mexico where I started learning Spanish. Then Young & Rubicam opened an office in San Juan, and I was sent down there. I shifted from being a traffic man to the creative side, so I was a writer and an art director. Subsequently I became the creative director there. Creative director and director of Y&R's office for Latin America. And then director for their

"The market is very tradition-bound, which inhibits progress. I think the problem has to be solved with small boats."

offices in the Far East, which included Australia and Japan. Also in charge of Chicago, Detroit, and San Francisco.

"I did a whole lot of traveling back then, but mostly I was in San Juan. I kept a boat, and all the time I was sailing on the weekends. Sailing with another fellow, we got third in the Snipe Worlds. Sailed a Finn in the Mexico Olympics (1968) ... got tenth. Third in the Finn North Americans. Then I won the Sunfish World Championships in St. Thomas.

"Then I shifted over to cruising boats because I saw that I couldn't hike very well anymore because I was getting old — creaky back and all those things. So I had big boats — first a 58-foot Alden Schooner.

The Hoyt Jib Boom, above left, appears as standard equipment on Island Packet Yachts and on the Alerion Express 28s sold by Garry's company, Newport R&D. Garry Hoyt's improvement of the AeroRig is the Hoyt Balanced Rig, at right, in which the mainsail track revolves around the mast. Both systems use a single, continuous boom on which both the mainsail and jib are tacked. Jibes are gentle. One sheet controls both sails.

Then a 52-foot Herreshoff ketch called *Mandarin*. Then I developed the Freedom 40."

Origins of the 40

Garry is fairly circumspect about the origins of the boat, perhaps because he's tired of telling the story or perhaps because he's more interested in tomorrow than yesterday. But here it is, in a big nutshell.

Unstayed masts are nothing new. Early American working watercraft, like the New Haven sharpies, and recreational boats, such as the 19th century Barnegat Bay catboats, had no stays holding up their masts. Garry, no doubt, was familiar with these boats. So on an airplane one day, as the story goes, he was looking out the window and studying the wing, thinking to himself, "If this wing can be supported without all those wires and turnbuckles and terminals, why can't one build a sailboat mast without wires?"

The prototype Freedom 40 had big, round, unstayed aluminum spars. Soon Tillotson-Pearson Industries (TPI) found that a better method was winding carbon fiber on a mandrel and setting it in resin. The few early failures were quickly replaced and within a few years they had a reliable product.

To minimize turbulence caused by the large diameter spars, wraparound sails were used, though they were heavy and made reefing problematic.

The platform on which Garry installed the freestanding cat ketch rig was a long, shallow hull designed by Halsey Herreshoff.

The first Freedom 40,



launched in 1977, had a centerboard. And she had no engine. Garry called an auxiliary engine a “Freudian fixation, a petroleum boo-boo.” He fitted the boat with 16-foot sweeps instead. In an early brochure he wrote, “Hell, if you’re not careful you might even build a muscle or two. The really nice thing about oars is that you have total control. You can go forward or back, or spin in place — and there is no fuel, no noise, no smell, no hassle, and no cost. And that’s freedom, mon!”

Made new start

In 1980, Garry quit the advertising business and decided to make a new start by founding his own boat company. But when the design went into production, engineless boats proved to be a tough sell, and he was forced to offer an engine as an option, though he admonished, “But we don’t approve!”

To promote the boat, Garry drew on his advertising savvy and came up with a provocative challenge: he offered \$5,000 to anyone who could beat him singlehanded in a 40-foot cruising boat on a triangular course. He knew his Freedom 40 wasn’t the fastest boat upwind, but she smoked everyone on a reach. The gambit paid off: no one ever challenged, and he got a lot of publicity.

Unfortunately, at least as far as Garry is concerned, the production version of that first boat differed in several significant ways. People at TPI, which built the Freedom line in Warren, Rhode Island, didn’t think a heavy centerboard was such a hot idea, so it was dispensed with in favor of a lighter board and deepening the keel by a foot. And when an engine was added, with a prop in the aperture, the result was a heavier, slower boat. “I made the mistake of listening to the production people,” Garry says.

Nevertheless, the concept appealed to enough people that Garry sold 85 in the U.S. and 25 more in England, which was sufficient encouragement to develop a complete line of Freedoms: the 28, 33, 40, and 44 cat ketches and the smaller sloops at 21, 25, 29, and 32 feet. In 1981 a Freedom 44 won the Bermuda One-Two Race as did the F-32 later. A special three-masted Freedom 65, built in the U.K. by Fairways, entered a double-handed transatlantic race in preparation for the BC Challenge round-the-world race. Skippered by Laurel Holland and John

“‘Catboats,’ he says, ‘suffer from weather helm, which throws the boat out of balance. Anytime you put up a big sail on one side, you’ve got weather helm.’”

Oakley, the boat showed speed on some points of sail, but one of the mast steps came loose, and the crew was forced to depower the boat in order to finish the race with the sticks intact. It was a disappointing conclusion to a campaign that had a lot of people anxious to see how Garry’s radical rig would fare over a long passage with varied winds.

Jibless rig

The first of the sloop group was the Freedom 25 rigged with just a main-sail, followed by the 21. Each came with the patented Hoyt Gun Mount, which enabled one to set a spinnaker on a “yard” without leaving the cockpit (see photo on Page 19). Because the sail was attached to the yard at both the tack and clew, one could actually sail the boat in circles without touching the sheets (I did this in Newport Harbor with Garry’s son, Jeff, some 20 years ago). The spinnaker will backwind, and if you like you can sail backward or hold the helm over until it fills again on the right side.

Eventually, however, Garry was obliged to admit that without headsails, the boats were slow upwind, so what were called vestigial jibs were added. And to avoid the curse of the genoa (or any headsail) off the wind, he fitted each with one of David Bierig’s Camberspars, a curved aluminum strut that makes the sail self-tacking and self-vanging.

By 1985, Freedom Yachts was in good shape. “The company was pretty successful then,” says Garry. “We were up to \$9 million in annual sales.

Garry Hoyt, a former world champ in the Sunfish class, seeks to improve on this old and popular design with the Volare’s more modern hull form. Because catboats tend to develop severe weather helm, the lateen rig keeps the sailplan’s center of effort closer to the boat rather than far out over the water.

Back then that was pretty damn good. At that point I sold it to TPI, who thought they could do it better. But I don’t think they did and in any case couldn’t make money at it. So they sold to a company which now concentrates on powerboats. That is regrettable because I happen to believe that the free-standing spar has merit. It’s never going to run the whole market, but it has a branch that I think has been neglected.”

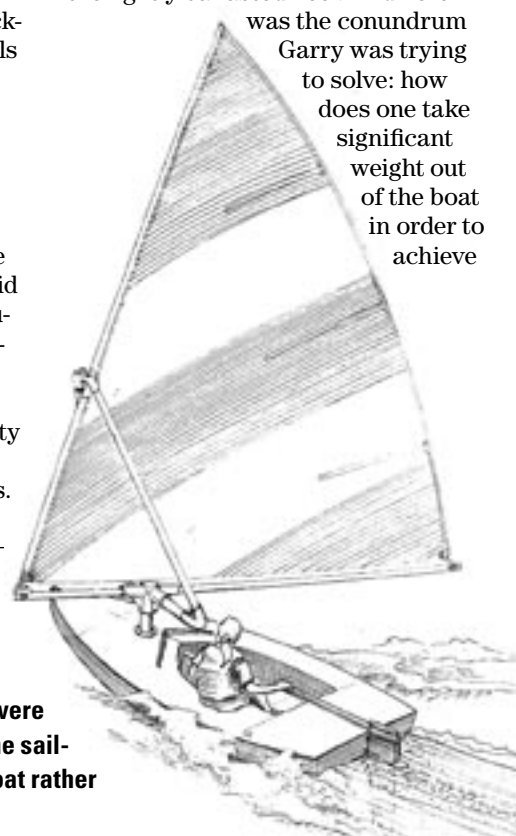
One of the problems, Garry says, was that “they tried to bring Freedom into the middle of the road.” But *that*, he notes wryly, “is where you get run over. The big tree trunk of a mast ruined the windward performance, despite good designers (like Gary Mull and David Pedrick). They created a freestanding sloop with no discernible advantage over a regular sloop.”

Interesting projects

Following the sale of Freedom, two of Garry’s more interesting projects were the Delta 26 and Manta. The Delta 26 featured a mast in the rear, plus the Hoyt Gun Mount for the spinnaker.

The lightweight hull had winglets above the waterline for crew to hike out and help keep the boat sailing level. This was necessary due to the lightly ballasted keel. And here

was the conundrum Garry was trying to solve: how does one take significant weight out of the boat in order to achieve





superior performance, yet maintain necessary stability? In the end, the Delta 26 was simply too tender.

But the rig concerned Garry more. “Had I had my self-vanging boom then, the rig would have been a lot better. It would have made the rig manageable off the wind. I penalized that rig with a radical hull with wings. It doesn’t pay to look odd.”

A somewhat different approach was taken with the Manta, a 30-foot cross between a monohull (with small, lightly ballasted keel) and a multihull, with quasi-amas resting on the water to provide additional stability. The Manta also had an A-frame mast and a large cockpit for entertaining. It was much more stable than the Delta 26, but much to Garry’s chagrin, she was far slower than he anticipated. Later he confessed that he’d been seduced by computer-generated performance predictions. “It was a case,” he said, “of ignoring instinct and going with the numbers. I’ll never do it again.”

No commercial success

He adds, “It had wonderful comfort, however, and it had the A-frame mast which I have to believe is a good idea because it offers great security plus a clean leading edge for the main. When you think about it, two furling sails, two clean leading edges — what’s wrong with that? But it’s not fashionable. It’s a marketing handicap. No one wants to spend their money trying to convince people it’s a good idea. It does take money — and nerve. Nerve and money are a little short in the sailing world. And probably for good reason. It’s not a profitable business. Anyway, we penalized a good concept by an outlandish-looking boat that didn’t perform to expectations.”

In 1995, with the introduction of the Expo Solar Sailer, Garry began turning to small boats as the key to getting more young people inter-

Always willing to experiment, Garry Hoyt designed a rotating oval-shaped rig (built of wood by Goetz Custom Sailboats) to achieve a clean leading edge for the sail, resulting in much less turbulence. The hull was a prototype of the “Escape shape,” in which he pulled the chine down to the waterline for improved stability. Salvador Dali might have done the same purely for artistic purposes.

ested in sailing. With a small electric motor and solar panel to keep the battery charged, he hoped that beginners would feel more confident venturing out alone, knowing that if the wind piped up they could simply furl the sails and turn on the motor to get them safely back to the dock. Ted Hood designed the hull, Garry designed the rig, and Everett Pearson built it at TPI.

At the Newport Navy base, Garry conducted a controlled experiment using the Expo Solar Sailer and 30 women. His aim was to determine how quickly he could teach someone to sail. The goal was 90 minutes. Each woman was shown a video and then put in the boat with a set of radio-phones to communicate with a coach onshore. They motored out, unfurled the sail, tacked, furling the sail, and returned to shore. Then they did it without the radiophones, sailing a triangle course four times.

Color wheel

“The mainsheet is divided into color sectors,” he explained. “If the wind indicator is in the blue sector you trim until the mainsheet jam is in the blue sector. And we had a big red sector that we called the ‘no go’ zone; that’s when you’re pointed into the wind. And the duck zone — the jibe zone. We had it all covered.

“They all did it,” he says proudly. “They could go home and say, ‘I sailed today.’”

But it didn’t set the world on fire. “My theory, naive at the time,” he says, “was that community sailing people and sailing school people would flock to this idea because we’d proven it could be done quickly. All of a sudden I realized they didn’t want to do it quickly because they had a vested financial interest in extending, instead

of compressing, the process. So I was trying to make it shorter, and they didn’t want to hear that at all. As a matter of fact, they went out of their way to tell me what a lousy idea it was. As I look back on it, I understand it. It’s a lot more complex to handle an individual boat than it is to put five students and an instructor on a keel boat. So the idea went nowhere.

“And the boat was pretty expensive — \$6,000. Because it had batteries, it was heavy, so you needed a trailer. It was a nice little boat, but perhaps not the best idea. We sold about 100 of them. We still get calls from people who want one. But there’s no way the sailing schools are going to buy one. And I suppose if I were running a sailing school, I would have looked at this idea and said, ‘Why is this a good idea? Are you trying to put me out of business?’”

Glass pedal boat

About this same time Garry collaborated with Harken Yacht Equipment, makers of sailing hardware, to develop the 9-foot 3-inch Waterbug, a tear-shaped fiberglass pedal boat. It had a space-age look with a cockpit

canopy similar to a fighter jet. To get the most speed with the least amount of energy expended, Harken built a two-speed drive unit with 1:3 and 1:4 gear ratios turning a three-bladed propeller.

In 1996 Garry designed the first Escape, the low-

cost rotomolded, polyethylene boat with a single sail on a Hoyt Jib Boom and the same color wheel for determining sail trim as was used on the Expo Solar Sailer. (“You should start with a single sail,” Gary is convinced. “They would never put a pilot in a twin-engine plane to start off.”) Nine- and 11-foot models followed the original 12-footer. Peter Johnstone of the

“No one wants to spend their money trying to convince people it’s a good idea. It does take money — and nerve. Nerve and money are a little short in the sailing world.”

J-Boat family of Johnstones commissioned the design. At the time, he owned Sunfish-Laser, which he later sold to Vanguard. And once he got Escape established,

he sold that to the Leisure Life division of Johnson Worldwide, the conglomerate which, among many other things, makes Old Town canoes and pedal boats <<http://www.LLBoats.com>>.

As noted, Garry's design energies are absorbed in the Volare and the Escape Express projects plus new rig concepts. Garry and Donna manage Newport R&D, marketing and selling the Alerion line of boats. The first, the Alerion Express 28, is a Carl Schumaker remake of the famous Alerion designed by Nathanael Herreshoff. In the late 1990s TPI expanded the line with the addition of the 19-foot Alerion Cat, the Alerion 20, and Alerion 38 yawl, but only the 28 can be considered a success. TPI stopped building the catboat because they said they weren't making any money on it, but Garry thinks he's found another builder. He'd love to put his Hoyt Balanced Rig on it.

Expensive prototypes

"When trying something radically new," he says, "you have to do a prototype. But prototypes are expensive. And you have to modify the prototype because rarely do you get it right the first time. Who's going to spring for that cost? No builder wants to. An America's Cup effort spends millions to get 1/20th of a knot. You've got four or five syndicates spending \$50 million each. They talk about the trickle-down benefits, but c'mon, for the average person the trickle-down is really just a


"You've got four or five syndicates spending \$50 million each. They talk about the trickle-down benefits, but c'mon, for the average person the trickle-down is really just a trickle."

trickle. It kills me to see that much money available for that sort of thing, and there's no money available for small boat development to improve sailing."

The rant never really stops. Garry has something to say about every aspect of sailing. His energy and motivation are impressive. Spend an hour listening to him, and you come away thinking Garry Hoyt has got it right, and the rest of the world is wrong. He's logical. He's precise. He's well-spoken. He's convincing. But as time wears away, you begin to realize that other points of view are as valid. He knows it; it's just the marketer in him that he can't help.

And his legacy? Surely it will be that he rattled the cage, raged against convention, spoke out against the staid and status quo, that he proposed new and different and often better ways to sail. For Garry, that's what all this reduces to: the simple pleasure of sailing.

"People look at failure and say, 'Well, you failed.' But if you're not failing, you're not trying."

No one will ever accuse Garry Hoyt of not trying. That, and his many successes, will be his legacy. 



Garry designed and built the Delta 26 with the mast aft and two stays forward so that both the jib and staysail, set on furlers for convenience, would enjoy clean leading edges. The Gun Mount fitted to the bow pulpit enabled setting spinnaker from the cockpit. The winglets provide outboard seating for the crew where their weight contributes to stability. The boat is featured in his 1986 book, *Ready About!*

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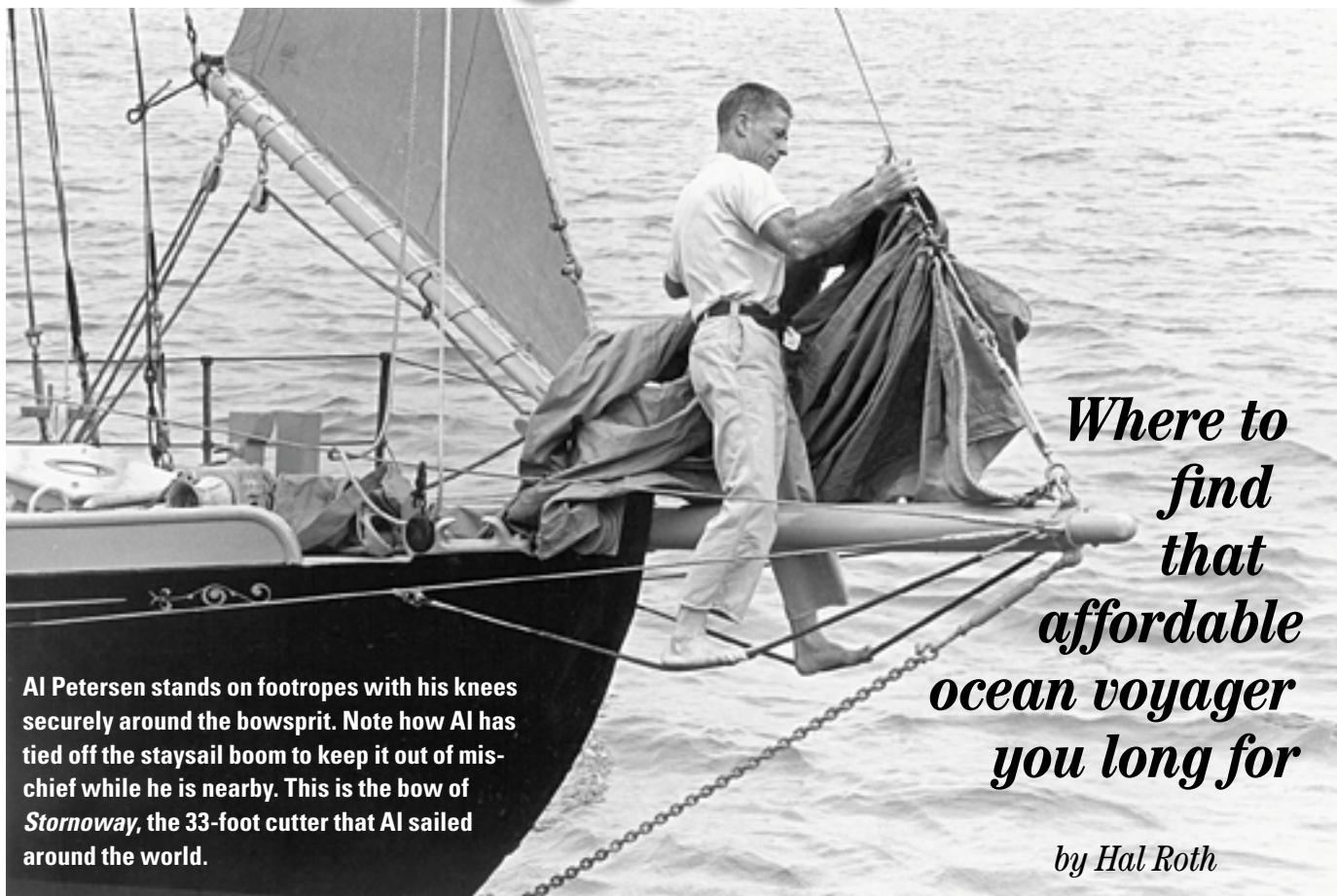
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by Hal Roth

Al Petersen stands on footropes with his knees securely around the bowsprit. Note how Al has tied off the staysail boom to keep it out of mischief while he is nearby. This is the bow of *Stornoway*, the 33-foot cutter that Al sailed around the world.

THERE ARE THREE SOURCES OF MODERATELY PRICED CRUISING YACHTS: ex-racing boats, ex-charter boats, and secondhand cruising yachts.

The first category is yacht racing, the game of trying to outsail a group of similar vessels around a set of buoys or competing with other boats from one point on a coastline to another, usually for an afternoon or for a day or two. Yacht racing is responsible for enormous improvements in sails, winches, foul-weather clothing, and the general streamlining of boats above and below the water. Yet I don't believe the artificial standards of racing yachts are a logical way to find the best vessels for the sea.

Racing-boat designs have long been based on faddish racing rules that produce groups of similar yachts designed to compete with one another like horses on a track or greyhounds on a racing oval. The important things for racing boats are speed and a low rating. If it's a one-design class, the emphasis

is on sailing tactics and yacht gear. Hovering on the edges of all this are the naval architects and boatbuilders, who have a direct financial stake in winning yachts. A winner sells best.

“The hull, deck structure, keel, rudder, and rig will last for decades — unless they're terribly abused and neglected.”

Racing criteria

What have been the guidelines of racing in past years?

When the racing criterion was waterline length, the bow and stern overhangs became excessively long and unseaworthy. The overhangs meant that when the yacht was heeled in a breeze, her immersed waterline was longer and she sailed faster. Yet her rating was

based on her waterline length when measured sitting upright at a dock.

When the racing criterion was fixed sail area, the naval architects drew plans for high and efficient sailing rigs on light hulls with heavy keels to give stability to the tall rigs. Since the sail area was critical, the designers read the rules with the intensity of Supreme Court justices and took advantage of every loophole in the rules, particularly with regard to unmeasured sail area.

When the racing criterion was displacement, the builders produced lightweight, fragile hulls that would go fast in light to medium air. In strong winds the yachts stayed home. If they attempted heavier weather, they sailed at risk and broke apart, as have recent entries in the America's Cup competition.

When the racing criterion is based on overall length, the designs feature ugly-looking plumb bows and sterns to maximize waterline length. When this is combined with no restrictions on

come true

beam and only lip service to self-righting regulations, the results seem good at first but end up being dreadful. The current yachts in the Around Alone and Vendée Globe singlehanded races are extremely beamy and use the weight of water ballast tanks, canting ballast keels, or both to balance an enormous amount of sail that powers the boats to incredible speeds.

Stable upside down

Unfortunately, these ocean racers are not self-righting and float nicely upside down, a deplorable trend that's caused half a dozen widely publicized sailing disasters. Personally, I think the designers and race organizers should be put in jail. It seems to me that the first responsibility of a naval architect and a race sponsor is to get the crew home alive.

The result of all this competitive sailing is that yacht brokers have plenty of ex-racing boats that have been outmaneuvered by the rules. Yet these boats are available and perfectly good for less intensive, non-rule-oriented sailing. And they're much cheaper than a new yacht that's specially designed and built for long-distance voyaging.

An aging thoroughbred can still make reasonable time around a track, but just as a veterinarian checks a horse, a tough surveyor should evaluate a used yacht, no matter what her history and her seller's claims.

Unlike a used car, the mechanical aspects of a yacht account for only a small part of its value. The hull, deck structure, keel, rudder, and rig will last for decades — unless they're terribly abused and neglected — particularly since 90 percent of present-day boats are constructed of fiberglass and have aluminum spars. The engine, sails, head, and electronics may need attention, but these things can function at three-quarters throttle for years. If the electric wind-direction indicator doesn't work, it's not the end of the world. Like me, you can always put a meter-long red ribbon on a pivot at the top of the VHF antenna at the masthead.

Racing yachts tend to be lightly built, and the cockpits — sized for a big crew — may be large and able to

hold too great a weight of water for ideal safety at sea. The accommodations, galleys, and chart tables of racing boats are often poor to marginal in order to save weight. Because of minimal joinerwork, the stowage spaces are undeveloped for all the supplies and spare parts that cruising vessels carry. You may need to build in drawers, cupboards, and lockers, but these can be added gradually.

Since a used racing boat represents a smaller amount of material and labor and was built under rules that may be going out of style, her price is lower. In August 2003, I could buy a 5-year-old 35-foot fiberglass racing yacht for \$99,000 (new cost: \$150,000 to \$160,000). If I chose a 1985 model — 18 years old — I could spend as little as \$55,000, according to one magazine.

"Personally, I think the designers and race organizers should be put in jail. It seems to me that the first responsibility of a naval architect and a race sponsor is to get the crew home alive."

Charter boats and wrecks

A second source for a less expensive cruising yacht is a charter company. Old charter boats are cheaper because they've been heavily used by a succession of short-time customers who hired the yacht for one or two weeks at a time. Charter boats come from the factory generally lightly equipped except for upgrades in anchor windlasses, increased freshwater tank capacity, engine-driven refrigeration systems with stainless steel holding plates, and more durable cabin soles and companionway steps to take the wear and tear of many people.

In a single year the engine, sails, winches, head, galley stove, and seat cushions get plenty of use. Often a charter company serves as the agent for a private party who owns the yacht and leases it back to the charter com-

pany, which pays the owner a negotiated fee based on usage. The charter company takes care of all maintenance and berthing and makes the vessel available to the owner for 5 to 6 weeks a year (sometimes up to 14 weeks).

A typical bareboat yacht is chartered for 27 to 30 weeks a year for 5½ years, after which she is sold. During much of this time the charterers push the vessel hard because they want to go to as many places as possible. Perhaps some 600 people will have lived on the yacht for short periods. It's just the opposite with private owners, who use a vessel much less intensely.

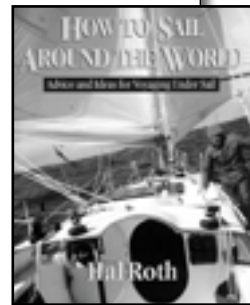
After a few seasons of chartering, the boat tends to lose her luster; the gelcoat on the hull becomes chipped from banging into docks and other yachts. The paint and varnish look grungy; the white sails become gray and baggy. Compare a taxicab with your own automobile. Which would you rather own?

Certainly an ex-charter yacht needs to be surveyed. If the inspector finds a problem, it may be smart to get another opinion from a second surveyor or a boatyard manager. The hull should be checked at close range, from a distance, and from all angles. A 4-foot flexible batten can be run up and down the outside of the hull to spot old wounds. There's nothing wrong with a repaired hull if the problem has been dealt with properly. However, hull repairs should be thoroughly looked at inside and out — even if the surveyor has to take some ceiling or joinerwork apart.

What's available? Start telephoning the charter companies. Check their websites. Be prepared to fly out at once to inspect their offerings. If you're

For further reading...

This article was excerpted from Hal Roth's newest book: *How to Sail Around the World: Advice and Ideas for Voyaging Under Sail*, published by International Marine in 2004. A three-time circumnavigator, Hal speaks with the authority born of experience. This book is available at <<http://www.goodoldboat.com/bookshelf.html>> or by calling 763-420-8923.



handy with tools and a paintbrush, the prices of retired charter boats can be attractive because used boats change hands for about half the new price.

Discount 30 percent

A new 35-foot Beneteau, with tax and a few extras, costs about \$130,000. The price of a five- to six-year-old Beneteau from a private owner on the open market is about \$95,000. However, you can purchase a five- to six-year-old Beneteau from a charter company for \$65,000. This is \$30,000 — or roughly 30 percent — down from the open market and a 50 percent discount from the new cost.

If you find something you like, fly in your own surveyor (not the charter company's). Often when a company decides to sell, they want to do it quickly and without fuss. Time and cash offers are generally the buzzwords, and you'll have to take her away from the company dock in a few days. This works against many purchasers, who like to poke around and think about a purchase for months and are not used to flying to distant locations and doing business quickly and for cash.

The buyer of a small charter boat should put aside \$13,500 for the following:

- survey (\$500)
- engine overhaul (\$2,000)
- new galley stove (\$1,000)
- replacing some or all of the standing rigging (\$3,000)
- new sails (\$5,000)

"I would have no hesitation about offering the owners a nice lunch or the payment of \$75 or \$100 for them to take me out for a couple of hours, particularly if I do all the string pulling."

- painting and miscellaneous (\$1,000)
- haulout and bottom painting (\$1,000)

Insurance write-offs

Yachts that are damaged by hurricanes or other causes and sold by insurance companies are in the same category. Often an underwriter will sell a severely damaged vessel cheaply because of the cost of getting her to a boatyard and making difficult repairs that an owner may challenge. Such sales are usually on an "as is, where is" basis.

Sometimes this gives a person who is a hard driver an opportunity.

Some years back, the renowned sailor and author, Don Street, anchored his 44-foot wooden yawl, *Iolaire*, in Lindbergh Bay on the south shore of St. Thomas in the Virgin Islands. Don thought the bay was sheltered, but a 30-knot weather system blew up from the east. An associated southeast swell hooked around nearby Water Island and swept into the bay.

Don learned that his vessel had been driven ashore. He rushed to the

bay and found *Iolaire* on her side near the beach in three feet of water. Initially she was OK, but attempts to pull her into deeper water failed. She was soon holed and filled with water.

Iolaire's port side was a mess; there was a hole large enough to crawl through that measured 8 feet long and 3 feet from top to bottom. Attempts to jack her upright would have destroyed the hull. A simple grounding had turned into a disaster.

The insurance adjuster took one look and declared the yacht a total loss. At the same time the manager of the hotel in Lindbergh Bay demanded that the wreck be removed from the beach at once. The insurance company wanted closure, so Don bought the vessel "as is, where is" for \$100, with the responsibility for her removal.

Stripped interior

Don borrowed two ship jacks from a boatyard and rounded up a collection of wooden blocks and short 2 x 4s and 4 x 4s, plus a number of large wooden wedges. Then, together with friends, he stripped out the interior joinery of the yacht and quickly knocked together several stout athwartship X-frames in the interior to keep the hull from collapsing. Using wooden supports, jacks, and wedges (driven with a 10-pound sledge), and pushing against the outside planking where it was supported by the X-frames, Don and his helpers gradually raised the hull from 50 degrees to a vertical position. For-



A broken spade rudder on an Islander 37, at left. This rudder came with a new yacht made by a supposedly reputable company. In spite of naval architect Bill Tripp's careful drawings that showed a heavy-walled stainless-steel pipe the full length of the rudder, the builder substituted an appalling iron weldment. Externally, the rudder looked perfect, with the required rudderstock disappearing into a carefully



streamlined fiberglass-covered foam section. Just below the surface, however, there was no strength at all against the stresses of sailing, and the first time owner John Warren took his new yacht, *Beyond*, into the ocean, the rudder folded up like a piece of cardboard.

tunately, the weather remained calm.

To patch the hole, the men used ordinary 3-inch-wide, 3/8-inch-thick tongue-and-groove boards placed horizontally. The workers painted the edges of the hole with roofing tar, slapped on a tongue-and-groove board, and nailed it in place. As each new board was added, the edges were smeared with roofing tar. After the hole was closed, Don covered the patched area with canvas soaked in tar.

"The hull was weak in the area of the patch," Don recalled when I interviewed him. "However, there was little load on it because of the X-frames we'd put in place in the interior. The yacht was not sailing, so there were no rigging loads on the hull. The only function of the patch was to keep the water out."

Meanwhile Don hired a big crane from the West India Company for one day (\$425). In a series of lifts, the crane maneuvered the yacht into deeper water. The temporary patch held nicely, and the wooden yawl was whisked off to a nearby boatyard. Three carpenters plus their helpers put in 11 new planks, 22 frames, a stout bilge stringer, plus a rudder and a new interior.

Outwitted them all

Iolaire was soon sailing again. With grit, determination, round-the-clock vigilance to deter looters, and a little luck, Don had outwitted both the insurance company and the chorus of doomsayers on the beach.

I saw the same trick pulled off in 1970 in Monterey, California. A sailor and his crew left San Francisco and headed south in a new Porpoise, a 42-foot Bill Garden design. She was a pretty Bermudian ketch built of wood, with a bowsprit and an exquisite sheerline. Once clear of the Golden Gate, the captain headed south along the coast.

Unfortunately, fog rolled in from the west. Suddenly the yacht was enveloped in a thick, blinding blanket of white. The crew was inexperienced. Instead of following a strict compass course and heading a little offshore — the captain had the entire Pacific Ocean to starboard — he steered toward a fog signal that he heard off to port. It wasn't long before he piled up on the rocks beneath the Monterey lighthouse. The yacht was holed and suddenly full of cold water. The people on board, who had lost all interest in further sailing,

"A Hinckley or a Swan is a deluxe, premium-priced vessel and will cost perhaps twice as much as a Catalina or a Jeanneau. Nevertheless, all four will take you across the Atlantic."

hurried ashore and turned the ship over to the insurance company, which declared the yacht a total loss.

A local man — let's call him Mr. Smith — now appeared on the scene and bought the wreck from the insurance company, which was glad to sell it before the Coast Guard labeled the boat a menace to navigation and demanded removal. Smith immediately hired a local contractor, who trucked a heavy Caterpillar tractor to the nearest beach. While the Caterpillar tractor was coming, Smith and a couple of helpers emptied the water tanks and removed as much weight from the boat as possible. Since the wreck lay over on her side, he took out both masts by disconnecting the rigging and running lines ashore. When the Caterpillar tractor arrived, it pulled the masts from the inclined wreck and dragged them up on the beach. The weather remained calm.

Two days' work

Smith ringed the hull with stout ropes and ran the lines to the beach. The big Caterpillar began to inch the wreck toward the shore. It took two days of maneuvering, rock moving, line adjusting, skid placing, and great effort, but by noon of the second day, the battered wreck was on the beach. Smith hired a crane to lift the yacht onto a big flatbed truck. The dripping, angled load was then taken to a local boatyard, where she was blocked up and began to look like a proper vessel again. The waterlogged engine was lifted out for overhaul. The wooden masts were put alongside on sawhorses.

The costs to Smith? He bought the wreck cheaply. The costs for the tractor, crane, and flatbed truck were reckoned in hundreds of dollars, as were the charges for the heavy, long ropes and the hired laborers. The engine overhaul and the repairs to the hull and the wet interior were a few thousand dollars. The yacht was valued at \$40,000. All these figures are from 1970

and should be multiplied by five or so in the year 2004, but you get the idea.

I have noted these two salvage incidents to illustrate what a determined person can do. Both stories are true and show that it's possible to acquire a valuable yacht for a small sum. But in each case the chances of failure were considerable. The purchase of an old charter boat, a wreck from an insurance company, or a seized drug boat may sound romantic and exciting, but for most people it's too risky and difficult. I don't recommend it.

Banks and loan companies often finance yacht purchases. Occasionally the owner defaults on his note and the yacht is seized and sold. Usually the bank officers know little about the vessel they suddenly own except that they want to collect on the outstanding note and end a problem loan. This means you can make small cash offers (you can always go up, but not down). Try 10 cents on the dollar and see what happens. The trick is finding out about the default in time to make an offer.

Used cruisers

The third category for a less expensive yacht is a used cruising boat. A yacht just back from a long voyage. One owned by someone who is too busy to use his boat. The spouse may have grown tired of sailing. Or you'll hear the eternal refrain: "I want something bigger."

The August 2003 issue of *Soundings* magazine listed 81 35-foot sailing yachts for sale. The average price was \$80,841. The average age of the listed boats was 18 years. Since actual selling prices are usually a little lower, this suggests that you can buy a 35-footer that's 18 to 20 years old for \$70,000 to \$75,000, depending on her pedigree and equipment. A Hinckley or a Swan is a deluxe, premium-priced vessel and will cost perhaps twice as much as a Catalina or a Jeanneau. Nevertheless, all four will take you across the Atlantic, just as you can drive an economy Ford (\$14,000) or a new Lexus (\$34,000) from New York to San Francisco.

Before you head off to Hawaii, however, the used yacht will need a careful survey. The odds are that the engine of a 1985 yacht will have had far more attention than her standing rigging. This is why you need a surveyor to inspect all the 1 x 19 wire fittings



I believe the smallest size yacht that's practical for long-distance sailing is this snappy-looking Vertue-class pocket cruiser. She's a heavy-displacement (9,447 lb) 25½-foot sloop designed by Laurent Giles. American sailor Ed Boden is about to leave Avatiu Harbour on the north shore of Rarotonga in the Cook Islands in the South Pacific. "Making this trip was the greatest adventure of my life," Ed said.

with dye penetrant and a high-powered eyeglass. The inspector should unroll each sail and comment on its condition. He should check the compression of each engine cylinder. If the underwater part of the hull is plagued with blisters, there's a potential for a big repair charge. Fortunately, experts can do quite a bit of work on the bottom for \$4,000 or so, which should go into your cost considerations.

Here's a ragtag budget for a 1985 yacht, initially costing \$59,000, and preparing it for ocean sailing:

• survey	\$500
• engine overhaul	\$2,000
• new galley stove	\$1,000
• new standing rigging	\$3,000
• new sails	\$5,000
• painting, etc.	\$1,000
• haulout, osmosis	\$4,000
• Total	\$16,500

We have established that you can buy a 1985 middle-of-the-road yacht for about \$75,000. My estimate for repairs and upgrades is \$12,500 plus an allowance of \$4,000 for bottom work. This totals \$91,500.

From the same used-boat list mentioned above, you could choose a 1995 Freedom (\$149,000), a 1998 Tartan (\$162,000), or a 1975 Halberg-Rassy (\$51,000).

Look at a lot

The only way that I know how to find a suitable yacht is to inspect lots of them. Walk up and down the marina docks. Climb in a dinghy and row past the moorings in the summer. Look around the freezing boat sheds during the winter. Try to size up all the yachts that appeal to you. Fat ones, skinny ones, beat-up old woodies, steel streaked with rust. Cast-off aluminum racers. Tired-looking fiberglass boats. The lot. Take a couple of photographs of each one you like. Talk to the owners. Find out where the boats have been.

Some of the yachts will appeal to

you aesthetically and grab your heart. Perhaps it's the canoe stern, a yawl rig, or the angle of a jaunty coachroof. Maybe it's the way the early sunlight falls across the mast and boom. Perhaps it's all these things... or none of them.

If you're a serious looker, buy yourself a bound notebook and use two facing pages to keep a record of each yacht you inspect. When you're comfortably seated aboard the boat, start writing. Begin with the date and location. Then the yacht's name. Her overall length, waterline length, beam, and draft. (If you need a measurement, you can whip out your tape measure.)

Note the rig. The age of the boat. Hull material. Mast material. Sails (number and type). Radios. Engine (how many hours?). Steering vane or autopilot? Boarding ladder? Dinghy? Is there a place to stow the dinghy on board? Is the price open to negotiation or a trade? How long has the vessel been on the market? Is the owner anxious? Look over the yacht for her general condition, and grade her on a scale of 1 (a wreck) to 10 (too good to believe).

Make lots of notes

Write down your contact. Is there a "For Sale" sign on board? If you're there because of an advertisement, jot down the owner's name and telephone number. If you saw the boat with a broker, note his name and number.

Look at the condition of the berth and seat cushions (check underneath for dampness and mildew). Stretch out on the bunks and see whether they're comfortable and OK for your body size. Try to visualize sailing in the vessel. Does she seem pleasant or is she too far gone? How many anchors does the boat have? What sizes? Is there an anchor windlass? Does it work, or have rust and corrosion sealed it forever? Write down both the good and the bad. Be specific. If you have questions (Capacity of the water tanks? Number

of hours on the engine? Extra mainsail?), list them in your notebook. Take a couple of color photographs of the yacht. These don't have to be artistic wonders, just something to help you recall the yacht. When you get the prints, staple them to the appropriate page.

What often happens is that after a few weeks of looking, you try to recall a certain yacht. But was it in Mattapoisett or Marion? Portland or Bass Harbor? Annapolis or Oxford? When we hear a lot of numbers, we tend to mix up prices, ages, and yacht names. Sometimes after a few days, you want to take a second look. Just where did you see that Cal 40?

After you look at 20 or 30 different boats, you'll find that you like a certain design. Or maybe two kinds. If you're unsure about making an offer, try to arrange a sail. I would have no hesitation about offering the owners a nice lunch or the payment of \$75 or \$100 for them to take me out for a couple of hours, particularly if I do all the string pulling. This little fee may put you next to information (good or bad) that you never thought about. For example: can one person sail the yacht or does the distance from behind the wheel to the sheet winches mean that you need two people in the cockpit? Must you walk up to the mast to adjust the topping lift? The reefing arrangements for the mainsail may seem impossibly complicated. And what about that terrible vibration when the owner put the engine in gear?

Buying brand new

So far we've considered ex-racing boats, ex-charter boats, and ordinary used boats. Each category has good and bad points. What about buying a new yacht?

A deluxe new 35-foot yacht designed specially for cruising may cost \$200,000 or more. But she's all new

Continued on Page 70



Restoring *the* non-skid

A FEW YEARS AGO, MY FRIEND, GIL, and I searched for an Allied Seawind II at a good bargain price. We found several prospects just outside our budget. After some near misses our hopes began to fade; that is, until I encountered the boat that looked like she had been dipped in deck paint before being put on the market. As best as I could tell, she had not been sanded or prepped in any way. Someone had simply gooped snow-white paint from stem to stern, obliterating her previously well-done factory non-skid.

While studying the corpse of her deck looking for forensic clues as to the murder weapon, I was torn. It might have been a hurried roller or perhaps a mop. After a sea trial and a thorough survey, the only explanation for this Gillmer design listing substantially below her value was her painted deck. Surely, underneath it this good old boat was worth a fix.

Gil and I could not resist, so the purchase was made and the refit began. We contracted the proper repair of the expected usual items. Then we ran out of money, splashed her, and brought her home hoping to tackle the deck sometime. I comforted the *Wind Ketcher*, "Don't worry, I will change your deck. If you take it easy on me for a while, I'll set aside some money and you'll get a new dress."

About six months later I was singlehanded in heavy air and dousing the rails, when she gave me a little reminder. Heeled over to the hilt, standing askew on the cockpit coaming and scrambling for footing on the goop paint job, I slipped on that white



Transforming a sloppy paint job into a safe and spiffy deck

by Ed Verner

slime. She dished out, fell into irons, and bounced up and down on the bay chop like a porpoise laughing at me, whispering in the wind, "Where's that new dress?"

Scary job

Applying non-skid sounded complicated and scary. However, a marina's bid for a new painted grit surface was motivational (more than \$5,000 for a 32-footer). Enter the highly recommended Don Casey library, particularly *Sailboat Hull & Deck Repair*. Perhaps instead of a new deck, I could use an overlay product and reduce the deck prep, knock down, and fairing required. The unknown to me was

how well an overlay might adhere. And appearance was a concern as well. A *Good Old Boat* article showing Casey's own boat (an Allied Seawind) with photos of *Richard Cory's* deck where he utilized the Treadmaster overlay was encouraging (March 2002). Seeing the guru's own choice for his very attractive boat sealed the deal.

The project summary is rather straightforward. The materials, including the overlay, the recommended glue (both can be purchased online from Marisafe.com or SailNet.com), sheet metal scissors, masking tape, brushes, box cutter, 4-foot ruler, disposable gloves, sandpaper, and some permanent markers was approxi-

***Wind Ketcher*, Ed Verner's Allied Seawind II, gets a new safe non-skid deck and a new look at the same time. Ed and his boat partner, Gil, chose Treadmaster for the transformation.**



Fitting the Treadmaster to the contours of the deck, trimming the pieces, test-fitting the cut sections, and creating the corner contours.

mately \$1,500 (excluding Scotch and cigars). The project took 29 hours in labor, plus two for planning. It also involved a much-needed helper (I recommend a soft-spoken brunette).

Treadmaster comes in 3-foot by 4-foot sheets and is directional. This is important. You will want to cut your largest pieces first and hope to make use of remnants elsewhere. But with the curvature of the deck area, sometimes even large remnants that remain after your first cut will not accommodate a smaller piece, due to the direction in the diamond pattern. This design feature forces some waste but creates a soft shadow in the grooves of the texture. Plan ahead; at more than \$6 per square foot, it's worth some paper and pencil lead to avoid wasted material.

Rough sketch

I measured for a rough sketch of my boat's deck. Laying 4-foot rulers on deck fore and aft and photographing from the masthead is a real help. Keep in mind — both when making your deck sketch and later when cutting pieces — that boats look symmetrical, but aren't; ours varies in places by more than an inch. I sketched various layout patterns (always allowing about 3 inches of extra material at the edges for error on sheet placements). I picked my favorite layout, cut scaled miniature templates, and placed them



directionally on scaled 3 x 4 drawings of the Treadmaster sheets to calculate the number to order. I wanted to order all of the sheets at once, fearing dye lot color variation. However, when I needed one last sheet a few weeks later, a separate order matched exactly.

Once I had the material, I marked the centerline of my boat with pencil and began working with the real thing. I used a 2-inch relief between sheets and around deck hardware and a 1-inch relief along the curvature of the cabin. I found it best to work from the bow, where my big-



gest pieces and longest straight lines made use of factory-cut edges.

I considered Don's recommendation to make kraft-paper templates to allow for marking on the flat back side of the pieces. However, I preferred to work directly with the material. On the first piece, I used a factory corner to start me off plumb. I placed it with the side edge along a marked

pencil line 1 inch outboard of the centerline and its fore edge upon a perpendicular beam line as far forward as possible. When I knelt on the piece in place, the Treadmaster would lay

"Keep in mind — both when making your deck sketch and later when cutting pieces — that boats look symmetrical, but aren't; ours varies in places by more than an inch."

flat and curl up or roll over obstructions. It could be trimmed quickly with a box blade to within ½ inch of any obstruction or outer edges. Once thus trimmed and lying flat, the piece was now in position with two straight factory lines a given and only these rough edges needing a final trim. These could now be easily marked in pencil on the top side of the Treadmaster using the 4-foot ruler.

Angles and curves

Because the side decks wrap around the cabin, these pieces have no perpendicular corners; they are curved on two sides. To shape these, I used the top factory edge of the sheet (aligning it 2 inches aft of the tail of its neighbor) and trimmed the curved sides as closely as possible to the anticipated outer edge, once again achieving a piece with two original factory edges (fore and aft) without cuts and two sides that need trimming up to fit the side contour. I measured and marked my desired clearance from deck hardware or the toerail every foot or so on the top side of the sheet while it was in position. The aluminum 4-foot ruler, turned on edge and bent with three hands, made for a good tool to mark long slow curves.

When a piece was completely fitted, I left all corners square at first. This way there was more line area to aid positioning adjacent edges. Working aft from the first piece's trailing edge helped keep the diamond pattern properly aligned with the spine of the

boat. I suggest cutting the pieces for the forepeak and decks back to the cockpit before the cabintop and letting them be fully 4 feet long. This creates easy symmetry to establish relief breaks for your drain areas. Then you can plan the cabintop (likely busier with obstacles) to align with the pattern of relief gaps on the deck below. I made holes in the material to surround the Dorade boxes. However, for pieces requiring tricky convolutions I definitely endorse Don's suggestion of a kraft paper template.

Once a piece fit properly and looked right, I outlined its position on deck in pencil and labeled the back in permanent marker with a code for position and direction, and I marked my drawing to act as a key. For example, "PC-1" for Port Cabin Top #1.

"The glues recommended were either a two-part epoxy or a contact adhesive. I tried the latter, after testing it on a small area to ensure it would not emulsify the surface."

Now the pieces could be stowed to allow for a quick sail. After labeling one, I would flip and test it as a template for its beam sister. It worked once or twice but not often.

Rounding corners

When all of the pieces were cut and passed an inspection, I chose a radius.


The impact of radius cutting to round the corners is astounding. It hides errors between pieces. Too tight a radius will make cutting more difficult, leave an edge likely to dislodge over time, and be less effective in soft transi-

tion between lines. But too large will create gaps of exposed deck on acute angles. I went with the masking tape roll (about 4 inches diameter) for most everything. In about four key places

Eyeball perfection

HERE'S SOME SERIOUS ADVICE GIVEN by my patient helper: sometimes measured clearances that are perfect and take an hour to translate onto a piece just don't look right.

I complained aloud. "This is right, but it looks wrong. And darn it," I said as I slid the piece a smidgen over, "I know it's wrong, but it looks good when I just eyeball it."

The zinger came when she said, "Well, don't forget you're going to be looking at it with your eyeball." 



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Spreading the glue and allowing the finished deck to set for several hours. Her new non-skid should last at least as long as *Wind Ketcher* does.

goop with minimal deck prep. After a knockdown and rough up with 60-grit paper, I vacuumed and wiped an area with acetone and tried a test piece.

The glues recommended were either a two-part epoxy or a contact adhesive. I tried the latter, after testing it on a small area to ensure it would not emulsify the surface. I applied it according to the instructions to separate surfaces to be joined together, the back of the trial piece and the tape-masked deck area, allowing the glue to dry to a light tack before joining them. When working the glue, I tried a roller and a serrated trowel before learning to prefer a paint brush. It dried quickly to a medium tack. Remember that cheap latex gloves are your friends and also to avoid getting the glue on the surface side of the Treadmaster. Don't scrimp with regular hardware-store vinyl contact adhesive. It is thinner and does not bond well enough to withstand the expansion/contraction of outdoor use with Treadmaster.

Gently rolling

When joining, some recommendations called for pressing a piece from the center outward to avoid air bubbles. I found this to be nearly impossible when dealing with long pieces, especially those along the sidedecks where access to the center is difficult. I had success with starting with a corner and gently rolling a piece into place. Air pockets were rare, but these were easily worked out with gentle squishing. A small roller would have been nice, but not essential, for pressing. Once in place, but before it has completely set, I gently lifted the masking tape to clear away any excess glue along the edges. Any mess remaining could be wiped easily with a dab of acetone-rich cloth.

Within minutes the material was down firmly enough to take weight. I then tested the entire edge of each piece in turn. Because of the previous paint, there were a few edges that let go and curled up. On these, I peeled back the weak edge, gave a quick Q-Tip surgical insertion of glue, and resealed it. In less than an hour, the

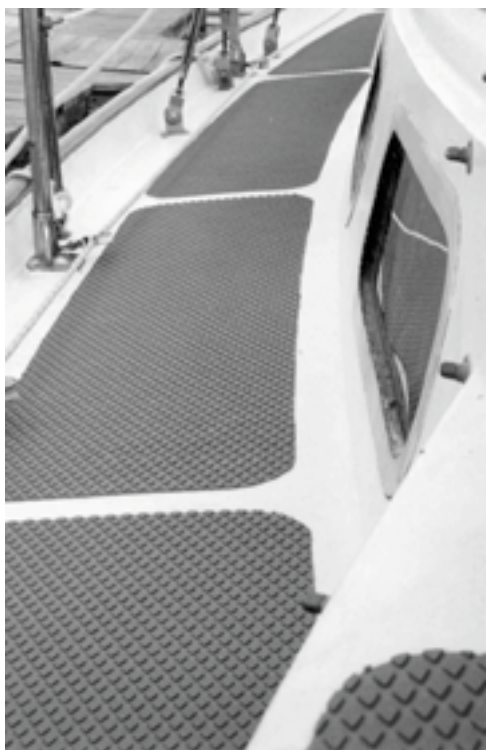
glue had firmly set, leaving only sanding the relief areas and patching any blemished paint to finish the job.

If your boat has a bad deck, I warmly recommend this project. *Practical Sailor's* February 1, 2003, issue compares the optional materials for painted and glued-on non-skid treatments and selects the Treadmaster overlay as best. The manufacturer's website discusses industrial manufacturing situations that indicate its durability <<http://www.tiflex.co.uk>>. I have found it to be supple and incredibly effective as a non-skid surface. It will cause waffle knees but is comfortable on bare feet and does not rip clothing. Also it does not get unbearably hot in the sun (color-dependent, I'm sure). The change in the *Wind Ketcher* packs a wallop in appearance and safety. Before now I have never hung wallpaper or laid vinyl material.

Once in a while, it pays to buy a lady a new dress.

Postscript

While skirting a minor thunderstorm in Tampa Bay, Gil and I suffered a broken bobstay under full headsail. The genoa ripped the pulpit, forestay, lifelines, and anchors away to leeward. To save the rigging, I was required to spend time on *Wind Ketcher's* naked forepeak with the bow bucking in whitecap chop and 20-knot-plus winds. For more than 10 minutes I needed both hands to lash down the offensive broken rigging. The safety of the vinyl overlay came home to me then. Gritted sand surfaces or textured fiberglass factory non-skid areas are no comparison. The Treadmaster was soft and gooey against my deck shoes, even while wet and with a hostile bow motion. Here was a real safety test. I could not have stayed aboard and done the job without it. 



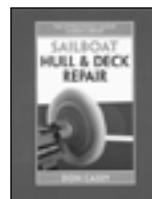
I decided on a smaller radius (Scotch bottle — single malt) for a tighter clearance, but not where it would be adjacent to the larger radius cuts. I marked the material's back side, finding it easier to cut curves looking at the unshadowed reverse side.

Preparing the deck is boat-specific. I decided to try sanding down and fairing the existing deck for a trial piece. One of the benefits of the goop paint job was how it adhered incredibly well and faired the previous non-skid. I'm sure there are some situations that would require total deck rehab, but part of my motivation was in hoping we could cover over the

For further reading...

Sailboat Hull & Deck Repair, by Don Casey, covers Treadmaster installation, other methods of non-skid repair, and many other topics associated with hull and

deck repairs. This and other books can be found at <<http://www.goodoldboat.com/bookshelf.html>> or by calling 763-420-8923.



We skid no more



A nasty fall overboard spurs non-skid deck renovation

by Andy Uytenbogaart

I KNEW THE DECK OF OUR 42-FOOT BOAT needed attention, but I always put it off in favor of other projects.

Non-skid replacement was not exactly on the top of our to-do list. Actually, it wasn't on the list at all. One sunny afternoon as I climbed out of the cockpit, I slipped, grabbed for the dodger and took most of it with me as I fell head-first over the side. Fortunately, we were tied to the dock at the time. Lying there on the dock, I thought about what would

have happened next if this had occurred while we were sailing. I realized it was time to do something about our slippery deck.

I started by reading articles about popular methods, such as prepping the surface for painting, adding your first coat of paint, and using a flour sifter or screening material stapled to a wood frame to sprinkle sand in the wet paint. Once it dries, you apply a second coat of paint to encapsulate the sand. It looked as if the previous owner had used this method on my boat; I could see at least two different

shades of paint and sanding marks left behind from sloppy prepwork. I thought about adding a quick third coat. This probably would have done the trick for a while, but it was winter here in the Northeast, and I had plenty of time to think about how to solve my gravitating dilemma.

A few weeks later I read an article about how to install a composite material with a sharp, raised, diamond pattern called Treadmaster. The arti-

cle went on to say that, when properly installed, it would probably outlive the boat it's attached to. The only problem I could see was the amount of work involved and the final cost. Installation requires removal of old non-skid material, making templates from

the existing deck pattern, cutting the Treadmaster material to match your templates, then using epoxy to apply each section. Even though Treadmaster comes in a large range of colors, we also decided the finished product didn't have the appearance and feel we were looking for.

"Then, one night while stuck below during a nor'easter, I was sorting through some old papers and discovered a small, thin, metal sample with a product called Durabak-18 applied to one side."

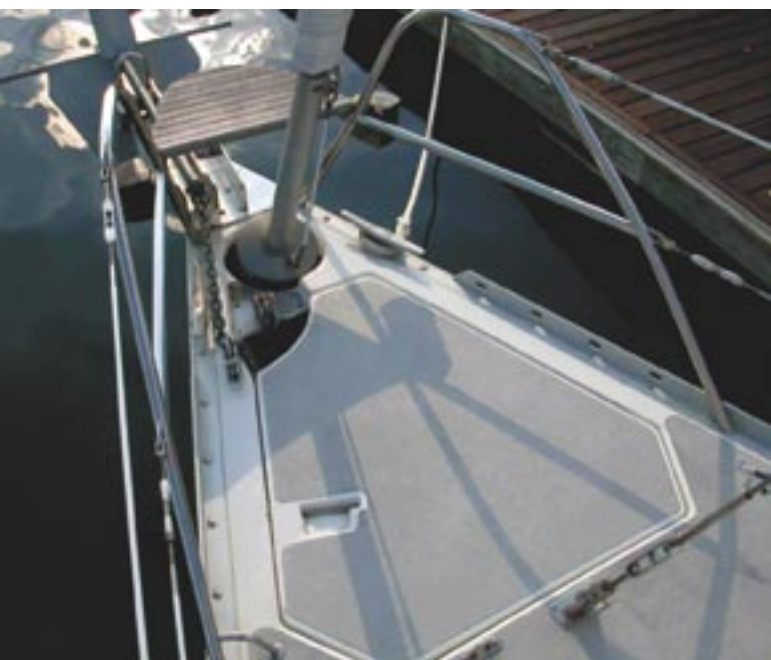
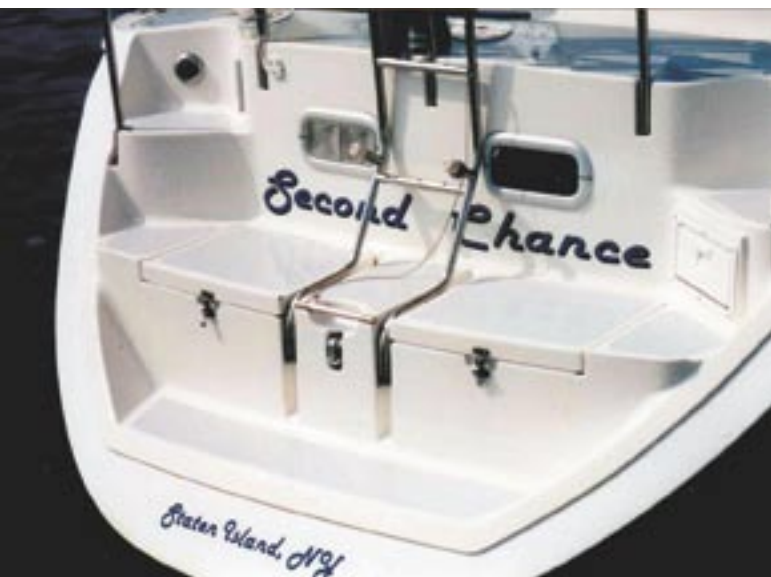
Put it to the test

Then, one night while stuck below during a nor'easter, I was sorting through some old papers and discovered a small, thin, metal sample with a product called Durabak-18 applied to one side. I remembered that I had picked it up at one of the boat shows a few years ago. I decided to put the sample to a few tests. First I scratched it with my keys. It held up better than my existing deck when the same test was applied. I tried to peel it and couldn't. I folded it in half hoping to crack it. It didn't. After contemplating my last test, I decided this might be the material I was looking for. I researched Durabak-18 on the Internet, and discovered the folks at Applied Surfaces have found a way to suspend little bits of recycled rubber from old tires in a polyurethane base.

Here's the product description on the can: "One step, totally flexible, slip-resistant, waterproof, abrasion-, chemical-, heat-, salt water-, UV-, and corrosion-resistant, lead-paint encapsulant. Range of colors." Reportedly, it's used on U.S. Coast Guard ships, and our own Staten Island Ferry here in New York City. As for the range of colors, Durabak-18 comes in a wide variety of colors including bright orange, just in case you want to highlight trouble areas, such as steps, cleats, or anchor chains leading to your windlass.

The next day I called Applied Surfaces to confirm our installation. I wanted to make sure it would hold up when applied to a semi-flexible fiberglass deck which would be in the sun 365 days a year with the occasional saltwater bath. Folks at Applied Surfaces reassured me it would and also mentioned that — due to the light foot traffic seen on most small boats — with regular maintenance, it might last indefinitely. To put light foot traffic in perspective, think about how the decks of the Staten Island Ferry would see more foot traffic in one day than my boat would see in 10 years.

Andy prepares the starboard deck, above, for a non-skid application of Applied Surfaces Durabak-18.



To get a feel for the process, Andy started with the transom steps, at top and center in “before and during stages.” The finished bow, below, and in wide view on facing page, shows the project soon after it was completed and two years later.

Starting the project

To get the project started, I ordered one quart of light gray Durabak-18 and two of the special 4-inch rollers needed to apply the product. For small areas where a roller won't reach, you can also use a regular paint brush. If you have the proper equipment and a large area to cover, the product can also be sprayed on.

We decided to start with six small areas that make up the transom steps. If everything worked out, we would continue with the rest of the boat. I very carefully read the instructions and product warnings. Surfaces need to be clean, dry, and roughened. Durabak-18 will bond to almost any surface, but be sure to read the instructions, as preparation varies depending on application.

We also had a few pieces of deck hardware that would need to be removed first. While this added time to the overall project, I decided it was a good excuse to clean, inspect, and reinstall the hardware with fresh bedding compound.

Once all the deck hardware was removed, we followed the instructions for fiberglass and previously painted surfaces.

“It takes a few seconds to learn how to apply the product, but don't worry, your second coat will hide your first-coat mistakes.”

Before sanding any surface, be sure to remove all traces of wax or other contaminants. As instructed, we used xylene to wipe down all areas to be sanded. Xylene can be purchased at household paint supply stores in quart and gallon containers. We used approximately three quarters of a gallon to complete the decks on our 42-foot boat.

Because our goal was to have completely renewed decks, we also compounded all adjoining fiberglass. Once the Durabak-18 had completely cured, we would go back and renew all surfaces with several coats of fiberglass polish and wax. Although this step increased the overall time to complete the project, it proved worthwhile as we've since had people mistake our 13-year-old boat for new.

Roughened the surface

Our surface preparations included using a small palm sander with 100-grit sandpaper. Being very careful not to sand the adjoining deck areas, we only roughened the surface to be painted. There were also a few dings that needed attention, so we mixed up a small batch of epoxy to fill in those areas. Once all sanding was complete, we washed down the entire boat using soap and water, and we wiped everything down with xylene once more. For the next step, we masked off all deck areas we wanted to protect. We used 2-inch tape but, in hindsight, we should have extended this out another few inches using newsprint or kraft paper.

Durabak-18 needs to be stirred very well before applying. We used our power drill with a paint-mixer attachment on



low speed. We also added in a small packet of the accelerator Applied Surfaces recommends for cold-weather applications and faster curing. Once everything was mixed up according to instructions, we wiped everything to be coated a final time with xylene. We then applied our first light coat. It takes a few seconds to learn how to apply the product, but don't worry, your second coat will hide your first-coat mistakes. Using the special roller, you roll in only one direction. Don't try to roll it out like paint. Once everything has been coated, cover the unused product and take a break. Depending on temperature and humidity, you'll have one to two hours before it becomes dry to the touch and ready for the second coat. Just before you apply the second coat, thoroughly mix the product once more. Your second coat should be applied a little heavier and at an angle to the first coat. As you apply the second coat, you will see everything come together. Your sloppy first-coat mistakes will disappear, and everything will even out to a nice uniform finish. Durabak-18 is a very forgiving product as long as you follow all preparation instructions carefully.

"I would suggest breaking up a project such as this into several weekends. We found we could prep, clean, mask, and paint about 30 square feet during a weekend."

Small garbage bag

Once you have completed your second coat, remove all masking tape immediately and carefully. It's best to have a helper at this point to hold a small garbage bag turned inside out as you deposit still very wet masking tape on the bag. Once you have a pile of tape stuck on the bag, your helper can pull the bag up and over the pile, containing the worst of your problems. At this stage, if you notice any missed spots, wait for the Durabak-18 to dry before touching it up. However, if you notice any Durabak-18 where there shouldn't be any, wipe it off right away with a rag and xylene. Otherwise, you'll never get it off. This includes any Durabak-18 that might have been splattered by the roller onto other parts of the boat or any that got there from a wayward piece of masking tape.

I would suggest breaking up a project such as this into several weekends. We found we could prep, clean, mask, and paint about 30 square feet during a weekend. Even though it was a little more expensive, we used quart containers

rather than gallons. This way we could apply one quart at a time. Once you open the can, the product starts to cure. The folks at Applied Surfaces advised us that the Durabak-18 spread rate is about 60 square feet to the gallon. On average, we found that to be a conservative number, but it was good enough for figuring out how much product to buy. We did have one quart left over, but it's nice to have a bit with the same color batch number for unforeseen touchups.

After six to eight hours you should be able to allow light foot traffic. We waited two weeks before we polished and waxed the rest of the deck, as the company suggests.

This year alone we've put more than 3,000 miles on our boat and our Durabak-18 installation still looks and works great. For regular cleanings we use a soft bristle brush with soap and water. We tried using hard bristle brushes, and although the Durabak held up to our rough cleanings, a soft bristle did a better job. We have spilled oil, diesel fuel, blood, red wine, and other products with no ill effect. Durabak-18 has held up very well after three years of constant use. 

Resources

Durabak-18 distributor

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The little job that

It started with replacing and ended with



NOT LONG AGO I WAS REMINDED ABOUT HOW A SMALL JOB can turn into a much larger one. My 1976 Chrysler 26 Swing Keel had a small hole in the sole under the companionway ladder. Armed with a long-handled screwdriver to use as a prybar, I decided to do some excavating to see how much floor needed to be replaced. The soft rotted plywood around the hole came up easily in delaminated sheets... as did the rest of the floor. Water had been soaking the plywood for many years. The forward end of the sole extended under the spruce beam that supports the deck-stepped mast. Unfortunately, this meant that the mast had been poorly supported on soggy layers of rotted plywood. It all had to be replaced.

Chrysler 26s with the swing keel have 1,200 pounds of lead ballast installed in a shallow "shoal keel" and an 800-pound centerboard that can be raised into a housing that occupies the center of the main cabin. The keel housing is a fiberglass structure with plywood glassed onto each vertical side for support. The plywood supports extend all the way to the bottom of the shoal keel, which is filled with about 240 (or so) 5-pound lead ingots encapsulated in brittle urethane foam.

The foam and lead looked dry, but when I stabbed the brown foam with a screwdriver, it squirted water. It was saturated. The boat had no obvious leaks. Other than the rotted floor, the rest of the boat was dry.

The outside perimeter of the cabin floor rests on the hull. Some lengths of aluminum angle screwed into the keel housing stiffeners provide support for the other side of the floor. I used these pieces of angle as a reference to locate points where the new floor would contact the hull.

Rotating laser

Using the aluminum angle as a reference and a rotating laser pointer, I drew two perimeter lines on the hull, one representing where the bottom of the $\frac{3}{4}$ -inch plywood floor would intersect the hull and the other just above it where the top would be. By locating both lines, I could taper the edges of the floor to match the angle of the hull. This perimeter line was then converted to offset measurements that could be used to cut out the new floor panels.

Just like the rotted floor, the plywood supports on either side of the keel housing were showing signs of delaminating. It was not obvious this was the case until the carpet covering the keel housing was removed. At this point I was

still trying to decide just how large a project I wanted to tackle. I could ignore the delaminated plywood on the keel housing and just put in the new floor, or I could tear out the lead ballast and wet urethane foam and replace

the stiffeners also. I was more concerned about where the water that had saturated the ballast area was coming from than I was about the poor condition of the keel housing stiffeners. Using a long narrow prybar, I popped out a few lead bricks to get a feel for how hard it would be to remove them all. The first few came out deceptively well, so I forged ahead. As each layer of bricks was removed, the foam became denser and harder, and the hull forming the inside of the keel became narrower. Removal of the ballast became more difficult with each successive layer.

Eventually though, all the lead and urethane on each side of the keel housing was removed as far forward as I could reach under the cabin liner. Next I removed both of the keel-housing stiffeners. While peeling the wood from the fiberglass housing, I kept one side as intact as possible. I used this piece later as a template for the new stiffeners. The lower part of the stiffeners that sat low in the hull had become delaminated and came off easily, but the plywood on the upper housing was still intact and required some careful chisel work to clean it from the fiberglass housing. I cleaned and

Before he knew it and in spite of his best intentions, Jim Craighead became the creator and owner of a small foundry. It had all started with an innocent patch of rotten plywood near the compression post below the deck-stepped mast of his Chrysler 26. His furnace melting pot, which bears an amazing resemblance to an ordinary garbage can, above left, and looking into the depths of the furnace, first with the pigs, above, and next with the molten lead, facing page.

by Jim Craighead

grew

the sole casting molten lead



sanded all the fiberglass surfaces and placed electric heaters at each end of the keel area to help it dry out.

Leaking bolts

After all of the wood was removed and the glass cleaned up, the search for the

cause of the wet ballast began. It appeared that the bolts holding the pivot-pin housing to the hull had permitted water to leak into the ballast area. They came up through the front of the shoal keel and threaded into steel plates embedded in the fiberglass. After I had run the heater for several weeks, I sanded the steel plates and the surrounding glass and applied a layer of epoxy thickened with fumed silica to seal the area against further leaks. Another layer of unthickened epoxy would be added later to encapsulate the lead ballast.

The floor that was removed from under the liner just ahead of the keel served as the main support for the deck-stepped mast. At the factory, the original floor could extend under the mast because it was installed before the liner was installed. I needed to fabricate a mast support platform to replace the function originally served by the cabin floor. To increase the rigidity of this support and spread the load of the mast over a larger area of the hull, I used two layers of ¾-inch plywood. These pieces were cut to fit so that their contact with the hull would be as large as possible. The support boards were about 8 inches front-to-back and as wide

Concerned that he might not fit lead bricks in his keel as compactly as they had been placed the first time, Jim made plaster of Paris plugs, buried these in hard-packed sand, and poured molten lead in the cavities they left behind. One of these lead castings is shown, above right, free of the mold. He needn't have worried about the space in his keel: the new ballast sits 2 inches lower than the original did.



Casting lead ballast


I FOUND INFORMATION ON BACKYARD FOUNDRIES ON THE WEB AND I built a propane-gas burner and a garbage-can foundry. I welded a stainless-steel crucible large enough to hold 180 pounds of molten lead. These projects went fast and represented the easy part of lead casting.

To keep the weight of each casting under 150 pounds, I divided the keel area into four spaces using cardboard dividers fastened in place with duct tape. I greased each area with Vaseline and poured in a wet mixture of plaster. I embedded a short loop of rope in the plaster for use as a handle. After the plaster set up, I pulled the plug from the hull and poured the next one.

After I had finished both port and starboard castings, I was ready to fire up the furnace and melt lead. For casting sand, I used a mixture of fine silica sand and furnace cement. After mulling the sand/cement mixture, I packed casting sand around a plug centered in a plywood box and tamped it with a 2 x 4. All the plugs were tapered top to bottom, so I was able to pack sand around them and pull them out carefully by their rope handles. I had no idea what to expect when I made my first pour. Would the sand collapse in the mold? Would the moisture in the mold cause it to blow up?

I protected myself with a respirator, coveralls, leather welding gloves, and a full-face shield. By the dimensions of my plug, I estimated the lead in this casting to be 90 pounds, so I put 18 bricks in my crucible. The furnace melted them very fast — about 10 or 12 minutes. I opened the gate valve on my crucible and was surprised to see molten lead running into my mold like water. As the level of the lead in my mold kept rising, I began to get nervous about it overflowing. Just as I was about to close the gate valve, the flow stopped. I had guessed correctly about the amount of lead needed to fill the mold.

For my last pour, being short of casting sand, I decided to try plaster of Paris as a mold material. Bad decision. The mold broke with a loud BANG, and 25 pounds of molten lead ran across my garage floor! The spreading silver puddle looked like a scene from *Terminator II*. A project car in my garage was splattered with dots of lead.

I gave up on using plaster of Paris and made a sand mold for the last pour. In all, I made 10 large castings and two small ones with the heaviest casting weighing 143 pounds. The small castings were necessary to add 40 pounds to the starboard side to make it equal in weight to the port side. 



The strengthened mast support, at top; the pulley trolley used for moving the heavy lead, second from top; the castings being placed in the keel, third from top; and the finished keel with all castings in, above.

as I could fit them under the liner. I carefully tapered the sides of the boards to match the angle of the hull. They were sealed and glued to the hull with thickened epoxy. The space above the support boards and under the liner was filled with several layers of plywood to provide a solid platform for the mast.

Using the old plywood stiffener that was saved for a template, I cut two pieces of ¾-inch plywood to match and coated them with unthickened epoxy to seal them against moisture. Then I used thickened epoxy to glue them onto the keel housing. I used large C-clamps on the top of the assembly and forced scrap wood strips between the settees and the plywood to clamp the bottom.

Little clearance

There was only an inch of clearance between the floor and some of the lead bricks. Concerned that the bricks might not fit as compactly as when they were originally installed, I decided to cast 1,200 pounds of lead bricks into 10 large form-fitting pieces. Installing the lead ballast as solid castings, as opposed to bricks encapsulated in foam, should improve the performance of the boat by

putting the ballast weight at a point lower than it had been originally. To create the lead castings, I fabricated plaster of Paris patterns of the hull, a furnace, a melting crucible, and a mold box. (See the sidebar on Page 33 about building a furnace and casting the lead ballast.)

I used a pair of pulley systems to get the castings into the boat. With the boat on its trailer, the castings had to be raised 10 feet in order to get them into the cockpit. I used a block and tackle to get the castings from the ground into the boat and a pulley/trolley system to move them across the cockpit and

into the cabin. Each casting was pre-fitted with a piece of aluminum angle for an attachment point that would be removed after it was installed.

After the castings had been lowered into their respective places in the hull, I taped cardboard dams in place to contain the epoxy fore and aft of the castings. After several pours, the ballast was permanently encapsulated in solid epoxy.


Even though I added an additional 180 pounds of lead to the castings, the new ballast sits 2 inches lower in the hull than it did as originally installed. Up to 400 pounds of additional ballast could

"I popped out a few lead bricks to get a feel for how hard it would be to remove them all. The first few came out deceptively well, so I forged ahead."

Caution, please!

by Jerry Powlas

DON'T EVEN CONSIDER TRYING TO FAKE YOUR WAY THROUGH CASTING MOLTEN metal. It is an extremely hazardous activity. One reference volume's safety information ran to more than a full page. You will need to study the activity and processes using reference materials not provided here. Non-professionals do make one-off metal castings without accident or incident, but a safe version of the process is complex and must be understood completely before the work is attempted.

The vapors from molten lead are hazardous and must not be breathed. Allowing liquid water to enter the melt or mold will cause an explosion when it turns into steam. The explosion will spray molten metal. Any combustible material that gets into the metal may ignite, and it cannot be put out using water. Sand is suggested. If any part holding the molten metal fails, you will be confronted with a flow of molten metal to unintended places. Plan for that. An alternative to casting molten lead is to cast shotgun shot in epoxy. This results in a casting that is not as dense, but the process is much simpler and inherently safer. 

have been added with the space that was gained. The area between castings was filled with lead shot and epoxy. That added an extra 25 pounds of lead to an area that would otherwise have been filled with epoxy and filler.


Installing floor

After installing the new keel stiffeners and ballast, the next step was to install the new floor. I cut $\frac{3}{4}$ -inch plywood to match the offsets that I had recorded previously using the laser pointer. I cut one panel for the floor aft of the winch cable and two pieces (port and starboard) for the rest. Using an angle grinder, I tapered the outside edge of the panels so they would

“Just like the rotted floor, the plywood supports on either side of the keel housing were showing signs of delaminating.”

sit flat against the hull. When the panels were placed in the boat for a test fit, the reason for taking the extra time to measure the perimeter for both the top and the bottom of the floor became obvious. They all fit surprising well. The tapered edge of the floorboards matched the angle of the hull perfectly.

The forward floor sections needed a means of providing additional support between their mating edges. I cut a piece of $\frac{1}{4}$ -inch aluminum plate to bolt beneath the joint. Because there was no access under the floor panels, I drilled and tapped the aluminum plate for $\frac{1}{4}$ -inch x 20 flathead screws. The aluminum angle that supported the floor next to the keel housing was replaced with 1-inch x $\frac{1}{8}$ -inch stainless angle. I glued all three of the floor panels in place using thickened epoxy and the $\frac{1}{4}$ -inch screws. After the epoxy had hardened, I leveled the gaps between the aft panel and the keel housing and the union between the floor panels and the liner at the fore

and aft ends with polyester body filler. I rolled out 3-inch glass tape on the inside and outside perimeter and saturated it with epoxy. The result was a sealed, sound, and flat floor. 



The stainless-steel support rails, at top; the test fitting of the new floor, second from top; and the finished floor in the bottom two photos.

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Deep-sea dreams

*Simple upgrades
turn a weekender
into a world cruiser*

by Dave Martin

THE SAILS ARE STOWED, DINNER IS COOKING, AND A DAY OF sailing has taken the edge off a hectic workweek. The heavens turn crimson, the water morphs into a sheet of liquid fire, and there you are in the cockpit sipping a sundowner. Thoughts turn to taking a leave of absence and going on an extended cruise. A winter in Mexico... a voyage to the Bahamas... a sojourn in Alaska. Sunsets every night. Well, almost every night. Everything would be perfect except for one thing — money.

How can anybody take time away from work to go cruising and still afford to make payments on a brand-new cruising boat? Let's see: work 10 more years, pay the boat off, save some cash... but wait. By then my new boat will be an old boat all over again.

The solution is simple: buy a boat that's already old, fix it up, and get going. The truth is, many of today's off-the-shelf production boats have the same problems as their predecessors and will need some serious attention. These problems include oversized cockpits, leaky companionways, vulnerable windows, and undersized rigging. Whether a boat is newish or oldish, after correcting some of these shortcomings, you will be ready to go great distances.

The cockpit

A cockpit is a large water-catchment system with holes in it. These holes include the companionway, cockpit seat lockers, portholes, air vents, electrical fittings, and shifter controls. My experience has shown that a truly water-

tight boat can survive horrific seas. The key to survival is preventing water from flooding the cabin. Try to visualize what would happen if the cockpit became filled with water. This could happen due to a knockdown, a tide rip, or a serious storm. Where is all that water going to go?

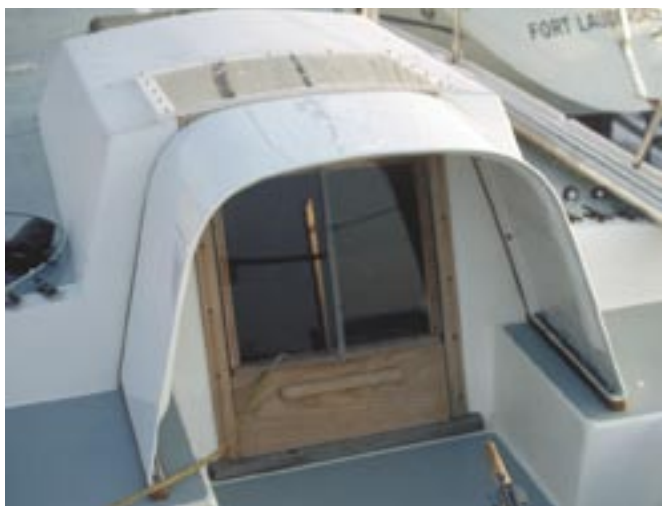
The companionway is the most vulnerable inlet, due to the difficulty involved in sealing the removable door slats and sliding hatch. Care taken in this area will ultimately create a safer boat. Unfortunately, each boat is different, so there are no magic answers. But with a fair dose of creativity and ingenuity, it ought to be possible to keep the water at bay.

One method of sealing door slats is to put thin weatherstripping in the grooves where they seat: sides, top, and bottom. (This will increase their size so the slats may have to be cut down a little.) There should also be a system to lock the slats in place so they don't get washed overboard. This can be achieved with lanyards or barrel bolts. Some

companionways have swinging doors. I like these because they can be closed at a moment's notice. They are also easier to seal and are less cumbersome than removable slats. If the doors or slats have louvers (or other types of vents) build special ones without openings for offshore sailing.

In cases where the bottom of the companionway is level with the cockpit floor or bridge deck, think about installing a door slat that is permanently sealed with silicone or epoxy. Make it as high as tolerable for stepping over. It might be a nuisance, but a sill is a great failsafe to help keep water out of the cabin.

"The truth is, many of today's off-the-shelf production boats have the same problems as their predecessors and will need some serious attention."



I solved the leaky sliding hatch problem aboard *Direction* by removing it completely and building a fixed hard dodger. Note the swing doors and a hinging “sill board,” all gasketed. It was a difficult companionway to maneuver, but it was very dry.

Easy leak test

A sliding hatch is an invitation for leaks. (An easy leak test can be performed with a hose. Aim the water directly on the seams. A few drips leaking in might be a nuisance, but large amounts of water getting in are a problem.) Short of completely rebuilding a leak-prone sliding hatch, a viable alternative for stopping water is to cover the hatch with tight-fitting canvas. A semi-permanent cover could even be built using plywood. Since it will be difficult to negotiate the companionway, these temporary hatch covers could be put in place during open water passages or when it looks like a storm is brewing.

Cockpit lockers are huge water magnets, but they are easier to seal off since access is generally not necessary during bad weather. Lockers must be well-gasketed and reliably secured so they don't open during a knockdown. Drip troughs under the lid might keep spray from infiltrating, but lockers need to be 100-percent watertight for ultimate safety.

Weatherstripping is one way to seal a locker. On my Cal 25, *Direction*, I solved the leaky-locker problem by permanently sealing the lids with screws and silicone. Fortunately, there was adequate access under the cockpit via the quarter berths. If the design of the boat allows it, another alternative is to turn the locker into its own watertight compartment. That way, if the lid leaks, water will not infiltrate the cabin.

Other potential cockpit leaks include 12-volt electrical plugs, remote windlass switches, shifter controls, speakers, instrument panels, coax cable ports, Dorade vents, and cowls. While most of these items are rainproof or splash-proof, they may not be submersible. Think about installing plugs and switches in a recessed box that has a watertight cover. Most products today include foam gaskets for watertight installations, but I like to smear a thin film of silicone on either side of the gasket to ensure a good seal. For Dorade vents or cowls, have a reliable way to cap them off during rough, unsettled weather.

Lastly, the best-designed scuppers will drain through the transom, either through mouse holes or through a large 3- or 4-inch-diameter conduit. If the scuppers drain through the bottom of the boat, make sure that the drain hose is as large as possible and as vertical as possible without any bends. (Footnote to getting pooped: when a cockpit gets filled to

the brim, 50 percent or more of the water will slop out when the boat rolls or heels.)

Hatches

Alloy deck hatches not only look good, they are also strong and seldom leak. Many older production boats, however, have molded fiberglass hatches. These are prone to leaks and many are attached with inadequate hinges and clamps. Be aware that when a boat is loaded for cruising, the bow is more prone to plunging. When this happens, water will course across the foredeck and slam into the hatch — sometimes with great force.

One way to test the strength of a molded hatch is to give it a solid thump with a large mallet. No kidding. Put a block of wood against the hatch to avoid scarring, then aim the blow laterally against all sides to challenge the hinges and

Tip: When installing polycarbonate or acrylic windows, put a $\frac{3}{32}$ - to $\frac{1}{8}$ -inch rubber spacer between the plastic and the hull to prevent the sealant from getting squeezed out. Always check with manufacturers for which sealant to use.

Tip: The simplest and most reliable way to secure locker doors and settee covers is with $\frac{1}{8}$ -inch Dacron line. Sliding barrel bolts might look nicer and be a tad easier to use, but buying a dozen or more of them can get expensive. They also chafe the cushion. I like to dead-end a piece of line inside the locker and then poke the bitter end through the finger hole. Either tie the end to something or tie something to it.



A simple way to secure settee lockers is with line.

Tip: Batteries should have a substantial brace over the top of them that is through-bolted. Often, water and fuel tanks sit in chocks that prevent lateral movement but not vertical lifting. A simple bolt and nut can prevent a stove from jumping the brackets.



It is important to have batteries securely bolted down.

Tip: Another way to beat the water-stowage dilemma is to use one-gallon plastic jugs (the ones with “handles” are best, such as apple-juice bottles). These can be stowed throughout the boat, below the waterline, in any spare corner. On our 25-footer, we managed to find room for 15 jugs. Having small jugs is also handy for transporting water from shore in the dinghy when a dock is not available.)



clamps. This may seem extreme, but it's better to discover the weak link at the dock instead of in a storm. After this, if the hatch survives the hose test, you're on your way.

Windows and portholes

Windows are a liability. They eventually leak, they sweat, and if they break at sea it's a huge problem. Still, we all want windows. I know I do. Many older boats have tempered safety glass windows set in aluminum frames. This style of window is a nightmare waiting to happen. If smacked by a wave and pulverized or hit by the butt of a spinnaker pole, the formerly rigid glass can now be pushed right into the cabin. I believe that putting anything on a boat that's made of glass is a bad idea. Imagine a wet cabin besprinkled with minute glass shards — not to mention being saturated with seawater.

Glass windows can be made safer, however, by installing storm shutters over them. Any stiff material will make a good shutter. Plywood is the cheapest; aluminum is the stiffest.

In my opinion, the safest windows are made from polycarbonate (Lexan). Polycarbonate can be pricey but it's nearly unbreakable. Best of all, it's easy to shape with standard woodworking tools. If thick enough polycarbonate is used (3/8-inch for small windows, 1/2-inch for large), storm



Companionway door slats must be physically attached to the boat to prevent them from being washed overboard.

shutters should not be required.

Acrylic plastic (Plexiglas) is much cheaper and less prone to scratching, but it is more of a challenge to work with and gets brittle with age. It is also prone to breaking when being removed for resealing. Always check with manufacturers for the best type of sealant to use.

If you're uncertain whether your boat's windows are strong enough, give them the large mallet test.

Weight distribution

The extra gear required for long-distance voyaging will add up not only in dollars, but in weight. Basics include extra sails, spare anchors and chain, larger batteries, water, fuels, tools, a life raft, books, clothes, shoes, toiletries, toys, games, spare parts, and food.

Strategic placement of gear will help maintain the boat's performance and also keep it stable. Overloading the bow and stern will accentuate pitching, or hobbyhorsing. This can hamper boat speed, especially when punching into a seaway. Worst of all, it can impair directional stability — particularly when sailing downwind in heavy seas. Overloading a boat above the waterline will raise its center of gravity; a top-heavy boat is more likely to be knocked down or even rolled.

So where does all that stuff go? Try to keep heavy items

The menace of drips

MY FOCUS HAS BEEN ON WAYS TO PREVENT LARGE VOLUMES OF water from flooding the cabin, but how about drips? Are they just a nuisance — part of life on a boat — or are they a threat also?


Drips can be just as crippling as a breaking wave. Granted, drips are not going to sink the boat, but drips have the ability to demoralize the crew. A demoralized crew can make bad decisions — decisions that might ultimately lead to loss of the boat or loss of life.

Morale is a tricky state of mind — especially when the sea is angry, the motion unruly, and the distance yet to sail longer than you care to think about. But give the crew a hot meal, dry clothes, and dry bunks — and most important, faith in the boat — and they will sleep better and awake feeling recharged. Rough-weather sailing has a beauty of its own that can lighten the spirits.

This beauty is easily missed when you feel rotten. Drip a tiny recurring bead of salt water onto a sleeping bag, dry clothes, or into a food storage locker, and the luster of conquering the elements tarnishes like an old brass lantern. One minute contentment saturates the crew, the next minute everyone is saturated with salt water and feeling miserable. Combine this with seasickness and fatigue, and you now have a discouraged and disillusioned crew. It's no won-

der. Below, everything is sodden: food, clothes, and bedding. The stage is set for making poor judgment calls. The impetus for Mayday distress calls frequently is not because the boat is sinking; it's just to get off the miserable boat.

This is why it's important to locate and eradicate drips. Think "dry." Prioritize. If the budget is tight, forgo the installation of expensive electronics and install good-quality hatches and windows instead. Think about it. If the boat leaks, the electronics will stop working anyway. Build clothes lockers that are waterproof. If cushions come into contact with the hull, create baffles to prevent hull condensation from soaking them. Build drip catchers under windows. Install a reliable cabin heater to dry gloves and rain gear after bad weather.


Re-bed deck hardware every few years. Be aware that sealants can dry out in summer heat — especially around windows and chainplates. As the weather cools, the dried-out sealants contract, pulling away from surfaces. Drips will find their way into these places. It may not be obvious until the boat is being tossed around at sea, but by then it's too late. The boat suddenly leaks like a sieve. Crawling around on deck in big seas with a roll of paper towels and a tube of silicone is as fruitless as pumping the bilge with an eye dropper. Believe me. I speak from experience. 



as tangs and bolts, turnbuckles, and chainplates may have to be upped a size. (If the boat is more than 10 years old and has swaged terminal fittings, they should be replaced anyway.) Many racing sailboats have a rigging safety factor ratio as low as 1.5 to 1. A fully loaded cruising boat should have a ratio of at least 2.5 to 1 or higher.

Doing it yourself

Finding a boatyard to make these modifications is an option. However, one of the characteristics that successful cruisers share is having the confidence to build or fix anything on the boat. Self-reliance begins at the business end of a screwdriver. What better way to build confidence than by making the boat watertight? Most importantly, by personally working on your own boat, you'll understand the strengths, weaknesses, and limitations of the vessel.

The cost of a new production boat is appalling. The way I see it, a sailboat — any sailboat — is a platform from which adventure springs. Isn't that the real reason we take to the high seas — to seek adversity and then persevere in the face of peril? Aren't the best memories created when the rail is buried, the spray is flying, and a cozy anchorage is the destination? An older boat will take any of us to those cozy anchorages as easily as a brand-new boat. 

such as cans, books, anchors, tools, batteries, and liquids located amidships and below the waterline. Stowing heavy things low will help compensate for all the stuff that has to be stowed above the waterline. Let's face it, there is only so much optimum stowage space inside a sailboat hull. Stuff will have to be wedged into every nook and cranny. By exercising weight awareness, it will be possible to keep the boat in trim.

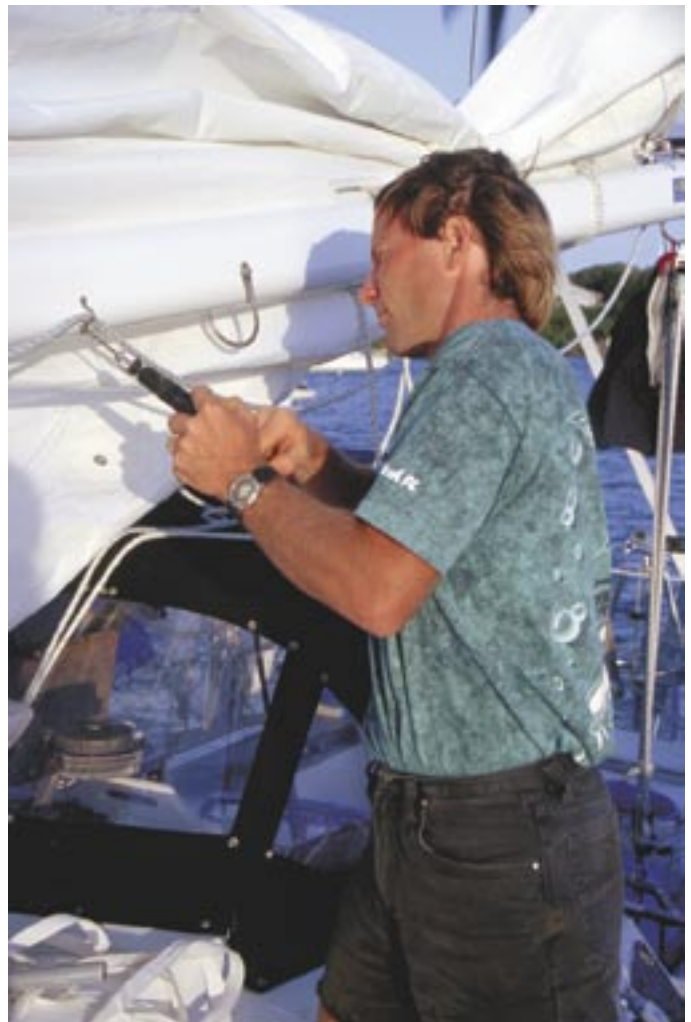
A common solution for extra water and fuel storage is to line the deck with jerry jugs. It's an easy and inexpensive alternative, but all those jugs will put concentrated loads in the worst possible place: outboard and up high. A few gallons are not going to cause problems, but I have seen as many as a dozen jugs lashed to the rail. That's nearly 500 pounds. It would be a lesser evil to add tankage under the V-berth or under the cockpit. Even though this increases pitching, a low center of gravity is maintained. Bonus: by adding extra tankage below, the deck will remain clear — allowing easier, and thus safer, crew movement.

Now that all the lockers are full, think about what might go flying if the cabin is tilted beyond 45 degrees by a sudden gust of wind or a big wave. Consider the following questions. Will the hinges and latches on locker doors resist the bombardment of shifting goods? Are the lift-up boards under the settee cushions locked in place? Are the tools secure? Are the water and fuel tanks properly installed? Do the batteries have adequate tiedowns? Does the galley stove have preventers to keep it from jumping out of the gimbal-brackets? Often, the most serious injuries on a boat are due to stuff flying across the cabin.

Mast and rigging

When a cruising boat is fully loaded with food, liquids, and spares for long-distance voyaging, its displacement is going to be radically increased. Boats under 30 feet take the biggest hit; their displacement might be increased by as much as 50 percent. What this means is the once snappy cruiser/racer is going to be stiffer, thereby putting increased loads on the mast and rigging.

It's important to recalculate the displacement and righting moment of a fully provisioned boat to ensure that all the rigging components can cope with increased loads. Although a mast section will usually be OK, things such



Good rigging, above, might save your life. The Martin children, raised on a boat, have no qualms about going aloft. Fixing the boat yourself not only saves money, it builds confidence. Dave does his own work, at right.

Love triangles

*This boat had been
“the other woman” at least once before*

by Ben Shaw

WHEN WE FIRST MADE ACQUAINTANCE SHE WAS IN MOBILE, Alabama, and I was almost 1,000 miles away in Washington, D.C. I had heard stories of couples meeting on the Internet and ending up together without first having even one real date, but this wasn't for me.

Two years of walking the docks had given me a good idea of what I was looking for in a cruising boat. I had heard good things about the Allied Luders 33. On the computer screen, this 30-year-old classic plastic sloop looked to be in good shape, and the price was right. But I couldn't buy her sight unseen; so two weekends later, I arrived in Mobile for a firsthand look. As I walked down the rickety dock, her classic curves and swooping lines captured my heart before I had even set foot aboard. Our time together was brief, as I had to return to Washington to finish work. Not until I moved aboard and started preparing for an extended cruise would I really get to know her.

When I returned three months later, she was right where I'd first seen her. We were alone together for the first time. As I lifted the hatchboards, the musty odor of a neglected boat filled my nose. I inhaled the scent and, peering below, imagined a cabin filled with the smells of life aboard. First, however, would come the odors of bleach, acetone, wet paint, and sweat.

I knew she was a well-constructed bluewater boat. The previous owner had died, leaving it to his son to sell, so the history of my new boat had to be deduced through detective work.

Clues to the past

Cleaning and refitting her was hard work, but a labor of love from the beginning. My brother soon joined me, and together we began to uncover clues to her past. Emptying the cluttered lockers was like going through old boxes in the attic. We found ourselves sitting in the cluttered cockpit, more interested in studying old, miscellaneous objects than in working. Piece by piece this boat, older than I was, began to reveal her story.

From under the pilot berth we pulled charts yellowed and creased with age. Charts of Long Island Sound, Bermuda, New England, the Intracoastal Waterway down to Florida... each chart a history of miles covered over the past 30 years.

Tucked in with the charts were old work orders and receipts that revealed information about past repairs and upgrades: what year the tiller had been replaced by a



wheel, when the Aries windvane had been added, when the rigging had been replaced. Rusty tools, left aboard by previous owners, provided additional clues as to what jobs had been performed.

The boat's personal life came alive when, amongst old papers, I found two pastel envelopes. Spotted with rust and water stains, the handwritten pages were love letters written during the dying days of a relationship. In emotional, cursive script, words of pain explained that sailing had been the cause. "It is ironic that you dropped my key in the mailbox just days before the sailing season truly began," she wrote to him in anger.

My boat had been loved before.

*"I found two pastel envelopes...
the handwritten pages were love letters
written during the dying days
of a relationship... words of pain explained
that sailing had been the cause."*

Shining lady

Together, my brother and I tackled one project after another in an attempt to make this lady shine again. We scrubbed and painted mildewed lockers, sanded and varnished faded wood. We replaced the windows and broken portholes, retrofitted an emergency tiller, and built a collapsible pedestal for the table.


She didn't have a chart table, one of my requirements. But I had been willing to overlook this because there was suitable space in which I could add one. That is, there was a suitable space after we ripped out an oversized icebox. Having cut my teeth on the smaller refit projects, it was time to tackle major reconstructive surgery. Yet when I took the power saw in my hands to make the first incision into her interior woodwork, I was more than nervous. The surgery was a success and soon the starboard side, just inside the companionway, was cleared and ready for chart table construction.

The early days weren't all fun and games. Before I could

begin working on the chart table she tested my commitment. Her stainless-steel water tank, built into the hull, sprang a leak. There was only one option. My brother and I cut up the teak-and-holly floor and removed the tank. This was no easy task; at one point I thought we had the tank as thoroughly stuck in the companionway as a couch in a stairwell. We repaired the tank, replaced it, and rebuilt the floor. The project was a bigger task than I had been looking to undertake, but in ripping the boat apart and putting her back together I had come to understand her more intimately than before.

The process of fixing her up and getting to know her took more than a year. Another year was spent getting us both prepared for bluewater passages and island cruising. Like any relationship, we had our ups and downs, but on dark blustery nights offshore it made all the difference that we understood each other.

It took a bit of convincing, but my girlfriend finally accepted this other woman in my life. Together, the three of us headed south toward the tropics. The boat carried us safely through the Atlantic and the Caribbean, down to Trinidad, and back to the Chesapeake. At the end of an eight-month cruise, we were living together like a close-knit family, the boat taking care of us, and we taking care of her.

Four years after first meeting her, my love for the boat is as strong as ever. She is a cruising boat built to sail the blue seas. But now my life is changing. I'm moving on, going back to school, spending too much time on land. It is going to be a sad day when what has been a beautiful relationship ends, but we are headed in different directions. Still, we'll always have our shared memories of Point-à-Pitre, Guadeloupe. 



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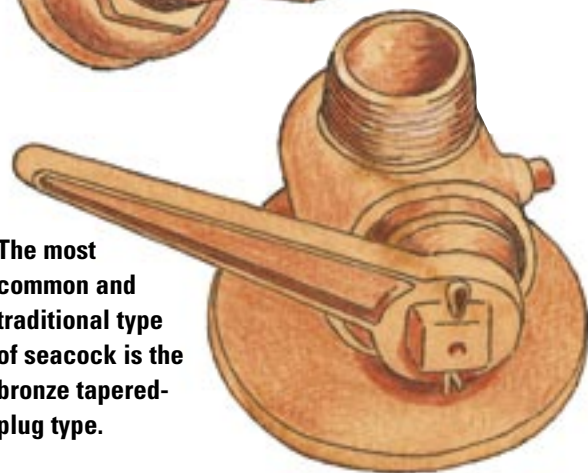
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Inspecting and maintaining seacocks

by Don Launer



Bronze gate valves are found in many boats, but have several disadvantages.



The most common and traditional type of seacock is the bronze tapered-plug type.



Ball-valve seacocks are increasingly more common. Although they require an occasional light lubrication, this is not necessary in order to maintain watertightness, as with a tapered-plug seacock.

THE HULL OF A BOAT IS DESIGNED TO KEEP THE WATER OUT, but most boats also have through-hull fittings and seacocks that are designed to allow water to enter the boat safely. These seacocks are metal or plastic valves that are screwed onto through-hull fittings. They can be opened or closed to allow you to control movement of fluids either way through the hull. BoatU.S. reports, however, that seacocks are responsible for a large percentage of the sinkings that occur every year. These sinkings are most often due to improper installation as well as a lack of inspection and routine maintenance.

There are three basic types of seacocks: the traditional bronze tapered-plug seacock with a handle that rotates 90 degrees between open and closed; ball-valve seacocks that also have a handle that rotates 90 degrees between open and closed; and gate valves, which require several rotations of a faucet-style handle to open or close.

The traditional material for seacocks is bronze, but there are also non-metallic seacocks available. Although many sailors are skeptical about these “plastic” seacocks, the best ones — such as those made from reinforced nylon marketed under the name Marelon — have enormous tensile strengths. For owners of steel or aluminum boats, these non-metallic seacocks eliminate the corrosion problem caused by the galvanic action of dissimilar metals.

If gate valves are used, they should be bronze, not brass, but even the bronze ones usually include parts, such as the stem, which are made of dissimilar metals, inviting trouble. Another problem with gate valves is that they do not have a positive action. In other words, you can never be sure if they are completely closed or whether there might be a foreign object lodged inside. Also, they usually don't have large flanges that can be secured directly to the hull and can therefore be broken off accidentally if subjected to a strong sideways blow.

Backing plates

All seacocks should be mounted with a backing plate or hull-reinforcement with bolts that go through the hull, backing block, and flange. Wood backing plates should not be used with synthetic seacocks, since the wood's expansion can strain the plastic. Also, whenever a through-hull is installed on a cored hull, the soft core must be cut away between the fiberglass layers and the void must be filled with epoxy and fiberglass to increase the compression strength of the area where the through-hull will be mounted.

The through-hull is the part on the exterior of the hull. It screws into the seacock, which is inside the hull. The threads on this mushroom come in either straight, termed NPS for “National Pipe Straight” (sometimes called parallel threads) or tapered, termed NPT for “National Pipe Tapered.” Proper modern seacocks have a female straight pipe thread on the inlet side and a tapered pipe thread on the outlet side, while ball valves and gate valves without the flange have tapered pipe threads on both the inlet and outlet. When installing a seacock, it is of vital importance

Layout and illustrations by Ted Tollefson

that the thread type on the outside through-hull fitting match that of the valve thread. Unfortunately, many boats have been built with, or later equipped with, a through-hull with straight threads and a valve with tapered threads. This gives about two threads of engagement and is easily broken.

Only heavy-duty reinforced hose should be fastened to seacocks, and it must be secured with two stainless-steel clamps, since ice inside the hose can exert enormous pressure and easily lift a single-clamped hose off the seacock tailpiece. As for those clamps, be sure you get them at a reputable marine-supply store. Very often those purchased at a hardware store will be labeled “stainless steel,” but only the band is stainless, and very soon you’ll find the screw mechanism rusted, weakened, and unusable. All through-hulls, except for the cockpit drains, should be closed whenever you leave your boat.


A selection of tapered softwood plugs should be kept on board. These can be used to stop the water flow from a deteriorated hose and inoperable seacock, or they can be pounded into place should there be a catastrophic seacock failure. If such a failure occurs, there’s not much time to react. A 1½-inch hole, 2 feet below the waterline, will gush more than 70 gallons of water a minute into the hull. For this reason, it’s a good idea to tether a wooden plug to each seacock, so one will be readily available if needed.

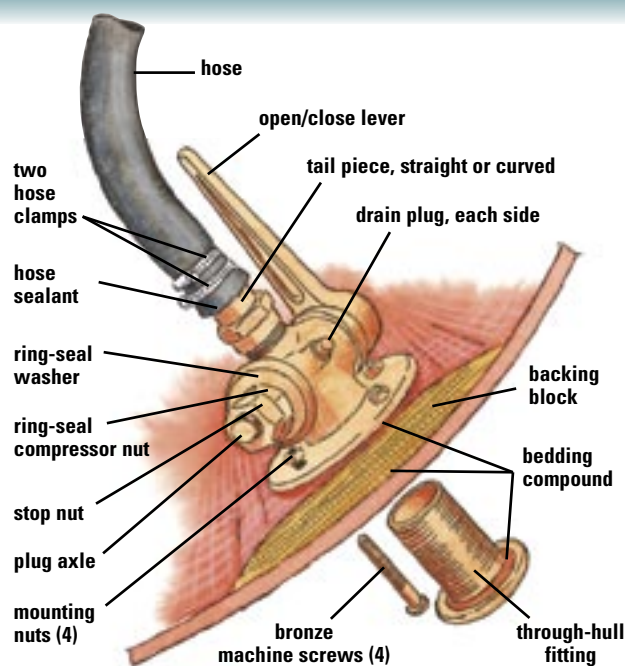
Tend to seize up

Most tapered-plug seacocks tend to become hard to rotate if they haven’t been used in many months. To prevent this seizing, they should be worked open and shut occasionally. (To make it easier to remember, I make it a point to exercise mine the first week of every month.)

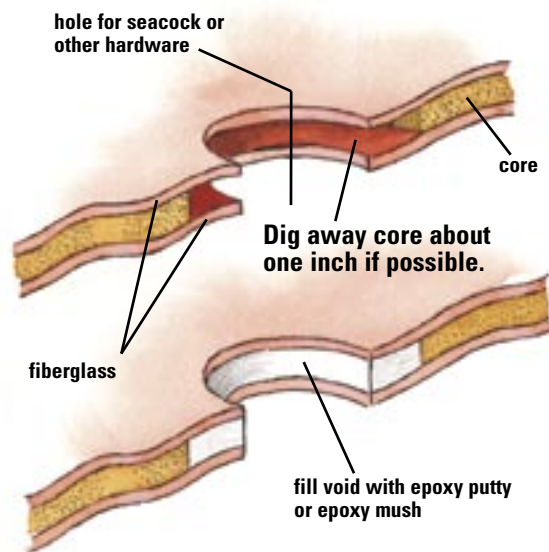
All seacocks should be serviced annually. Follow the manufacturer’s recommendations. For ball-valve seacocks, just a small amount of grease is necessary. For tapered-plug seacocks, disassembly, inspection, cleaning, and regreasing with a waterproof grease should be an annual task. Special seacock grease works better than an automotive grease.

Occasionally you’ll find that sand or mud may have scored the tapered plug. For light scoring, smooth out the scratches with an emery cloth. For heavy grooves, apply a valve-grinding compound and rotate the plug inside its housing until it fits snugly; then thoroughly clean both parts and regrease. Since tapered-plug seacocks depend on this grease for their watertightness, they should be greased liberally and not overtightened.

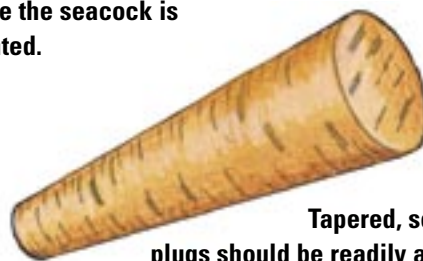
Finally, avoid using a seacock to supply water to both an engine and a saltwater galley pump, air conditioner, or watermaker. If this is done, very often the suction of an engine operating at high speed will draw air back through that second device and decrease the engine’s cooling capacity. This use of a “manifold” to supply more than one source from a single seacock has been the cause of many perplexing engine-cooling problems. 



All seacocks should be through-bolted to the hull, with a block of wood, or other material, on the inside of the hull to distribute the load.



With cored hulls, the core must be dug out to beyond the area of the seacock flange and then filled with a mixture of epoxy and glass fibers. This increases the compression strength of the hull where the seacock is mounted.



Tapered, soft-wood plugs should be readily available as an emergency repair.



Birdsong wakes him from his dreams.

*Stepping through the companionway,
he watches as the sun slowly brings color
back to the world.*

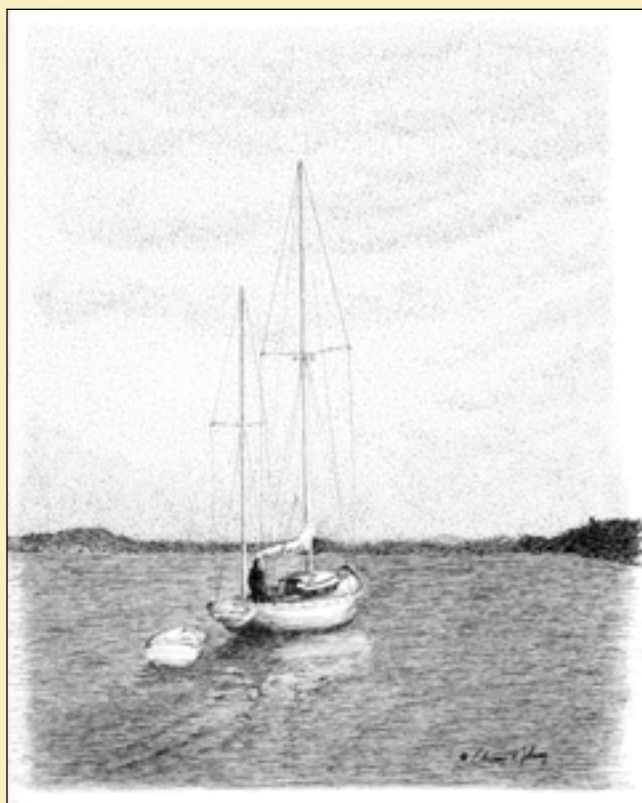
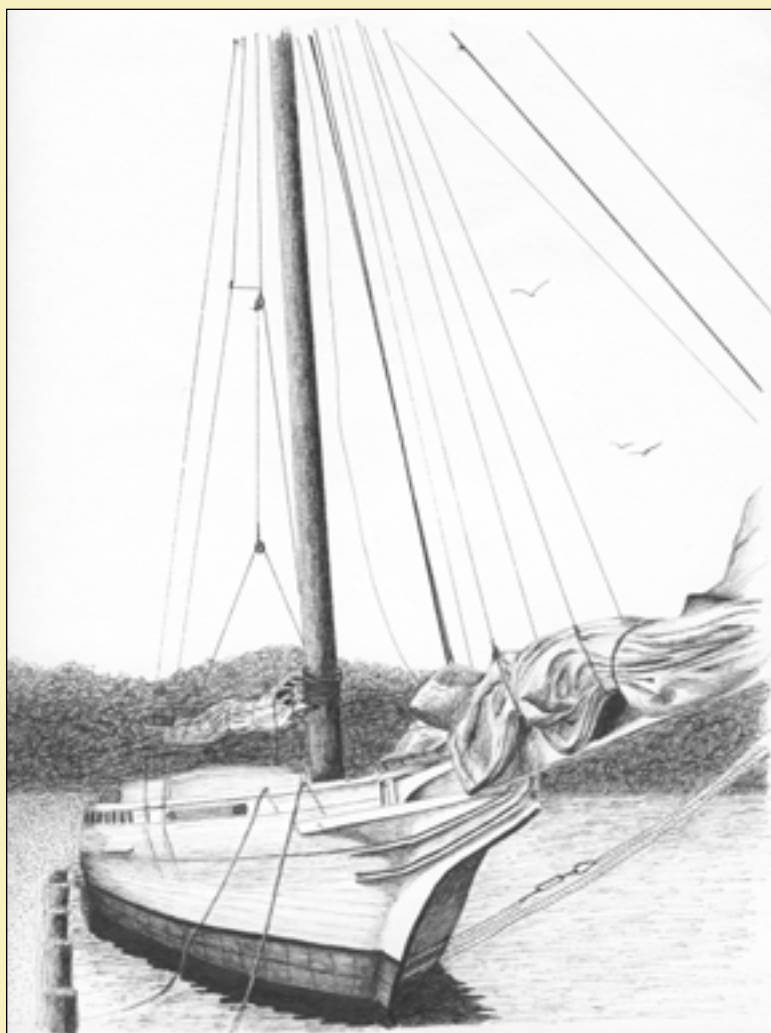
*Mist rises from the warm water
into the crisp fall air.*

A breeze stirs.

*The glassy water begins to shimmer
beneath the retreating gauze of mist.*

Raise the main, unfurl the jib.

Morning sail



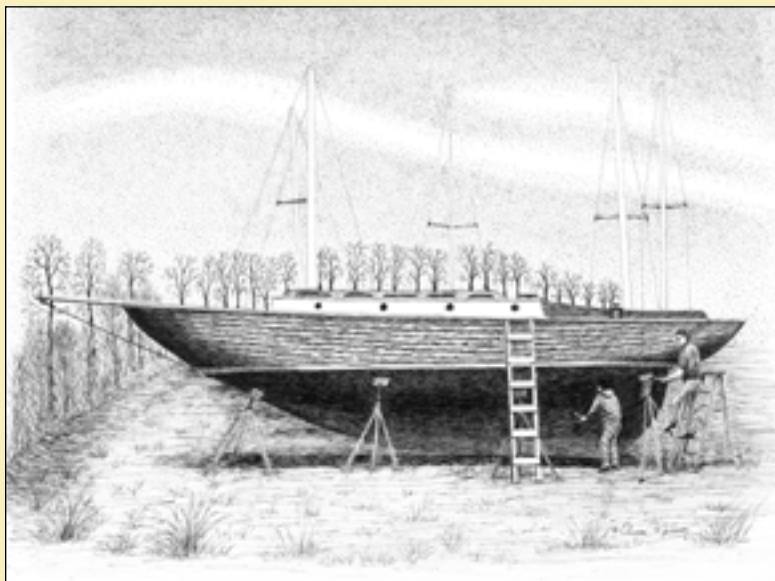
*The boat slips from its mooring, gently,
with slight ripples of wake.*

*Swallows dance around them
as waves trickle past the hull.*

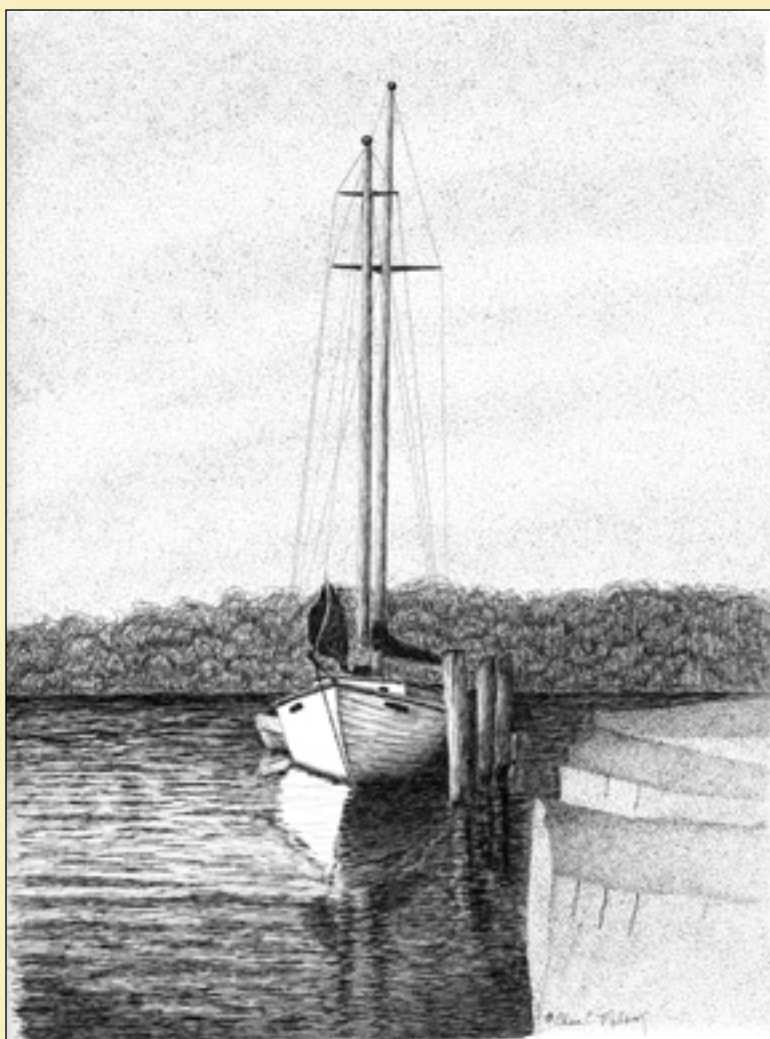
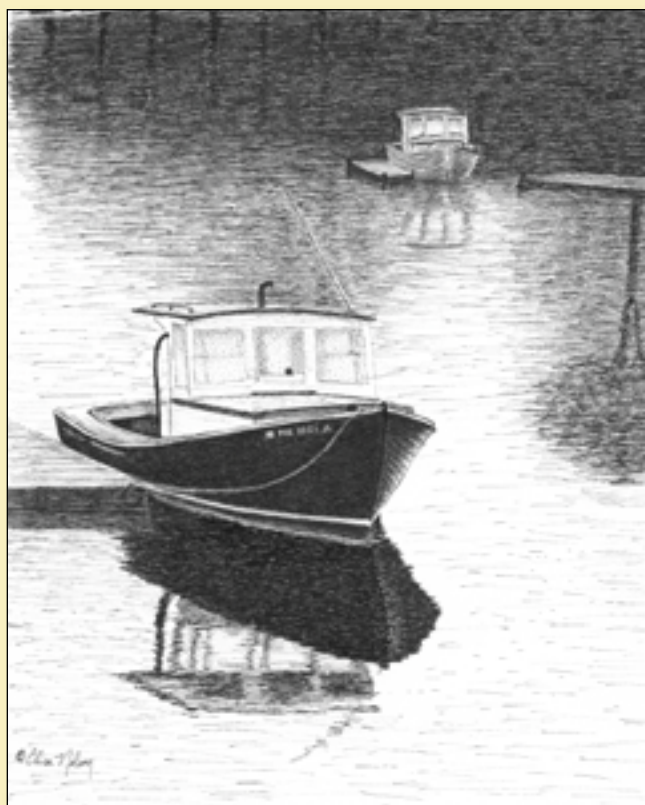
The wind has risen to be his partner.

*Together they can explore the day
before them.*

*Onward, with the wind,
just to see where it will take them.*



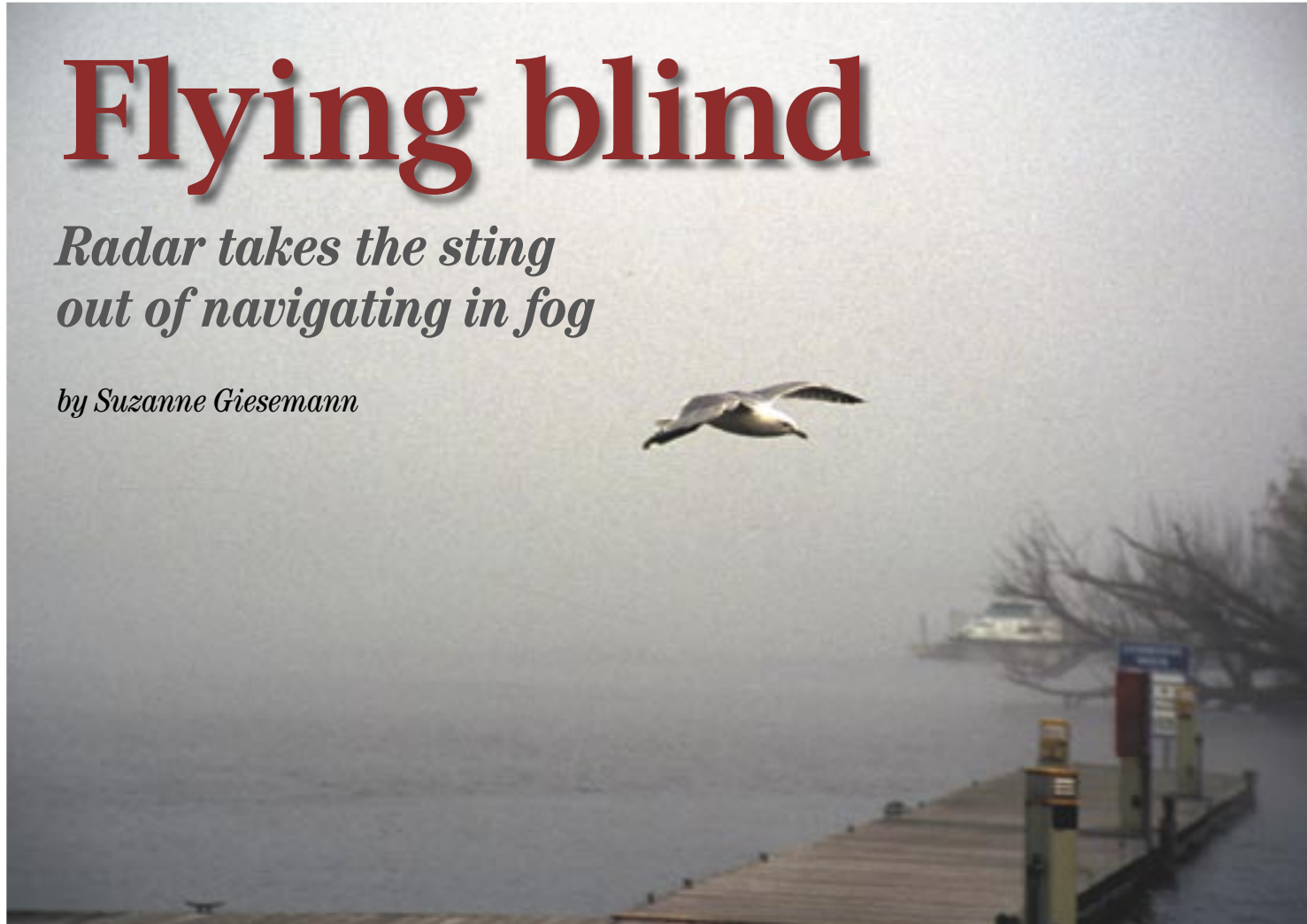
*Poetry and illustrations
by Elisa Nelson*



Flying blind

Radar takes the sting out of navigating in fog

by Suzanne Giesemann



Photos by Karen Larson

WE'D BEEN CRUISING THE COAST of Nova Scotia for a week but had yet to see it. Our charts said it was out there to the left somewhere, but the infamous fog was breaking records with its persistence.

"This is so unusual," the locals told us. "It's never lasted this long."

"Uh-huh," we thought. "Likely story."

Plowing through clouds that would ground a jetliner, we could only shake our heads at Environment Canada's less-than-helpful forecasts. Every half-hour they dutifully announced that visibility would be "fair in rain and poor in fog."

What an amazing grasp of the obvious.

It's no wonder fog causes such difficulty for the mariner. One classic weather text (William J. Kotsch's *Weather for the Mariner*) describes it as "a great swarm-like assemblage in the surface air of hundreds of thousands of water droplets so minute that it would take seven billion of them to fill a teaspoon."

Seven billion. No wonder it's opaque.

Fog comes in a number of flavors... advection, inversion, radiation,

expansion... I never can keep them straight, nor do I care to. Fog is fog, and it all looks the same to me. There could be 20 different types, but it all boils down to one basic problem: when the clouds close in around you, you might as well be blindfolded.

"For anyone who plans to sail in fog-prone areas, radar is no mere backup, it's downright indispensable... invaluable. We wouldn't leave port without it."

When we planned our passage to Maine and beyond, we knew to expect entire days of poor visibility, and we prepared for it. Minimalism is fine; plenty of cruisers sail far and wide without lots of bells and whistles. But we love the capabilities that modern gadgets add. After all, celestial navigation is useless if you can't see the

sun or stars. A dead-reckoning plot won't tell you what's out there when your horizon is limited to the end of your bowsprit.

Total refit

Our 1980 Morgan 46 was built for the charter trade. In her previous life, she had no radar nor any of the whiz-bang gizmos for sale in chandleries today. A total refit in 2001, however, brought her into the 21st century. She now carries a Raytheon Pathfinder SL70 radar with 24-mile range. We mounted a Firdell Blipper radar reflector and a Davis Echomaster to increase our odds of being seen by other vessels' radars. There is a Garmin 128 GPS mounted at the navigation station and two handhelds as backups.

While not necessary, but definitely nice to have, the upgrade also included a computer loaded with electronic charts and Nobeltec's Visual Navigation Suite. Linked to the GPS and navigation instruments, this generic laptop is the perfect poor-man's chart plotter.

The digital charts add a measure of confidence that we really are where we think we are, but for us

they're merely a backup. Should the computer ever crash, we're hoping we won't, because we rely first and foremost on good old-fashioned paper charts. While not nearly as much fun as watching the little green boat move across the full-color screen on our laptop, plotting our lat-lon with a stubby pencil keeps us focused.

With radar, it's a different story. For anyone who plans to sail in fog-prone areas, radar is no mere backup, it's downright indispensable... invaluable. We wouldn't leave port without it.

Our screen is mounted on the binnacle visible to the helmsman. Having sailed boats where the radar display is belowdecks and sailing now where I can instantly react to what I see, I'd vote for the binnacle configuration in a heartbeat. The instant feedback is critical when tracking an object headed our way.

Enter waypoints

Before getting underway in any weather, we plot our day's track on paper charts, then enter the waypoints in the GPS. Following this planned route gives us confidence that if we stay on track, we'll always be in deep water, free of obstacles. Little things like buoys, rocks, ledges, and lighthouses can ruin your day if you get lost in the fog. Knowing where we are on our route, we can now use that information to interpret our radar display.

For the uninitiated, the first glance at a radar screen looks like a Rorschach test gone wild. Depending on how the unit's tuned, the inky blots appear to blend together with no discernable pattern (see illustration on Page 49). With a little training and experience, however, the masses take on meaning. Shapeless shadows now mirror the contours of land on the chart. Small blips and larger blobs are suddenly significant.

Attitude is everything, and navigating by radar can actually be fun if you approach it like a game. You are at the center of the board, like the bullseye in a target. The object is to keep anything that appears on the screen from reaching the bullseye.

Relative motion plays an important role in the radar game. If you are sitting still and an object on the screen is moving toward you, it's obviously underway. If you are making way,

"You are at the center of the board, like the bullseye in a target. The object is to keep anything that appears on the screen from reaching the bullseye."

however, all objects on the screen will appear to move, even if they're stationary. The challenge, then, is to figure out what each mark represents and how it is moving in relation to you.

Easy to track

This can be quite simple if the screen is blank, as it is when you're far from land and there are no navigation aids within the set range. A single contact appearing on the screen is instantly noticeable and easy to track. Mark the position of a new contact on the screen when you first notice it. Note the time. Mark the position again a minute or two later. Using a soft plastic straightedge, mentally draw a line between the marks. The spot where that imaginary straight line goes past you in the center of screen is the CPA, or Closest Point of Approach. Our personal comfort zone dictates that to sail safely in fog, the CPA for a small vessel should be no less than ½ mile. The big ships shouldn't come within a mile. If we're uncertain of the vessel's

size, we err on the side of caution.

With this in mind, adjust the range rings on the radar so the inner ring represents your "safety zone." If that imaginary line in front of the blip is going to cross into your zone, prepare to maneuver for avoidance. A 30-degree course alteration away from your present course may be enough to avoid a close CPA. Small course changes are hard for the other boat to detect, and their effect on the CPA is harder for you to see. After you alter course, plot two more points and check the new CPA.

In general you use course changes as the Rules of the Road suggest for situations where there is good visibility. If the contact is steaming right down your course line on your bow, you are expected to turn away to starboard as you would if there was visibility. (*Quoting from the Coast Guard Auxiliary Boating Skills and Seamanship manual: "There is a special provision in the (COLREG) rules for a vessel which detects the presence of another vessel by radar alone. The law requires this vessel to take action in ample time if a change of course becomes necessary. If the other vessel is forward of the beam (and not being overtaken), the change of course should not be to port. If the other vessel is abeam or abaft the beam, the change of course should not be toward the other vessel." In practice, this first provision is a tough one. It means that if a vessel is forward of your port beam you would turn to starboard to avoid a collision. This special provision is sometimes debated. We do not invite you to break this rule. If this editor thought risk of collision existed in such a situation, he would turn to starboard onto a reciprocal course. If this editor simply wished to widen the CPA where risk of collision did not exist [yet] he would maneuver to take the stern of the other vessel, never crossing its bow. -Ed.*)

Now you can see that the blip will pass well out of range. Congratulations. You just won that round. Once the contact is past the new CPA, you can come back to your original course, keeping your eye on the contact to make sure no more adjustments are necessary.

If your chart is cluttered with lots



of things that go bump in the night, use your current position to identify every known contact on the radar screen. Working your way around the circle, pick out each one. Count the range rings to figure out its distance from you. Say there's a blip just outside the 2-mile range ring at the 1 o'clock position on the screen. You look at your plotted position on your chart and there, 2 miles ahead, just to the right of your track is a red nun. Bingo. You've identified that blip.

In reverse

This process works equally well in reverse. Look at the chart and pick out all charted objects within the range set on your radar. (In busy coastal waters, a good range is 3 to 6 miles). Your chart shows a green can 1 mile

"In the past, before we installed our radar, a foggy day meant staying at the pier. Now we simply fire that baby up and head to sea."

buoy or even whitecaps on a blustery day. Our radar is so sensitive that we've tracked fast-moving objects that turned out to be seagulls.

It doesn't take long to figure out which returns on your display demand your attention. As in the previous example where there was only one contact, any target that is going to pass within your safety zone, either because you approached it or it approached you, needs to be avoided. A

vicinity, you can issue a general "Securité" call. This lets everyone around you know you are there. If they think they're going to pass nearby, they will usually call to discuss the situation.

The big ships and smaller charter boats do this in fog all the time, so I felt like one of the professionals one foggy morning when I announced into the handset, "Securité, Securité, Securité, this is the sailing vessel *Liberty*, departing the Lunenburg Harbor anchorage on a course of one-one-zero, speed 5 knots, en route Battery Point. *Liberty* standing by on Channel one-six for all concerned traffic." No one answered my call, but after hearing a vessel at a nearby wharf sound one long blast to announce his imminent departure, at least I felt more secure.

When we first arrived in Maine, we were relative novices at the fog game, but after only a few hours of navigating through the soup we began to trust our system. In the past, before we installed our radar, a foggy day meant staying at the pier. Now we simply fire that baby up and head to sea.

Without the visual distractions of a clear day, I entertain myself trying to picture what's really out there. Is that medium-sized dot a sleek motor yacht headed for the big city, complete with private chef? Is that smaller one a rusty old fishing trawler surrounded by squawking gulls? This is fun for a while, but soon the mental images lose their importance. Big or small, the goal is to avoid contact with the contacts.

Large blob

So it was with no great concern that I glanced over my husband's shoulder at a rather large blob on the radar. We were approaching Halifax Harbor and traffic was picking up.

"That must be a big guy," I said as I stretched lazily, preparing to take over the wheel.

"I've been tracking him for the past hour," Ty said. "He was moving for a while and crossed our bow at 2 miles, but now he seems to have stopped. I'll bet he's waiting for a pilot."

Jerry Powlas searches for the next marker as *Mystic* powers through the maze of buoys and Lake Superior fog near the twin ports of Duluth, Minnesota, and Superior, Wisconsin. All photos taken in early summer fog.



off your port beam. If your radar rings are set at ½ mile, look at your screen. Sure enough, there on the second ring at 270 degrees relative to you at the center is the return from the can. One less thing to worry about.

If you have identified all the contacts on your radar as charted objects, you can relax until the next round of play. Those blips pose no threat as long as you stay on course. Any unidentified blobs, however, represent things that weren't there when the cartographer printed the chart.

Generally, the larger the return, the larger the contact. Large ships' blips are distinctive, often rectangular, but the smaller returns can be more challenging. What appears to be a small boat can turn out to be a lobster pot

simple course change will magically move the entire picture around you.

If there's any question about your safety in relation to one or more vessels in your vicinity, your VHF radio can play an important role. To notify a single vessel of your presence, try to raise him on Channel 16. You can state his location with a lat-lon or by referring to a known landmark, like this: "Vessel 1 mile east of Sandy Point in Broad Bay, this is the sailing vessel *Liberty* two miles off your port beam."

Securité call

Once he answers, switch to an agreed-upon working channel and discuss how you will pass each other. If the vessel fails to respond to your call, or there are a number of vessels in your

“Passing distances were closer than we would have liked in this busy harbor, and we glanced at each other warily.”

We had intersected the shipping lanes and now changed course 90 degrees to parallel the channel. As we turned, the large blip slowly moved around the screen.

“Yeah, he’s just sitting there,” I confirmed by studying the relative motion.

We continued toward the harbor, and I monitored our progress in relation to the blob. It appeared to move down our starboard side, but that was only because we were pulling away from it. Another contact off our bow drew my attention when it ghosted down our port side unseen, half a mile away. Passing distances were closer than we would have liked in this busy harbor, and we glanced at each other warily. Until then, the only sound in this strangely silent world was the mournful moan of a fixed foghorn well west of us. Now the passing vessel’s engines throbbed loudly through the mist, their rumble greatly amplified in the thick air.

With a number of new contacts on the screen, Ty stepped forward to sound our fog signal. One prolonged and two short blasts announced to anyone within earshot that we were a sailing vessel making way.

Roar from aft

Suddenly, a wall-shaking “WHOMMMMMMM” blared up our transom like a roaring locomotive. Like cartoon characters with perfectly round eyes, our heads snapped around. Seeing nothing through the blasted whiteness, our eyes immediately turned to the radar screen. The attention-grabbing horn sounded as if it were mere meters away, but there was nothing astern of us save the contact we’d been tracking for over an hour.

A radar display requires some interpretation. In this comparison, the position of the boat is marked by the symbol GP and yellow dot in the center of the chart plotter (computer display). On the radar image, the ship’s heading is up. Radar paints the “leading edge” of land masses. Although the radar display appears as a bird’s eye view, in reality the radar antenna is too low to give an image identical to that of a chart plotter.



“Yep, he’s a big guy, all right!” I gulped, triple-checking that the large blip was still a mile away and growing no closer.

Ten minutes later we emerged from the fog as if stepping through a curtain. Like a movie suddenly playing on a blank screen, Halifax Harbor lay before us, sparkling under a clear, blue sky. I turned the wheel over to Ty and busied myself preparing for our arrival.

“Look at that,” Ty said, interrupting my tidying.

Thinking he was pointing at something on the skyline, I casually peered around the dodger.

“Oh my God!” I exclaimed, as a

container ship the length of 10 football fields passed us to starboard.

We had crossed his bow a mile and a half ahead, but I hadn’t seen him on the radar before turning over the wheel. Glancing at the behemoth, I studied the screen to figure out how he had surprised me. He had been berthed at the wharf around a spit of land ahead of us. His large radar return had blended in with the ill-defined land mass before he made the turn for open water. Ty had picked up his track as the ship left the pier. Clear of the narrow neck, it now reflected a well-defined blob in motion.

“That’s what we’ve been out there with,” I said. I couldn’t help but shudder, even though we’d been in no danger. I noted that this ship’s return was the same size and shape as the vessel that had blasted its horn earlier and thought that sometimes it’s better *not* to be able to see!

We had successfully maneuvered around numerous such contacts because we trusted our equipment and our skills. Watching this big ship disappear behind the curtain from which we’d just emerged, my confidence returned. Had the fog extended all the way into the harbor, I knew we would have seen him on the screen just as clearly as we had seen him minutes before with the naked eye.

Navigating in fog is neither relaxing nor pleasant, but it doesn’t have to be something to fear. With the proper equipment and the ability to interpret what that equipment is saying, any sailor can safely sail through the maddening mist. ⚓

For further reading...

The Real Time Method of Radar Plotting, by Max Carpenter and Wayne Waldo, will show you how to use your radar to plot CPAs and maneuver to avoid collision.

One-Minute Rules of the Road, by Charlie Wing, will help you understand the COLREGS, including Rule 19 which is contact by radar alone. These and other books can be found at <http://www.goodoldboat.com/bookshelf.html> or by calling 763-420-8923.



The woodpile...

Memories are ignited in the firewood

by Geoffrey Toye

THE WOODPILE. SORTING OUT THE HEAP OF DRIFTWOOD HARVESTED in haste after the high tides and high winds of the equinox, now there is time for reflection as fragments are set aside for splitting, larger pieces to be sawn, while some are just the right size and brittleness to be snapped with a smart rap against a stone.

How suddenly the days became shorter this year; winter, when it came, approaching quickly and with stealth. The sun was still bright well into November, the days warm. But there was an edge to the air, a sudden shiver catching one un-awares, while faraway unfamiliar sounds made one look up to see mysterious long-necked birds against the north light.


As I turn over the fragments of wood, each has its tale. Logs with the moss and lichen that tell of a long life in the forest upriver, far from the sea. That will smell of the land when it burns. Flaking paint on a sawn timber, a vessel wrecked in the gales of another year, frayed rope still belayed with strands of weed on a long-forgotten cleat. New paint, a recent loss. A length of gunwhale and part of a varnished hatch, a caring owner. Was she lost at sea, a parted mooring warp, or crushed by another's neglected charge?

Here green paint and diagonal planking, Jack's old fishing boat broken up in the creek. I recall her smart and strong, rolling her decks under at work in deep water. There gray paint, a remembered curved beam. She was a double-ender, a well-kept boat, her master's pride and joy. He was a stern man, and as a boy I was in love with his pretty daughter who would favor me with a wave from her deck. He is gone now, and his boat passed on to one less caring. I saw her towed in astern of the lifeboat, then she dragged her anchor in a gale and fetched up on a lee shore where she was soon broken. I cannot bring myself to burn that curved beam.

It was not really fireside weather until the end of November, but there have been gales. The day after I took my little sloop up the creek to her winter berth two boats dragged their moorings, and on the following springtide an old Norwegian harbor boat, 27 heavy feet of her, broke clean adrift, and I found myself out on the marsh at three in the morning driving pegs in and lashing her down. High water the night after that was

mirror calm, and she came back to her mudberth on the bank without a murmur.

Getting dark already and a chill with it. Time to check the mooring, then light a fire. I enjoy winter — walks on the beach or across the saltings, then home to hot buttered toast and a bright fire crackling in the stove with the boat safely up the creek and the wind playing tunes in her rigging.

A good time to dream dreams of the long days of summer gone and perhaps to see visions, pull out the admiralty charts and plan voyages for the long days and starry nights to come. 

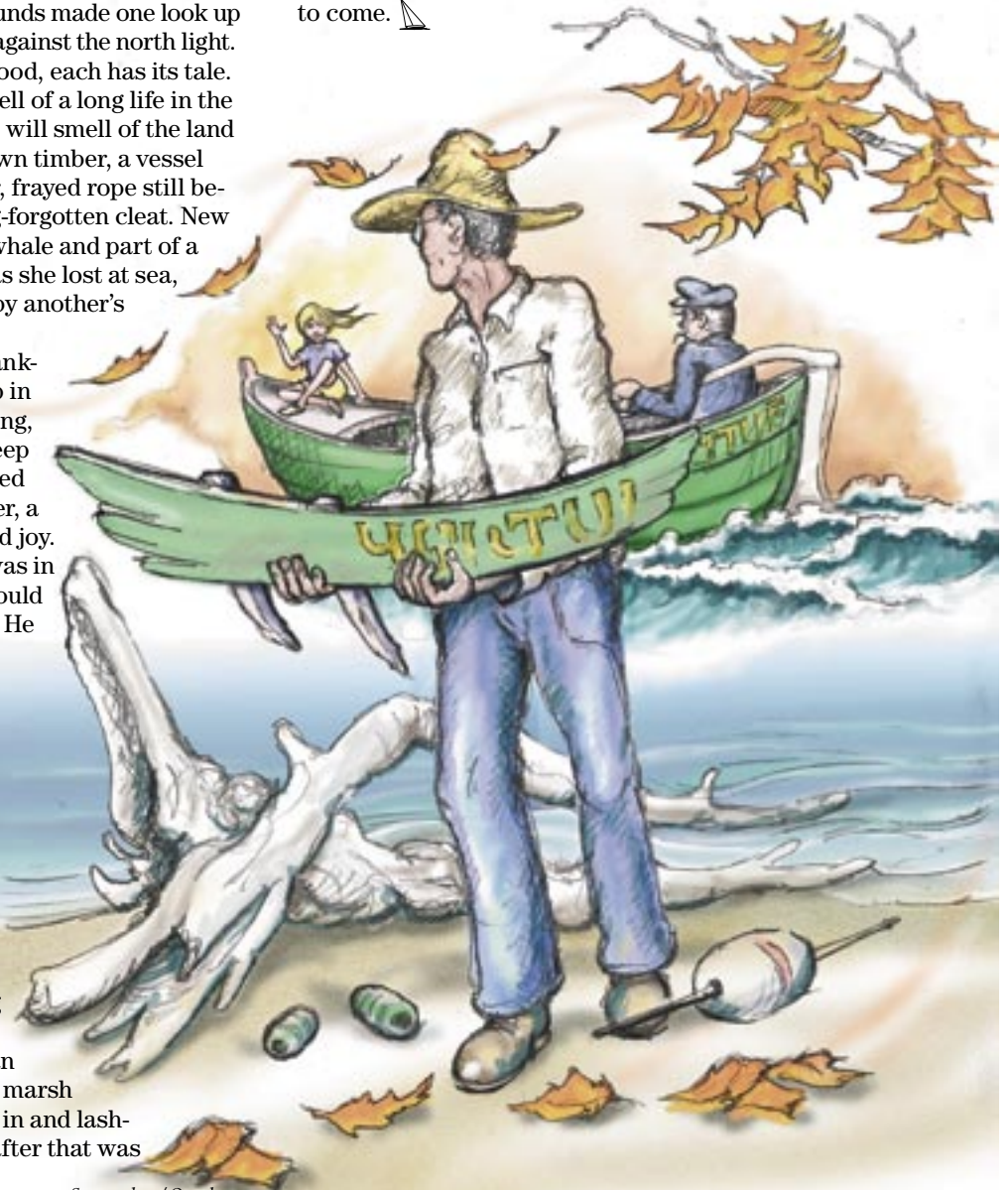


Illustration by Fritz Seegers

Checklists galore



Are you a forgetful trailersailor? Don't fret. Here's the list to end all checklists

by Gregg Nestor

I PRIDE MYSELF in mentally warehousing innumerable, disjointed facts and recalling them at will. My wife says my brain is becoming a compendium of useless information, such as the name of the Lone Ranger's nephew's horse, for example. When it comes to some aspects of my sailboat, however, I don't rely on my memory. I use checklists. This way I ensure

"The on-the-road checklist highlights major items that can potentially cause you problems while traveling if they are not periodically addressed and maintained in proper order."

that everything that needs to be done is done. As a trailersailor, I have the responsibilities of launching and retrieval as well as taking care of the trailer and the tow vehicle. Checklists make life a lot easier. The following checklists have been developed over time and address a variety of sailing-related tasks. They are by no means complete, owing to the fact that not all boats, trailers,

Trailer pre-departure checklist:

- ☐ Tire pressure
- ☐ Wheel-bearing grease
- ☐ Lugnut tightness
- ☐ Spare-tire pressure
- ☐ Ball greased
- ☐ Trailer-to-tow-vehicle connection solid
- ☐ Coupler locked
- ☐ Electrical connection made
- ☐ Break-away cable, if equipped with brakes
- ☐ Trailer-brake, turn-signal, and running lights working
- ☐ Safety chains attached and crossed
- ☐ Tongue jack up and locked
- ☐ Boat secured at bow
- ☐ Winch locked
- ☐ Boat tiedowns secure
- ☐ Centerboard down and resting on cross-member
- ☐ Rigging, boom, and mast secured
- ☐ All gear aboard properly stowed
- ☐ Motor removed or secured for towing
- ☐ Rudder removed or secured for trailering
- ☐ License plate on and registration valid

Tow vehicle pre-departure checklist:

- ☐ Fluid levels
- ☐ Engine oil
- ☐ Transmission
- ☐ Battery electrolyte
- ☐ Power steering
- ☐ Brake fluid
- ☐ Radiator
- ☐ Windshield washer
- ☐ Condition of radiator hoses and cap
- ☐ Battery terminals corrosion-free and tight
- ☐ Fan-belt tension and condition
- ☐ Air filter
- ☐ Tire pressure and condition
- ☐ Heavy-duty flasher
- ☐ Brake, turn signal, running lights
- ☐ Fuel level
- ☐ Ball matches trailer hitch

Emergency trailering equipment checklist:

- ☐ Trailer jack
- ☐ Lug wrench for trailer lugnuts
- ☐ Trailer spare tire
- ☐ Spare pair of wheel bearings
- ☐ Wheel-bearing grease
- ☐ Tire-pressure gauge
- ☐ Wheel chocks
- ☐ Spare light bulbs
- ☐ Spare fuses
- ☐ Duct tape
- ☐ Spare line and tiedowns
- ☐ Assortment of tools
- ☐ Flashlight
- ☐ Breakdown triangles/flares

“While the pre-sail checklist is by no means complete, the four items it does contain are routinely neglected and should be considered each time you set out.”

and sailing grounds are the same. Besides, each skipper has his or her own way of doing

things. So use these checklists as a guide and massage them into your own personalized version.

While it's always a good idea to check the tow vehicle, boat trailer, and sailboat just minutes before leaving, some things should be done the day before departure. Then if a deficiency is found, there is time to take corrective action. In any event, double-checking never hurts. The pre-departure checklists will help you to ensure the safety and security of your towing rig and minimize any on-the-road problems.

When towing a sailboat and trailer, be sensitive to any unusual sounds or handling characteristics that you may encounter. Should something alert you, pull over to the side of the road, stop immediately, and check it out. Make periodic on-the-road checks of your towing rig at hourly intervals. The on-the-road checklist highlights major items that can potentially cause you problems while traveling if they are not periodically addressed and maintained.

Do everything you can to ready your craft for launching before moving to the launch ramp. Especially with a sailboat, you have some work that needs to be done before you're ready to launch. There's no point in holding up others while you accomplish it. The pre-launch checklist will help you address those activities.

Launching ramps come in all degrees of slope and condition. Look your intended ramp over carefully before you back down. Also familiarize yourself with the launching checklist. Remember that your tow vehicle isn't waterproof.

Whether you sail from a trailer, slip, or mooring, it's prudent to conduct a pre-sail check. While the pre-sail checklist is by no means

complete, the four items it does contain are routinely neglected and should be considered each time you set out.

Before you set sail, familiarize your guests with your boat and its safety equipment. The degree of detail necessary depends on several factors, including each guest's sailing experience and familiarity with your boat as well as on the length of the cruise. Use the guest-briefing checklist and the outboard-motor-training checklist when dealing with guests or new crewmembers.


Before leaving your sailboat at its slip or mooring, go over those post-sail items that will help to ensure that your boat will be safe and secure in your absence.

Retrieval is basically the inverse of launching. Use the retrieval checklist in this process. Remember that pulling a boat and trailer up a wet ramp, especially if it's steep, is almost always harder than backing down the ramp. Therefore, once the boat's bow is secured to the trailer, use low gear and gently apply the gas.

When the sailing season's over, it's time to store your sailboat. At no time is there a greater opportunity to prevent problems than at layup. By using a checklist, you can just about guarantee that your spring commissioning will go more smoothly.

Look at your winter layup checklist from last year. You'll need to undo some of those items during spring commissioning.

No matter how comprehensive the checklist, if you don't actually use it, the chances are that something will be missed. While sailing is not rocket science, it is analogous to flying. Pilots use checklists all the time to ensure a safe and efficient flight. Why not adapt and benefit from this low-tech, yet almost foolproof, technique?

By the way, the Lone Ranger's nephew's horse's name was Victor. 

On-the-road checklist:

- ☐ Wheel-bearing temperature
- ☐ Slacked-off lug bolts
- ☐ Tire pressure
- ☐ Brake, turn signal, and running lights
- ☐ Security of boat tiedowns
- ☐ Security of rigging, boom, and mast

Pre-launch checklist:

- ☐ Check for overhead obstructions
- ☐ Remove and store travel cover
- ☐ Undo all tiedowns, except winch/bow connection
- ☐ Install drain plug
- ☐ Step the mast
- ☐ Attach boom
- ☐ Bend on sails and secure (do not hoist)
- ☐ Check to see that nothing protrudes from the boat to snag on the trailer frame
- ☐ Rudder off or in the up position
- ☐ Centerboard up all the way and pendant made fast
- ☐ Motor up
- ☐ Unplug tow-vehicle-to-trailer electrical connection
- ☐ Attach launch lines to bow and stern
- ☐ Attach fenders
- ☐ Assure all gear is aboard and secured

Launching checklist:

- ☐ Man the launch lines
- ☐ Slowly back down the ramp
- ☐ Chock wheels of the tow vehicle
- ☐ Stay in tow vehicle with foot on brake, engine on, ready to pull forward (if needed to launch, set parking brake, engine off, transmission in "park," if automatic; "first," if manual)
- ☐ Launch boat
- ☐ Tie off boat to dock
- ☐ Pull tow vehicle and trailer to parking area

Pre-sail checklist:

- ☐ Obtain a weather report
- ☐ File a float plan. If the sail is going to be more than a few hours, a float plan should be filed with the nearest harbor authority (not USCG), yacht club, friend, or relative. If trailering, leave a copy under the windshield of your tow vehicle.
- ☐ Check the bilge for water
- ☐ Turn battery switch to "on" position

Guest-briefing checklist:

- ☐ Point out life jackets' location and fit each guest
- ☐ Operation of engine
- ☐ Sail handling
- ☐ How to operate radio
- ☐ Location and operation of fire extinguisher(s)

- ☐ Location of first-aid kit
- ☐ Location of signaling equipment
- ☐ Crew-overboard procedures
- ☐ Operation of head
- ☐ Operation of stove
- ☐ Potable water system's operation, capacity, and conservation
- ☐ Location of electrical switches
- ☐ Operation of battery switch
- ☐ Anchoring techniques
- ☐ Stowage
- ☐ Sleeping arrangements
- ☐ Safety harness
- ☐ Watch schedule
- ☐ Familiarize with checklists

Outboard motor operation checklist:

Starting:

- ☐ Moor boat securely
- ☐ Fuel tank full
- ☐ Fuel line connected properly to both tank and motor
- ☐ Fuel tank vent open
- ☐ Gearshift in "neutral" position
- ☐ Turn throttle to "start" position
- ☐ If electric start, battery fully charged
- ☐ Pump primer bulb until firm
- ☐ Pull out choke
- ☐ Slowly pull starter cord until resistance is felt, then pull starter cord in short swift motion, OR
- ☐ If electric start, turn battery switch to "on" position and turn key to engage starter
- ☐ Once engine engages, push choke in. (If engine does not start, see trouble-shooting section of your engine manual)
- ☐ Check for cooling-water discharge. (If no discharge, turn off engine and check for fouled water intake)
- ☐ Set throttle to "idle" position

Stopping:

- ☐ Gearshift in "neutral" position
- ☐ Turn throttle to "idle" position
- ☐ Push engine stop/kill button or if electric start, turn key "off" (if no button, pull choke all the way out)

Post-sail checklist:

- ☐ Turn off all electrical equipment except bilge pump, which should be wired directly to the battery
- ☐ Turn battery switch to "off" position
- ☐ Stow all gear
- ☐ Remove and stow or cover all sails
- ☐ Secure halyards/running rigging
- ☐ Secure tiller
- ☐ Remove all trash for proper disposal
- ☐ Remove all perishable foodstuffs

- ☐ Secure all hatches and portlights
- ☐ Make a list of items that need to be brought on board or attended to
- ☐ Double-check all the dock/mooring lines
- ☐ Wash the deck and cockpit
- ☐ Lock the boat

Retrieval checklist:

- ☐ Attach and man the launch lines
- ☐ Raise the centerboard and secure it
- ☐ Remove or raise the rudder into trailering position
- ☐ Raise outboard motor
- ☐ Connect winch cable to towing eye on boat
- ☐ Pull/float boat onto the trailer
- ☐ Lock winch, securing the boat to the trailer
- ☐ Pull up ramp to the parking area
- ☐ Lower centerboard
- ☐ Remove and stow sails
- ☐ Lower mast and secure it, along with boom and rigging, for travel
- ☐ Remove or secure outboard motor for trailering

*"By using a checklist,
you can just about
guarantee that your
spring commissioning
will go more smoothly."*

- ☐ Secure all loose items
- ☐ Remove drain plug
- ☐ Secure boat fore and aft
- ☐ Replace boat cover
- ☐ Plug in tow vehicle to trailer electrical connection

Layup checklist:

Belowdecks:

- ☐ Remove sails, bedding, cushions, and spare cordage (clean, repair, dry and store in warm dry location)
- ☐ Remove electronics
- ☐ Remove flashlights and equipment with dry-cell batteries
- ☐ Remove all foodstuffs
- ☐ Drain potable water system or charge it with non-toxic antifreeze
- ☐ Leave all cupboards and storage bins open
- ☐ Remove all traces of water from the bilge
- ☐ Clean and grease all seacocks and leave open

- ☐ Remove and service Porta Pottis or flush, disinfect, and drain all heads
- ☐ Clean, disinfect, and dry all surfaces (inside and out of storage areas also)

Topside:

- ☐ Inspect and clean all standing rigging (repair or renew as required)
- ☐ Store loose shackles, swivels, clevis pins, etc., in a sealed container (prior to storage, spray them with light oil or dry lubricant)
- ☐ Inspect and clean mast and boom (clean and lubricate all luff grooves, channels for slugs, and sheave boxes. Repair as required)
- ☐ Check all fittings for tightness, corrosion, and operation
- ☐ Inspect, clean, and repair all sails (after dry, loosely flake and store in warm dry location)
- ☐ Remove all running rigging
- ☐ Inspect, repair, and replace running rigging as required
- ☐ Wash and dry all running rigging before storage
- ☐ Clean and service all winches

Battery:

- ☐ Top off electrolyte with distilled water
- ☐ Clean battery terminals of any corrosion
- ☐ Charge battery fully
- ☐ During storage, periodically charge battery (better yet, float charge)


Trailer:

- ☐ Inspect and repack wheel bearings
- ☐ Block up trailer frame, taking weight off tires and springs
- ☐ Cover tires to protect from sun's ultraviolet rays

Outboard motor:

- ☐ Follow manufacturer's layup procedures
- ☐ Empty all gasoline from auxiliary tank and store dry

Spring commissioning checklist:

- ☐ Lubricate seacocks
- ☐ Close all seacocks that were opened in the fall
- ☐ Inspect all hoses and hose clamps
- ☐ Inspect fire extinguisher(s)
- ☐ Inspect flares and check expiration date
- ☐ Inspect bilge pump and float switch
- ☐ Drain and flush potable water system if laid up with non-toxic antifreeze; if laid up dry, flush with baking soda and water to freshen
- ☐ Check electrolyte and charge levels of battery before reinstalling. 

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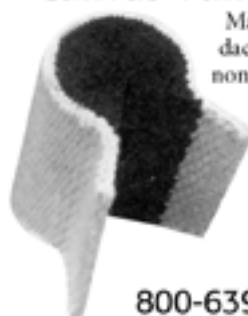
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by Henry Cordova



Illustrations by Fritz Seiders

“Steve described himself as
‘a recovering dentist’ who had
forsaken the suburban rat race and
was striking out for the South Seas.”

Fortunately, the captain seemed to know what he was doing and, in spite of his lubberly and unseamanlike house-keeping, the boat was well managed. But like even the best of seamen, the skipper had his touch of first-day-out seasickness and soon went below to try to sleep it off. I was left to the first watch, thanks to my immunity to the mal-de-mer.

As the afternoon wore on, the storm increased. Piled higher and higher by the unforgiving nor'wester, the seas grew, following ever faster from behind, towering over the boat as if to crush her, then sliding beneath her at the last moment to break with a crash and roar just ahead. The word “billows” kept coming into my mind, from either Melville or Robert Louis Stevenson’s “The Land of Counterpane,” I couldn’t remember which. I could never see why the word “billows” was used; now it made perfect sense.

I had little to do besides contemplate my situation; the small scrap of sail forward and the windvane kept us

pointed downwind where we needed to be in this weather. *Haiku*, a squat ugly duckling of a boat, was thriving under these conditions. She was built for this. Her hull lines and sturdy rig carried the memory and experience of the British mariners who had developed this shape and this balance over a thousand years of tragedy and landfall. If her crew exhibited due prudence, she would not let them down. For my part, I realized I had been offshore in small boats before, and I had been out in bad weather before, but I had never been offshore in a small boat in bad weather. The sky and sea turned a monotonous gray and the boat’s course, not quite parallel to the coast, gradually diverged farther out to sea. Dark came early in the overcast, and the last sight of land was of the lights of Monterey. Soon we were driving off alone into the darkness.

GPS fix

I hoped the skipper would duck into Monterey Bay for some shelter, perhaps even spend the night there or in Santa Cruz. It was not to be. He

was up, refreshed from his nap, and took the watch. He took a quick fix on the GPS, plotted the position on the chart, and laid out our night’s course. I made it a point to look over his work. He seemed to be a fairly competent navigator, so I could sleep with some sense of security.

The rest of the equipment was not so reassuring. The radio transmitter was not working, although the receiver was functioning. In this storm, we seemed to be the only non-commercial traffic on the water between San Francisco and Point Conception. I turned to my berth, covered with gear, where Fang had settled in the only soft spot left. For a while I thought I would have to fight him for it, but I eventually persuaded him to move and crawled in, not even bothering to remove my dripping foulies. There was nowhere to put them, and I was too tired to worry about it.

I never sleep well the first night in a strange bed, and this time was no exception. Besides the frantic symphony of motion below and the crash and thump of loose cartons and cans and other detritus, the green glare of the GPS screen was right in my face. Outside, the wind howled louder and louder as the night wore on, the jib flapped, the halyards slapped against the mast, and there was the constant sound of waves crashing against the hull and rolling under the keel. The groans and sounds of hull and rig were normal — even reassuring — nothing unusual or unexpected, but I would need some time to get used to this particular boat’s song.

Snoring crew

At midnight the skipper woke me up. I know I slept because he complained about my snoring, but it couldn’t have been for very long. Still, I was looking forward to getting on deck, the stuffiness and stench below was starting to get to me. I snapped my safety line to the pad-eye by the hatch and crawled out to the port side of the cockpit. My instructions were simple: steer due south (the skipper had disconnected the windvane because the wind was

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from the north now, and self-steering gear was not effective with the wind directly aft).

He also warned me that Fang had installed himself underneath the life raft (it was lashed to the cabin roof) and refused to come out. He wanted to practice deploying the raft, in case it became necessary to do so, but that would mean crushing the beast between the hatch cover and the raft. In order to remove the raft, it was necessary to slide the hatch out of the way, and the cat was in its path. Fang was determined not to move, and I didn't think he was likely to feel any differently even if the boat were on its side and filling with water.

The world outside had changed. It was totally dark, but the sky had cleared, a full moon was overhead, and the sky was filled with stars. The mountains of water made their presence known by occulting the stars behind them, and in certain directions the sea had transformed itself into a bubbling molten silver. The temperature had dropped, and it was further exacerbated by the biting wind and the spray, which was now pretty well constant. I was well protected by my foulies, but my hands and feet were bare, and they were soon stiff from cold. The water, as always in the Northern Pacific, was deathly cold. It was an arctic desolation, an alien planetary landscape from the edge of the universe, which, after all, is exactly what it was. I had seen the sea like this before but never from a small boat close enough to the water to reach down and touch it. It was as beautiful as it was terrifying.

Feet braced

Without Iron Mike hooked to the tiller, I had to work now. I sat with my back to the cockpit bench, my feet braced on the opposite side, both hands on the tiller, and my eye on the steering compass. After the initial period of learning the boat's response, the steering became routine. Most of the time the tiller was limp and the boat raced downwind like a living thing. Occasionally some vagary of wind or wave would bring her head around, and some effort was required to swing the boat properly under the compass card as it locked onto the earth's magnetic

“Piled higher and higher by the unforgiving nor’wester, the seas grew, following ever faster from behind, towering over the boat as if to crush her, then sliding beneath her at the last moment to break with a crash and roar just ahead.”

field. The longer I delayed, the harder I had to work and the more likely I was to overshoot and be forced to correct. Eventually, the brain mastered the feedback and the boat's wake trailed behind in a straight line over the rolling sine waves of the sea.

The helmsman's hands are where the sky and the sea, the sail and the hull meet: the microscopic boundary between the atmosphere and the ocean where the boat travels with man at its precise center. Of all of man's artifacts, a sailboat is most like a living thing. It reacts to the chaotic forces of nature not only through the hands of its crew but also through the minds and experiences of the thousands of generations of mariners and shipwrights who preceded us. Their skill and their failures are embodied in the graceful lines of the hull and sails, as sleek and sensuous as the hips of a beautiful woman. Or as my friend Tom says, “Aargh! Me likes the turn o’ her bilge, matey!”

At daybreak I volunteered to con-

tinue at the helm while the skipper cooked breakfast: coffee, biscuits, and gravy. The simple meal was delicious. Shipmates now, we opened up a bit to each other and reviewed the night's events. My trick at the helm had been pretty uneventful, except that we had been pooped once during the night by a rogue wave.

A ton of water landed in the cockpit, almost knocking me down and pouring several hundred gallons through the open companionway hatch.

Catnap

The darned cat, of course, slept through it all. The electrics pumped out the yacht's bilges, but I had a little trouble locating the cockpit drains (they were under 2 feet of water) to make sure they were not plugged up with debris. My foulies were well buttoned up but were never designed for hands and knees in hip-deep water. It wasn't until after the water was cleared that I realized how dangerous that can be: the first wave stops you helplessly in the water, unable to maneuver; the boat gets hit full force by the next and capsizes her; the third sends her to the bottom.

Through the night, the wind had moderated somewhat (or maybe I had just gotten used to it). The seas, on the other hand, were now enormous. They came racing impatiently behind the



boat, foaming at their crests, scud and bubbles blowing down their forward faces and their trailing slopes. The color of the seas well offshore is totally indescribable, like dark blue ink poured into a glass of water, all offset by the blinding white of foam and spindrift and contrasted against a paler, but no less blue, sky. They would momentarily tower over us, but *Haiku* lifted her skirts and let them slide harmlessly beneath her rump so they could continue their breathless rush to the end of the world. The waves looked as high as a four-story building, although the radio assured us that they were but "19-foot seas." It is a discrepancy that has been documented before; the mariner should be forgiven for a bit of a stretch of the truth. It is as much an optical illusion as a sailor's exaggeration.

Later that morning we saw the only other vessel that shared that windswept ocean with us. A huge container ship crossed our bows about a mile ahead of us. I could see an officer on her bridge through binoculars, watching us

"The color of the seas well offshore is totally indescribable, like dark blue ink poured into a glass of water, all offset by the blinding white of foam and spindrift and contrasted against a paler, but no less blue, sky."

through his. We waved at each other, and I felt sorry for him. His ship was built to carry cargo, a blunt box with a flat bottom, riding broadside to the seas. With no top hamper to steady her, she rolled sickeningly in a beam sea.

Petered out

The gale blew all day but began to moderate by evening. As we expected, it had petered out to nothing by the time we rounded Pt. Conception and changed course to parallel the coast. We secured the jib and fired up the engine and traveled within sight of the coast toward our destination. As if on cue, Fang emerged from his hideout, went below, and lost himself in the clutter of the cabin. He had spent the whole gale on watch and now he was

ready for some serious sleep.

The day was cool and crisp and, as we threaded our way through the Channel Islands, we could easily imagine ourselves the only ship on a primeval ocean. The islands rose like monoliths from the sea, some

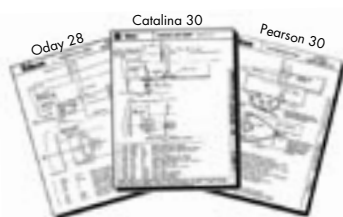
close enough aboard for us to see the colonies of sea lions littering the narrow and cramped beaches... at this distance, tiny maggots crowding the carcass of a dead whale, a monstrous dead whale of stone, the size of a mountain, floating in the deep blue vastness. Every fissure in the rock, highlighted by the long shadows of a setting sun, continued the cetacean illusion. The islands were wrinkled behemoths, without a particle of green fur, brown rocky skins like an elephant seal's. With nothing but the sea lion colonies to give them scale, it was even difficult to judge their distance and size.

I recalled the last time I had sailed this way, a few months earlier. Then it was night, and we had taken the channel side on the lee of the islands. It had been overcast and dark, the islands invisible but sensed from our knowledge of the area and the silent witness of the chart. The low cloud layer, by coincidence, was at the precise level of Anacapa Light, and the sweeping beam from the rotating beacon perfectly illuminated the exact bottom of the cloud layer. It was an unforgettable illusion, truly the Light at the End of the World, a godlike flash as the sword of light sliced over our heads again and again, precisely at the level of the fog bank.

Sleepless night

But there was no light from our present perspective, just an occasional aid to navigation blinking its coded message. For *Haiku's* crew, it would mean a sleepless night. We were approaching the crowded waters of southern California, with their heavy commercial and yachting traffic, and the threat of collision had to be dealt with by constant vigilance. Steve went below and used the radar, calling out ranges and bearings which I, with my dark-adapted night vision, could verify with binoculars. Navigating by GPS and radar, we approached our destination until daybreak when my shipmate finally begged me to carry on alone for a while so he could get a few hours of

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I was tired as well, a bit punchy from the night's sailing, although my work had been physical rather than mental, so the fatigue was not as severe. I knew that with sunrise I would get my second wind. Through the dim twilight we were well into the oil patch, threading our way through the pumping stations and offshore platforms. The ocean is foul here, not from the derricks and pipelines, but from petroleum bubbling up from the sea itself. The stench was everywhere, and I could see the droplets of petroleum floating past, some still racing up from some hidden fissure in the sea floor to break at the surface after countless millennia under the crust of the earth and the shroud of the sea.

Soon even this dead zone was behind us, and that sacred time came when, just before sunrise, there is plenty of light to see but no harsh glare to squint the eye. A trick of the atmosphere colored the scattered clouds a bright solar yellow, while between them was the dark violet of an early morning sky, a color once described to me as "Maxfield Parrish blue."

Unexpected combination

The combination of colors was unexpected; a salmon and indigo is what one usually expects from this time, but some trick of the light or some unexpected illusion of these two contrasting colors — violet and yellow

— came from the sky in alternating bands as the parallel stripes of cloud and sky provided the color backdrop. The surface of the sea, almost perfectly calm, also had its alternating pattern of crest and trough, tiny wavelets just a few inches high and a few feet apart. The pattern of the waves suddenly meshed with the striping in the sky and, for a few moments, the surface of the sea exploded into a geometrical spray of yellow/violet reflections that throbbed and propagated in a bizarre Op Art extravaganza. The effect was not at all natural in appearance. It appeared almost mechanical, computer generated, artificial. It only lasted a few seconds while the geometries of sky, sea, and boat motion briefly merged in perfect synergy.

Then it was over. The alignment shifted slightly, and the yellow/violet kaleidoscope collapsed back to undifferentiated chaos. The colors changed slightly to something more familiar in the gradually increasing illumination of the scene. It had my attention, and I shifted my head back and forth in a vain attempt to recapture that fleeting pattern of reflections. It was not there, but looking into the water itself, I could see something below the surface. A huge pod of Pacific dolphin was passing under *Haiku*, the nearest to the surface just a foot or so below. They are smaller than our Atlantic Coast porpoises, and more boldly marked, and there were thousands of them. In a moment they were gone. 



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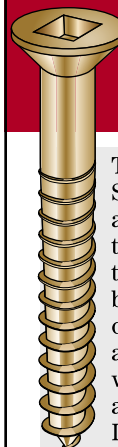


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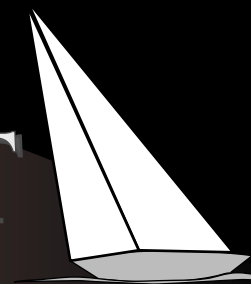
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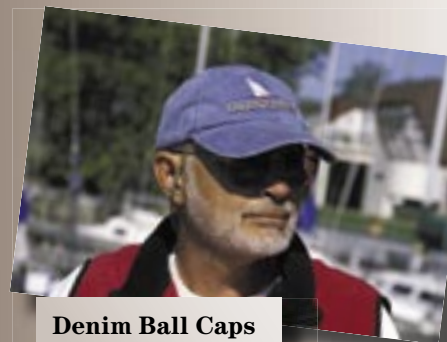


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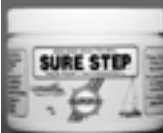
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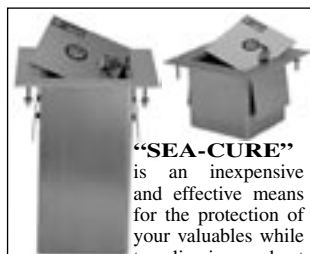
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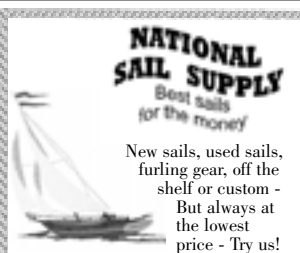
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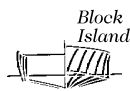
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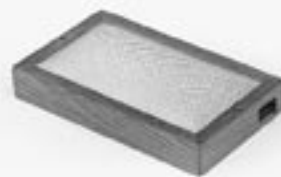
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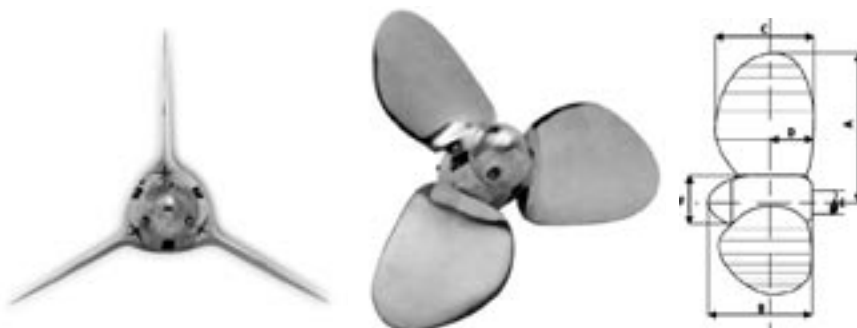
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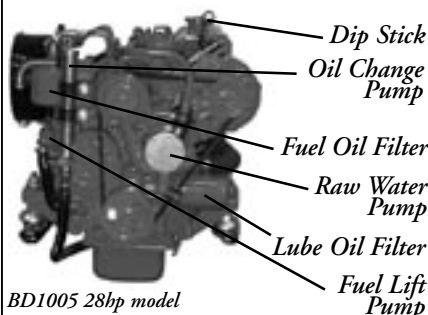
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*Making the dream come true,
Continued from Page 24*

and pristine. No nicks in the gelcoat. No grubby spots or tears on the cushions. A brand-new engine with a warranty. Gloriously white sails. A new mast and rigging. Wow! It's convenient and tempting to buy various factory options for special equipment, but the costs are high because you pay the full ticket for the item and its custom installation. The blandishments of the dealer may be hard to withstand. Also, some of the goodies (suede fabric for cushions, a two-color deck, a larger engine) may be of doubtful value. In any case, together with taxes, preparation, commissioning, and delivery, the tab can easily climb another 20 percent. With storm sails, a spinnaker, a dinghy, mast steps, extra anchors and warps, and an anchor windlass, a new, high-line 35-foot production yacht can easily cost \$237,500 or more.

The gloomy reality is that if you get tangled up with installment payments and finance charges, you may never get away. This means that from a dollar-and-cents point of view, buying a used yacht may allow you to go sailing years earlier.


Summarized prices

To summarize my investigation of yacht prices in the 35-foot range, the figures look like this:

1. An ex-racing boat from 1998 (5 years old) will cost \$99,000. A 1985 (19-year-old) model will cost \$55,000. She will sail particularly well and have many sails but may not be entirely suitable because she is set up for a large crew. Her interior will be rudimentary. If you add joiner-work and cruising equipment (water tanks, anchors, chain, extra sails, etc.) you will increase her displacement and degrade her performance.

Vessels of her type tend to lose value faster because of obsolescence. Her price may be open to negotiation. Offer half and see what happens.

2. An ex-charter yacht 5 to 6 years old will cost \$65,000, perhaps less depending on her condition. Typically she will need \$13,500 worth of equipment renewal, painting, and sails. Charter yachts tend to be of average quality. If you're after a deluxe yacht (Alden or Cherubini), you'll have to look in the used market.
3. A used cruising boat 5 to 6 years old will cost from \$99,000 to \$185,000, depending on the original price. A 1985 yacht will cost about \$59,000. I estimate repairs, equipment, and sails will be \$16,500, which will bring the total to \$75,500. A Hinckley, Creaklock, or Tartan is more expensive than a Catalina, Beneteau, or Jeanneau, mainly because of more deluxe equipment and better finishing details. Are the more costly boats safer? Do they sail better? Not necessarily. Remember, most of the designs are roughly similar. You will probably be replacing the sails, so they become a standard item. Many of the masts and rigging come from the same sources.

Try to satisfy yourself that the hull, deck, rig, rudder, and steering are well built and have worked for others. You don't need such things as television viewing centers, complex electrical systems, satellite radios, watermakers, fancy metalwork, turbocharged engines, exterior varnished trim, and so on aboard a small cruising sailboat. I've found that my life is simpler, more satisfying, and easier without these things. 

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Cushion keepers


Here's how to keep those cockpit cushions in place

by Bob Steadman

THE BOAT HEELS OVER, AND THE COCKPIT CUSHIONS END UP IN the foot well. You might even be sitting on one when it slides off the seat. I have seen snaps used to hold cushions in place, but snaps are not very effective. The male part of the snap is on the cockpit seat, and it gets stepped on and eventually fails. The female part, located in the cushion, does a poor job of spreading the load and will either tear the fabric or cause the cushion itself to deform. Sunlight breaks Velcro down rapidly, so it isn't satisfactory either. What to do?

Recently we made some cockpit cushions and came up with a solution. Sailrite sells a vinyl male extrusion by the foot called Awning Rope (part #1371). If you aren't handy with a sewing machine, have your local canvas shop install this extrusion on the outboard edges of your cushions. Sailrite also sells a female extrusion for mounting to the back of the cockpit seats. Its called Heavy Duty Awning Track (part #100380).

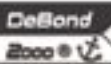
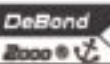
Cockpits and cushions vary in configuration, of course. We made two cushions for each side and left a space between the female extrusions to slide the cushions into place.

Now the cushions stay firmly in place and hinge up to allow access to under-seat lockers. 

Snaps get flattened ... Velcro fails ... How then do you keep a seat cushion on a cockpit bench when the boat heels? Bob Steadman says you do it with awning or boltrope track, of course!



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Boltropes and tracks

The best way to join fabric to hard surfaces

by Don Launer




THERE OCCASIONALLY COMES THE TIME WHEN YOU NEED TO fasten fabric to wood, fiberglass, or some other hard object. Sometimes eyes and rope ties do the job, and sometimes stainless-steel snaps work. But there is another, in many cases superior, method: the “boltrope and track” (sometimes called the “awning rope and track”). This system works well under conditions of wind and spray, such as when Sunbrella sides are attached to a hard-top dodger.

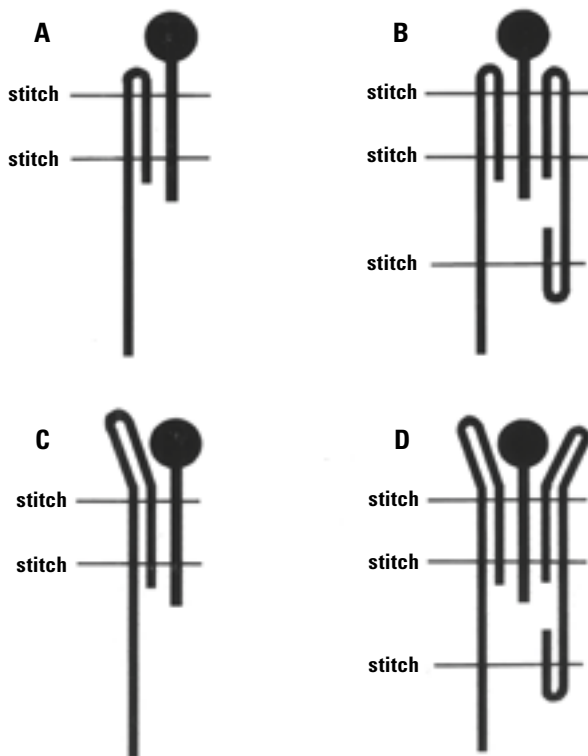
A preformed boltrope with a handy sewing tab is sewn to the edge of the fabric. This can then be fed into a boltrope track fastened to the wood or fiberglass.

The boltrope with the sewing tab is made of Dacron or vinyl. Dacron rope, which is more expensive, has a diameter of $\frac{7}{32}$ -inch and slides easily into the track. It is ideally used in situations where the attachment and detachment needs to be made quickly and easily. Vinyl boltrope pro-

vides a tighter and more waterproof fit, but since it is just slightly larger ($\frac{1}{4}$ -inch), it is more difficult to slide in place, especially if there are bends in the track. It cannot be used at all when the bends are less than a 10-inch radius. It is best suited to semi-permanent installations where the track is relatively straight.

The tracks into which the boltropes slide come in either extruded PVC or aluminum. PVC Flex-a-Rail is handy when the track needs to have bends in it. For really tight bends, Flex-a-Rail can be softened with steam from a teapot. It is fastened in place with flathead or machine screws that go through holes drilled in the center of the track. These tracks come in 45-inch lengths and are available in white, black, or cream.

A heavy-duty PVC track is also available. It has a flange for panhead screws or bolts and, although much stronger, can follow gentle bends only. It comes in white in 48-inch lengths. Anodized aluminum tracks are also available and come in 48-inch lengths. These tracks are even stronger, but can only be bent over a very large radius. This track has a mounting flange that will take panhead screws or bolts. It is best suited for heavy-duty applications with relatively straight paths. 



Two types of boltropes and tracks, above. The vinyl or Dacron boltrope can be stitched to the edge of the fabric, as in A and B, at left. A fabric flap, as in C and D, at left, can also be used. This hides the boltrope and track and increases spray-resistance, as well as making an aesthetically more pleasing finish.

Resources

Tracks, boltropes, screws, and other sewing supplies (Sailrite calls these products Awning Rope and Tracks):

Sailrite Enterprises Inc.

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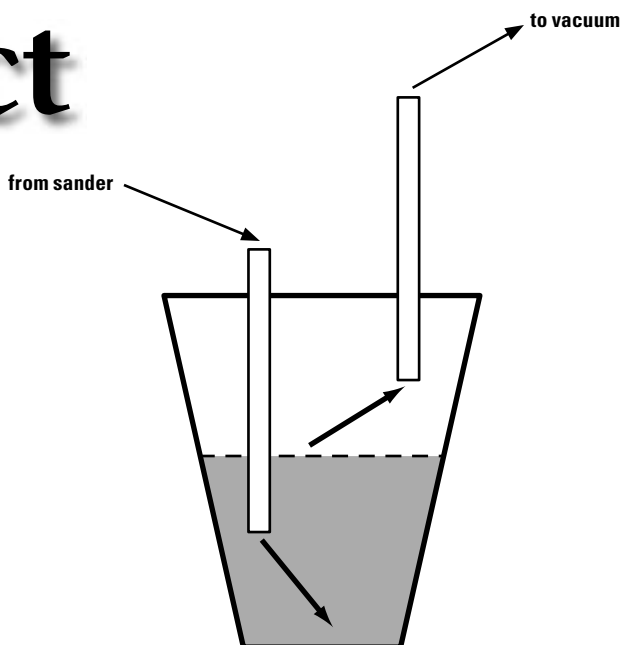
Use this low-tech water trap for sanding dust

by Alfred Poor

I HAVE A RANDOM-ORBITAL SANDER FOR WHICH I HAVE AN AFFECTION that borders on the unseemly. Hook it up to a shop vacuum cleaner, and I no longer look like an extra from the shooting of *Lawrence of Arabia* when I finish a sanding session on our boat.


However, I can still hear the shrieks of dying shop vacuums as their bearings bite the dust. The problem is that the vacuums do a great job on relatively coarse stuff like sawdust, but the fine particles of paint or epoxy — especially when you sand with finer grits — pass right through the filters and wind up in the motor, greatly increasing its noise output and reducing its sucking power.

Then I observed a device used by contractors who were doing some Sheetrock work on our house. They had a



little water trap between their sander and vacuum, and it trapped all the spackling dust.

I devised my own super-sized version of the device using a 5-gallon plastic bucket with lid from my local discount building supply and a few pieces from recently-deceased shop vacuums. I drilled two holes in the lid and inserted rigid sections of vacuum pipe. I pushed one in so that it reached within a few inches of the bottom. I left the other so that it only descended a few inches from the lid. I then attached a flexible hose from the sander to the “deep” pipe and another hose from the “high” pipe to the vacuum. Then I filled the bucket halfway with water, snapped on the lid, and went to work.

The shop vacuum pulls air from above the water in the bucket. The loss of this air pulls air from the sander's hose in through the low pipe where the air bubbles through the water and proceeds on its way to the vacuum. As it passes through the water, however, most of the dust gets trapped. At the end of the day, you can dump out the water and paint dust and take home a vacuum that has survived to run another day. 

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A proper winter cover

Careful fall layup gives you a head start in spring

by Gregg Nestor

OCTOBER ON THE NORTH COAST (GREAT LAKES) OR, FOR THAT matter, anywhere north of the 38th parallel, means taking the boat out of the water and preparing it for “cold storage.” Over the years, I’ve determined that a significant portion of the pleasure that I experience when my boat is released from its winter cocoon in the spring is directly proportionate to how well I’ve prepared it in the fall. In addition to the washing, waxing, lubricating, repairing, inspecting, and removing, the one aspect of winter storage that affords the greatest impact is the boat’s winter cover.

As the owner of a 22-foot trailersailer, I have a distinct advantage over owners of much larger and less trailerable craft in that I can easily transport my boat home. There I can perform the required fall ablutions, benefiting from the convenience of my workshop’s tools and supplies. Once the fall decommissioning is complete, it’s time to cover the boat for its long winter’s rest. It is at this phase in the winterizing process that boats of all sizes can benefit from a proper winter cover, regardless of whether they’re on a cradle at the marina or parked in the driveway.

First, I unstep the mast and support it horizontally at three locations on the boat. The bow pulpit serves as the forward support. Amidships, the mid-portion of the spar rests on a wooden cradle that is mounted over the tabernacle. This avoids any “swayback” or bending of the mast. At the stern, the top of the mast rests on a mast crutch that is pinned to the boat’s gudgeons. In this fashion, the mast serves as the backbone support for the winter cover. Since it’s almost 27 feet in length, the mast overhangs the bow and stern and allows for excess tarp at both ends. This ensures complete coverage of the entire boat.

I also remove the stanchions and lifelines. Stanchions are potential “tarp tearers” and, if allowed to remain, must be heavily padded. Once they’re gone, into each vacant stanchion base I insert one end of a ¾-inch PVC water pipe. The pipe is then bent over the mast, where it is supported, and the other end is inserted into the opposite side’s empty stanchion base. The finished product resembles the hoops of a covered wagon.

Foam padding

To maintain this rounded and smooth form on which the tarp will rest, I pad all potential sharp spots with closed-cell foam. This includes the tangs, cleats, steaming light, and other mast fittings, as well as any protruding fixtures on the boat itself. I purchased the foam at an Army/Navy store, in the form of a surplus 2-foot by 7-foot sleeping pad. The pieces that I need are cut to size and held in place with duct tape. No tape touches any part of the boat or the mast. I use the same PVC water pipe and closed-cell foam pieces year



With the PVC pipes spanning the boat’s beam from stanchion base to opposite stanchion base, the effect resembles the hoops of a covered wagon and provides the skeletal frame for the tarp covering.



To maintain a rounded and smooth frame on which the tarp will rest, all potential sharp spots are covered with closed-cell foam padding.

after year. Only the duct tape is replaced.

The winter cover is draped over the entire boat, with the bulk of the tarp’s excess drawn to the stern. Starting under the bow of the boat and working my way to the stern, I weave a line back and forth through the tarp’s grommets, much like one would do with shoes and shoelaces. The bow end of the tarp is closed with a combination of lacing the grommets together and using spring hand clamps. The



Starting under the bow of the boat and working toward the stern, a line is woven back and forth through the tarp's grommets, securing the tarp to the boat.


excess tarp at the stern is rolled together and held in place with a series of spring hand clamps. Should I need to go aboard during the winter months, removing a few clamps is a lot easier than trying to untie line with cold fingers.


For the cover, I chose a 24-foot by 30-foot reinforced poly tarp that is silver on one side and black on the other. With the silver side facing outward, greater reflectivity and



The tarp has been sized not only to cover the boat from stem to stern, but also from waterline to waterline, leaving only last season's bottom paint exposed to the elements.

UV resistance is achieved, while underneath the environment is cool and airy. Also, the tarp is sized to not only cover the boat from stem to stern, but also from waterline to waterline, leaving only last season's bottom paint exposed to the elements. The tarp is on its sixth season and is holding up very well.

I found that a careful fall layup, with emphasis on a proper winter cover, is like getting a head start on next year's spring commissioning. 



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Concordia seatbacks

Comfort and grace from folding cockpit seats

by George Colligan

AMONG THE LOVELIEST BOATS AROUND ARE CONCORDIA YAWLS. They were designed by C. Raymond Hunt and, mostly, exquisitely built by Abeking & Rasmussen in Germany. They have lots of delightful features, especially the folding berths known appropriately enough as Concordia berths. When I was looking around for something to use as a backrest in the cockpit of *Temujin*, my Tartan 34C, I came across hinged cockpit seatbacks in my friend's beautiful Concordia 41, *Yankee*. When not in use, they fold down. They are usually made of locust and nicely varnished.


For the Tartan 34C, as well as for a lot of other boats, the specific Concordia arrangement won't work. But the principle of a hinged and removable seatback still applies, albeit with some modification. And the style of the backrest is very pretty. The seatback will fit any boat with a fairly long cockpit bench and a relatively straight (90-degree) coaming. Virtually any boat with a teak coaming is a candidate, though a molded fiberglass coaming can also work. The main concern is where the seatback falls in proximity to the wheel or tiller so that the extension of your "helming" arm is comfortable. The key word is "ergonomics."

Mine is made of teak with white cedar bungs for decoration. The back support is held in place with stainless-steel hinges and angled for comfort. The seatback assembly is held to the cockpit coaming with gudgeon and pintle fittings.



Anchored inboard

Once the assembly is fitted to the coaming, it must be anchored at the inboard base, and the folding brace must be attached to something. I used the traveler bridge. If you don't have a traveler bridge, you might use a brass tube and a fast pin. The inboard leg must be anchored with a fitting, like a table bracket fitting, so it can be easily removed.

We have sailed all summer with both seatbacks in place and don't know what we did without them. 

One of the great pleasures of owning a boat is looking at the beautiful things craftsmen have fashioned for sailing yachts over the years and incorporating some of them for use on your own boat. George Colligan has incorporated the beautiful and comfortable Concordia seatbacks for use on his Tartan 34 Classic.

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Plastic navigation

Gadgets you can make and use to back up your GPS

by Jack Dillon

HERE ARE THREE NAVIGATION AIDS YOU CAN USE when your GPS isn't working or to reinforce old time-tested methods of navigating.

The STD stick

Make a logarithmic speed scale stick. Rarely mentioned in any books on navigation, this little device is for figuring speed-time-distance problems. (*We have reproduced the scale at 100 percent on facing page –Ed.*) Here's how to proceed:

To find speed, place one point of dividers on elapsed time (in minutes) and second point on distance in miles. Without changing spread of dividers or right-left relationship of points, place first point on 60. Second point will indicate speed in knots.

To find distance or time, place one point of dividers on 60 and second point on speed in knots. Without changing spread of dividers or right-left relationship of points, place first point on time (in minutes), second point will indicate distance in miles. Or place second point on distance in miles, first point will indicate time (in minutes).

Course protractors

There must be dozens of course protractors on the market today. Everybody has a favorite. Mine has the advantage of a moveable compass rose. Setting this rose to the known variation taken from the chart allows compass courses to be labeled directly, with no need to calculate plus or mi-



Although the logarithmic speed scale stick, above, is rarely mentioned these days, it continues to be an invaluable tool for figuring time, speed, and distance.

nus, east or west. This comes in handy for laptop navigators, as bearings and courses can be plotted directly on the chart using any latitude or longitude grid. Notice that the grid alignment line on mine is set to 14 degrees westerly variation and the course line is 58 degrees.

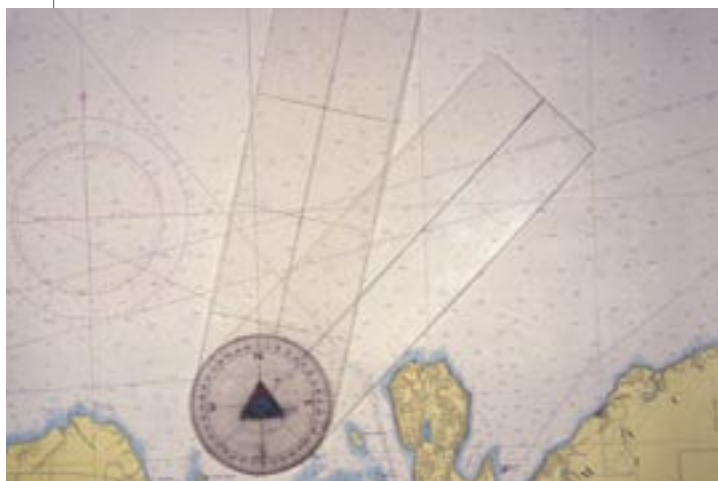
To use this course protractor, you dial in the local variation as shown in the illustration below (in this example 14 degrees west). If variation in your cruising area is reasonably the same (a constant amount of variation), a small pin can be inserted as shown. This assures that the rose won't move. If your boat is free from deviation errors, the desired course can be read directly from the plotters in the usual way.

When taking bearings for position fixing, the bearing can be directly plotted on the chart with your altered plotter as the variation is already fixed in.

The first thing you need to make your own course plotter is a compass rose, available from any good art- or office-supply store. For the clear plastic needed for the arms, consult your Yellow Pages. Inquire which retailers stock clear acrylic plastic in various sizes and thicknesses. Determine the size you want.

The length of the arms can vary, but the width is determined by the size of the compass rose you obtain. I kept mine small for laptop convenience. There are special tools for cutting acrylic, but in a pinch you can score the plastic several times on both sides and break it off. Smooth the edges with 220-grit sandpaper, being careful not to scratch the face. Place the rose against the end of one arm, trace its outline, and cut. A saber saw fine-toothed blade will work, but scoring it first will help prevent breakage.

Round off and sand the other arm smooth in the same manner. Next, scratch marks down the middle of both arms and make lines across only on one arm, as shown



A course protractor with a moveable compass rose is another handy tool. If you cruise in one area using a relatively constant variation, you can dial in the local variation, in this case 14 degrees west.

in the illustration above. These are to align with latitude or longitude lines on the chart. The other arm has only one line down the center. This and its two edges are for the course line.

Drill the center hole considering the size rivet you intend to use. The fit should be snug. Assemble and peen the rivet just enough to prevent it from coming out. If your principal cruising area has the same variation, you might consider locking in the variation by a small pin, as shown in the illustration. Or make two plotters, one fixed and the other moveable.

STD stick with mileage scales

For sailors and most powered craft, speed is not constant, which makes precise figuring a classroom exercise. Thus although your logarithmic speed scale will not be as accurate as standard math formulas, it is accurate enough and certainly more handy. When doing chartwork, you already have your dividers in your hand when you're checking courses, distances, and so on. Now, any speed-time-distance solution can be picked off using your homemade scale.

A chief advantage for me is that it requires the use of only one hand, since the other one is on the tiller or wheel. Most circular calculators for solving speed-time-distance problems require two-handed operation. I keep my scale pasted directly on the chart I'm using but have another "stick" scale handy.

I also made an addition to the scale with decimal points to the left of the number 1. This enables me to figure times, speeds, and distances of less than one nautical mile. This comes in handy when running by harbor buoys in a deep fog, as the distances between these are often less than one mile. Using your logarithmic scale, you can predict when the next buoy will appear as well as any other component of the speed-time-distance problem.

In constructing my homemade scale I used white Formica, but any white plastic laminate will do. I marked the scale and numbers with a pencil, checked them, and cut the piece to size. I etched in the scale and numbers using a vibrating etching tool available at hardware stores, but a hobby knife or sharp scribe would work too. The point is to scratch the plastic laminate so that it will accept ink. I cleaned off the surface and inked the etched-in lines with waterproof ink, wiping off the excess with



Using the same plastic laminate, Jack also made himself a clever deck log. He incorporated the STD scale and other useful navigation information and roughed the surface up with 600-grit wet/dry sandpaper so it can accept pencil notations.

a cloth. If your shop is so equipped, it might be nice to make one out of brass and stamp in the graduations and numbers.


I also drilled small holes at each number using a pin drill. This simplifies

holding one point of the divider in place. I also etched, in the top and bottom edges, the mileage scale of frequently used charts.

Deck log

In addition to the three gadgets mentioned above, plastic laminate used for the speed scale can also be made into a deck log. Use any configuration to suit your particular needs. I have my speed scale on the bottom. This allows me to make calculations at the same time as other log entries. Before making your deck log, work out all the details on a piece of paper to the exact full scale. When you're satisfied that all is OK, cut the size needed from the plastic laminate and lay it out on the surface in pencil. Then etch out the lines, letters, numbers, and so on. Ink them in and wipe it clean.

Now, using 600-grit wet/dry sandpaper, rough up the open spaces. These surfaces will permit you to make pencil entries that can be erased when obsolete. After a few uses, the surface will need to be cleaned thoroughly with soap and water.

Cut another piece of laminate the exact size as the first. You can leave this one blank or make another log useful for your style of navigating. If you chose to leave it blank, rough up the surface with sandpaper to make it possible to make pencil notes or calculations on it. A hole in one corner will accept a lanyard for hanging in your nav station. 

Don't want to make your own?

If you don't want to make your own navigation instruments, several manufacturers produce similar tools. Weems & Plath offers a circular nautical slide rule for time-speed-distance calculations

(Model No. 105) and a new product, (Model No. 255) shown at left, which is similar to Jack's course protractor.





Lyle Hess catboat

I promised to send some photos of my Lyle Hess catboat taken when I first launched *Doodle*. As you can see, Lyle [Hess] looks proud [shown above sitting in the cockpit]. Thanks for helping to keep Lyle's name and creations alive (Lyle Hess profile, May 2004).

Stephen's catboat is a 16-footer, designed in 1987 and built by her original owners, Thelma and Phil LaFlamme. Doodle was Lyle's nickname for his wife, Jean.

**Stephen Small
Tujunga, Calif.**

I decline

I have just finished reading the article about Bill Lee in the July 2004 issue and must decline Bob Perry's invitation to "revere" Bill Lee. The author quotes an anecdote told by Bob

Perry that on viewing a Pacific Seacraft 40 sailing by in San Francisco, Bill commented, "All I see is a boat with no waterline length." While a testament to the myopia that enabled Bill to produce some successful racing sleds that were intended by his own statement to skirt the edge of safety, it falls far short of the vision expressed by Bill Crealock in what became the

Pacific Seacraft line of fast, seaworthy cruising sailboats. In my view, Bill Crealock's work embodies high aesthetic principles as well as functionality, and I'll save my reverence for artists like him!

**Timothy Bates
Wolfsboro, NH**

Fuel tank source

Is there a chance we could find out by whom Gerry McGowan had his new fuel tank, mentioned in the May 2004 issue, made? Was it to USCG specs? I have a Kenner Privateer that has the tank out for replacement. They're difficult to find.

**Dave Cannell
Manchester, Conn.**

Gerry McGowan replies

The fuel tank was supplied by: Skallerud Marine, 2730 Washington St., Port Townsend, WA 98368; 360-385-9521. I assume that it is built to Coast Guard requirements; the only requirement that I'm aware of for tanks this size is pressure testing, which owner Doug Skallerud did. He found a small leak and welded it closed. He makes many tanks for boats here and has a good reputation. His entire business is marine fabrication in aluminum and stainless steel, supplying a lot of the equipment for both commercial (fishing mostly) and pleasure boats in Port Townsend. This is a big boat rebuilding area; many of the fishing boats from Alaska come here for winter refitting.

**Gerry McGowan
Port Ludlow, Wash.**

Another source for tanks

In the meantime Dave had found another source for tanks. He tells us:

I'm quite happy with the tank; workmanship is really nice, delivery much quicker than I had expected. Only issue was with me not thinking far enough in advance. Owner Brian Cavaday is sending me the parts I need for the cost of postage. KSH Marine, 1675 #103 Kiowa Ave., Lake Havasu City, AZ 86404; <<http://www.kshmarine.com>>; 928-680-6610.

Editors

A dab will do

I always jump right to the how-to articles in *Good Old Boat* to see what nifty techniques and tricks I can steal from these most informative of articles. I hate to be a bung snob, but after having chiseled, dug, drilled, and cursed out more than a few of these in my day, I shudder when well-intentioned boat remodelers use the latest in space-age adhesives to seat the

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little guys. Sure, they may be there for the next 30 years, but it's logical to assume that someone will eventually need to get those out to refinish your handiwork or, heaven forbid, replace it.

Be kind to your sailing brethren and refitting progeny. Glue bungs in the way that old salts and shipwrights have done for years: use a dab of varnish.

Hal Newell
Excelsior, Minn.



local marine supply store may not be open. So this is worth knowing. If you need to wrestle a plumbing line into place in a hurry and there's no place like BoatU.S. or West Marine handy, your neighborhood pharmacy can help you get it on.

Robert Hlady
Marion, Mass.

Payment to the gods?

I wanted to thank you. I just renewed for two years. I re-

ceived my July 2004 copy and read the article about electrical gremlins in sailboats. It saved me lots of time, money, and brain damage. When I brought our good old Catalina 27 across Lake Michigan two weeks ago, I noticed that battery No. 1 was not working. Of course I assumed the worst: blown battery switch, destroyed diodes, etc. I surfed my favorite online chandlery, bought every possible part that could be needed, and headed out to the marina.

As a result of reading the article, I started simple first and immediately realized I hadn't hooked up the "big" positive cable on No. 1. So about \$50 of the \$74 I sent [to *Good Old Boat*] was payment to the good old boat god! It's always a bonus day when my copy comes to the house...

Judd Blunk
Batavia, Ill.

How-to articles are read

I'm sending some pictures (one is shown above) of my winter project: "A Classic (Leakproof) Hatch" from *Good Old Boat*, November 2001. I thought you and author Armand Stephens would appreciate knowing these articles really do get put to use.

David Satter
Branchville, NJ

Sailing in circles

American Westerly Owners Newsletter editor, Joe Douglas, dropped a line recently mentioning that he hit a rock and bent his rudder shaft such that the boat could only be steered to the left. He was able to drag a bucket out to one side and trim the sails in such a way that he was able to greatly increase the size of the circles. He tells us that in this way he was able to cover 8 miles — even through narrow canals — in order to bring his boat home to a hoist. Westerly readers or others interested in the details can contact Joe at jiver@naples.net.

Editors

For the unexpected resources file

I just spent half a day trying to replace the sanitary hose line between my holding tank pump and the overboard through-hull. Being "live," the inside of the new hose produced a lot of friction against the nylon nipple it was supposed to connect to. Not even my old standby, a slurry of Ivory soap and water, could get the hose more than halfway on. I gave up and drove home.

I was back at the boatyard an hour later after what my old psychology professor would have called "an Aha! experience," followed by a quick trip to the pharmacy. The hose went on as if by magic after I coated the inside with a heavy film of what the druggists call "personal lubricant," which you will find on the shelf next to the condoms.

These products are not petroleum-based, so they won't degrade rubber or plastic hoses, O-rings, washers, and so forth. They're water-soluble, so any excess simply washes away. One word of caution: as these products dry, they can leave behind a thin film of gummy residue, which might make the hose somewhat harder to remove later.

Marine supply houses market their own non-petrochemical hose lubricants which may be superior for all I know, but my guess is that most boatowners have to do their maintenance and repairs on holidays and weekends, when the

For the rest of us ... down under

Just a few lines to say what a great magazine *Good Old Boat* appears to be. I have only seen one copy (March 2004). This was left by an American cruising couple when they were in our marine equipment shop in Brisbane last week.

On the strength of one issue I have subscribed for a year. Finally I have found a magazine which, as you rightly state on the cover, is for the rest of us! I, like most of my fellow sailors, own a sub-30-foot yacht (Roberts 25, actually) that I maintain

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and repair where needed myself.

I had all but given up the search for a regular magazine that simply caters to us "average-income" family sailors ... with tips and knowledge from fellow sailors with similar vessels. And I can honestly say if a magazine as good as yours exists in Australia I haven't yet found it ... or for that matter anything even close.

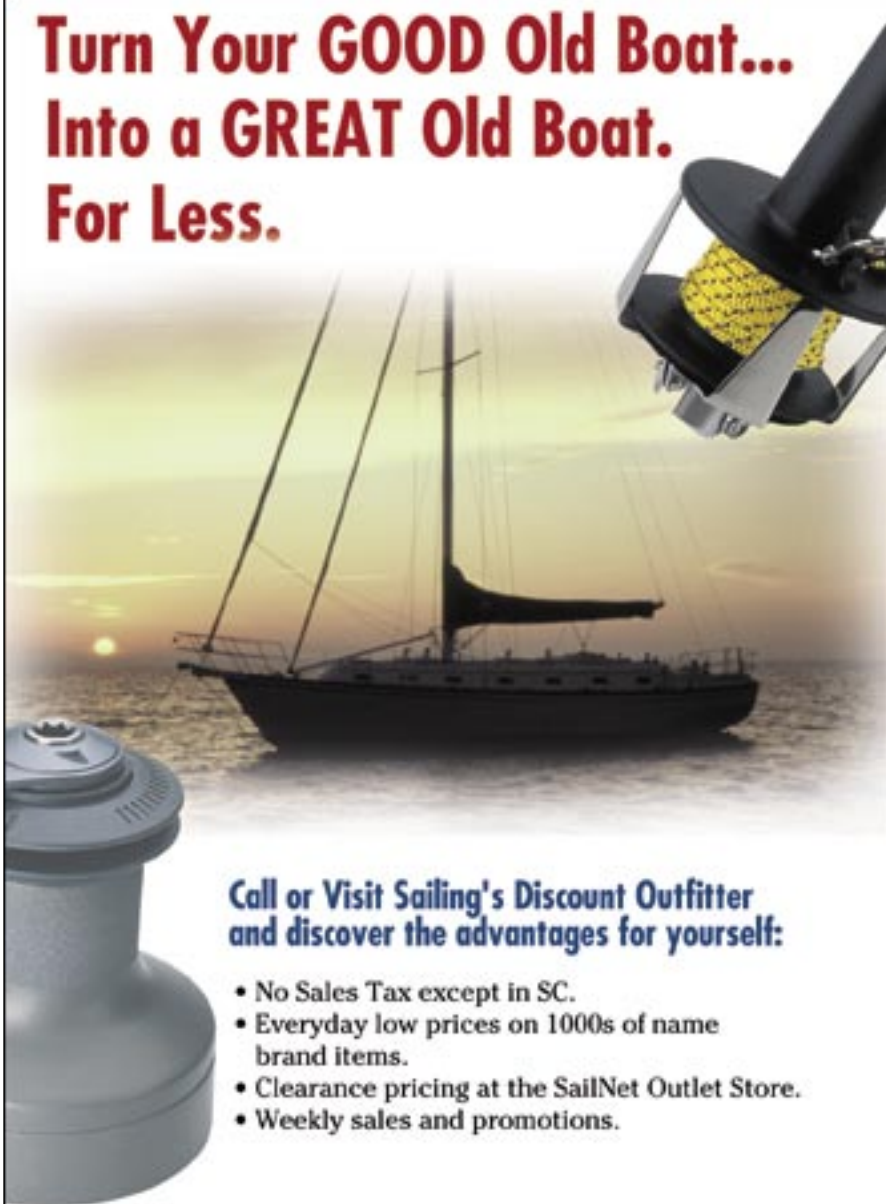
So keep up the good work, and I'll look forward to reading future editions. Don't be surprised if you start receiving more subscriptions, as quite a few people have already asked where I got your magazine.

Mark Love
Brisbane, Australia

Quibbles and bits

A few minor quibbles with the July 2004 issue. Ted Brewer's article on repowering, "How Much Power?" perpetuates a number of obsolete ideas about motor design, specifically that old heavy engine power is somehow different and better than new lightweight engine power. A horsepower is a horsepower whether produced by Shetland ponies, percherons, or hamsters running in a cage. Older engines used ponderous pistons and massive castings and delivered maximum output at slow shaft speeds. Modern engines use lightweight, thin-wall castings and deliver their output at much higher rotational speeds. But judicious selection of reduction gears can reduce the prop shaft RPM to any speed desired. The newer engines are smaller, lighter, less costly, more fuel efficient, and emit fewer noxious exhaust gases. And given advances in design and metallurgy, last as long as the older behemoths. One of my friends is a charter boat operator in the BVI with several hundred boats under his supervision. He gets between 5,000 to 7,000 hours heavy use out of the 3- and 4-cylinder 30- to 50-hp Yanmar engines before overhaul. Given that the average recreational sailor rarely uses an engine for more than 100 hours a season,

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the engines will probably outlast the boat and maybe the boater. In any event the engine will probably die of owner neglect long before it wears out. I have great respect for Ted Brewer and for Douglass Phillips-Birt, whose book is referred to in the article, but I would rather have them design my boat's hull rather than its power plant.

Incidentally, the "very tricky question" of gear ratio and propeller specification that Ted takes a bye on is nicely handled by the short Basic computer program I developed. It really works. Contact me (LRZeitlin@aol.com) for a copy.

Quibble 2: the article on LEDs was interesting but hardly cost-effective for cheapies such as myself. Most large auto parts dealers will be happy to sell you waterproof red or yellow LED truck clearance and cab lights containing 8 to 16 LEDs for about \$10 to \$15 each. These are in attractive cases which mount to any surface and have internal resistors calculated for 14.4 volts in 12-volt systems. Sixteen yellow LEDs provide enough light to read by but draw so little current that they can be wired in parallel with an individually switched incandescent light. They would be on any time the main cabin light switch is activated. I've equipped my boat with several of these units: yellow in the main cabin as night lights and red in the pilothouse and upper steering station.

Larry Zeitlin
Cortlandt Manor, N.Y.

Another opinion

Few modern sailboat auxiliary engines are specially designed for boats. They're nearly all tractor engines or light industrial engines with bolted-on seawater cooling systems. I have sailed with old-fashioned engines specially designed for boats, and they had several advantages over modern engines. They had heavy flywheels for a start, which means you could start them by hand very easily. That's a large safety factor missing in modern lightweight engines. The inertia in those same flywheels smoothed out vibration, too, so you had a quieter, more comfortable ride than the buzzy, shaky little engines give you these days.

It is true, of course, that power is power, but when we're talking about quality of power, things can be very different, and that's what Ted Brewer was talking about in the July 2004 is-

sue. You could power a Cadillac with a two-stroke single-cylinder engine and get the same power but at great cost of noise and comfort. The quality of power just wouldn't have the smoothness and quietness we expect in a Caddy.

Modern engines have many advantages, as Larry Zeitlin says — and I have no quibble with that — but the older, heavier engines had many qualities that were better suited to heavy-displacement cruising sailboats.

So it's not obsolete or unreasonable to say the older engines were somehow different and better than modern engines. It's simply a matter of compromise. If you make engines lighter, fast-revving, and more fuel-efficient, they also become noisier. They shake more, you can't start them by hand, and they're less compatible with the quiet, leisurely ambiance of a sailboat.

John Vigor
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Seafarer Kestrel 23s

I am attempting to compile a roster of owners for the Seafarer Kestrel 23 models. This model was made at the Huntington, Long Island, plant from about 1965 through 1973. It has a displacement of 3,700 pounds. Since I know of hull #238, at least that many were made.

The motive for the roster is to locate boats and encourage interaction between owners for the preservation, maintenance, and sailing enjoyment of these wonderful little boats. It would be fun to organize rendezvous/regattas for these boats. The Good Old Boat Regatta hosted by the Shearwater Sailing Club < <http://www.goodoldboat.com/regatta.html> > during the dates of the Annapolis Boat Show in October (Oct. 2 and 9 in 2004) would be a natural venue for these boats to congregate and join in some sailing fun.

Please contact: Michael Connolly, 706 East 81st St., Indianapolis, IN 46240-2642; 317-253-7351; curfone@sbcglobal.net.

I'm attaching a photo of my 1966 Kestrel, *Nantucket*, hull #154.

Michael Connolly
Indianapolis, Ind.

In Willi's wake

I was so encouraged after reading McCabe Coolidge's article about teaching Willi (May 2004). After many years of widowhood, I met a wonderful man who loves to sail. I am anx-



Nantucket, Michael Connolly's Seafarer Kestrel 23.

ious to learn and experience it all. After reading McCabe's accounts with Willi, I am more determined than ever to give it a try.

We live in Cory, North Carolina, and will be sailing along the coast of North Carolina. Wish me luck! Who knows? We may see McCabe and Willi one day.

Helen Greenwood
Cory, N.C.

Helen, with your attitude, it's already a sure thing that you'll be a sailor. Say hello to McCabe for us when you see him.

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Thinking outside the box

A tale of human fallibility and 500-hour alternator brackets

by Jerry Powlas

THE BRACKETS CONNECTING THE BOTTOM OF THE ALTERNATOR to our engine failed in benign conditions miles from the nearest land. Not quite a crisis but a problem. We had started the engine because the wind was too light to make much progress under sail. Like most freshwater-cooled engines, when you lose the alternator mounts or bearings, you lose belt tension and the ability to drive the water pump, so we could not charge, and we could not motor. A search for raw materials for a jury rig did not yield much. Finally, I bent up some 1/8-inch aluminum wire I figured would last a couple of minutes at most; just enough to make the last few moves in a marina at idle.

We were in the wilderness of Lake Superior a few miles north of Isle Royale's Passage Island. I had made the brackets myself when I installed the engine five years ago. Nothing on a shelf anywhere would solve the problem. Now we needed another set of custom-made brackets. Isle Royale's Mott Island was maybe 10 miles away and had repair facilities for National Park Service boats, but I was not sure what kind of help they would be inclined to give. The NPS has never demonstrated any real understanding of boaters or their problems even though they use boats to manage Isle Royale National Park. Thunder Bay, in Canada, was 30 miles away as the crow flies ... farther away but with more options.

A merciful light breeze returned dead down the rhumb line from Thunder Bay. Crows don't have to tack. While there was daylight and open water, we shut down all electrical systems. The late afternoon was followed by a long night; dark as the inside of a boot. We ran the running lights, GPS, chart plotter, and radar as we wove our way through the islands along the shore outside the entrance to the bay. At 0100 the wind died, and we ran two and a half miles to an anchorage on the jury-rigged brackets, with the alternator field current interrupted so there would be no charging load. The brackets were good for exactly that distance and nothing more.

On a lee shore

In the morning a brisk sea was rolling into the anchorage. We were close to the beach on a lee shore. We practice sailing off the anchor whenever we can. Still, the odds did not look good for that one. I started another scrounge for the raw materials

for a jury rig. The wire would not take the power I'd have to use to get off the shore. I considered a batten, a plastic sliding locker door ... and then I saw it. I had been looking at the old brackets as the "broken parts." They were extruded aluminum angles with 1-inch flanges. They had lasted, by rough calculation, about five years and maybe 500 hours of engine time. A bad design, they needed to be good for maybe 20,000 hours to outlive the engine and several failed alternators. The flanges that stiffened the parts also introduced a stress riser that caused the failure. But those flanges did not, themselves, fail; they were intact. Bingo. I drilled new holes in the remaining flanges, carved the holes larger with a jackknife, and installed "Design No. 3." They looked so good I told Karen they might actually allow us to charge. Still, we sailed from Ontario's Tee Harbor across Thunder Bay to the town of the same name, using the engine only to get us off the lee shore


and then again at the marina in Thunder Bay.

Canadian hospitality is amazing. We called Rod and Debbie Ellard, whom we'd met a few days before. Rod is a machinist. He made some 20,000-hour brackets for us, and he and

Debbie extended many other kindnesses during our stay. Nice place, Thunder Bay. Good people.

Lessons learned:

- Alternator brackets are very critical parts; carry spares. You can't predict what you will need to jury rig; carry a good collection of materials and the tools to work them.
- When it is crunch time try to think outside of the box.
- All humans are fallible; they may design things that break.
- Some humans are very kind.

Thanks, Rod and Debbie. 

"...when you lose the alternator mounts or bearings, you lose belt tension and the ability to drive the water pump, so we could not charge and we could not motor."



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A tinge of fear heightens autumn's
sensations of delight

MARJORIE AND I ROWED OUT TO THE BOAT AROUND NOON, just the two of us and the dog. The last day of September was magnificent — bright warm sunlight, a cloudless sky, only the gentlest of winds. We raised the mainsail and the boomed forestaysail, known to the old schoormen as the jumbo. I dropped the heavy mooring line overboard, leaving our scarlet rowboat behind. My pulse quickened, as it always does when the boat lets go its tether to the land.

Marjorie steered for the harbor mouth. *Silversark* slipped between the red and green buoys, the water chuckling at her forefoot. We had no destination, no purpose, no objective. My only agenda was to see how my improvements to the jumbo rigging would work and to try out a temporary windvane. *Silversark* was built for one, but I've never managed to get it working.

We reached out into Lennox Passage and began tacking up into the westerly wind — across to the green bulge of Ouetique Island, back to Bernard Island. There is a unique, saturated depth to the colors in the fall — not just the flaming leaves, but also the gun-barrel blue of the water, the dusky green of the spruce trees, the vivid strength of the blue sky overhead. The density of the air makes the autumn atmosphere poignant: the last warmth of summer, the sharp edge of the winter to come.

I found myself thinking about Joshua Slocum and about fear. I never leave the mooring without at least a twinge of apprehension, but Slocum seems almost fearless, and the ocean he describes is a friendly and welcoming place. Certainly he was an infinitely greater seaman than I could ever be. Yet he admits in his letters that he experienced a good deal more fear than he describes in *Sailing Alone Around the World*.

Was Slocum a liar? Maybe not. In *An Intimate History of Humanity*, Theodore Zeldin maintains that fearfulness is the normal human situation. Most of us fear many things — disease, rejection, bankruptcy, human violence, accident, and much else. And we love fear. As Zeldin notes, “when religion stopped frightening people, they invented new fears to frighten themselves, as though they valued fear as a necessary part of the sensation of being alive.”

Greatest enemy

In its milder forms, fear may be useful, intensifying experience and making one feel alive — but fear is also the greatest enemy of freedom, and if we did not conquer it we would be utterly immobilized. Moreover, most of our fears are pointless. Most of the things we fear will never happen. And if they did, we would survive them.

The most powerful antidote to fear, says Zeldin, is curiosity, our ability to become so absorbed in what we are experiencing that we forget to be afraid. Marco Polo, for instance, “has such curiosity that he forgets fear. The diversity of human beings amuses rather than terrifies him, even though he does not get rid of all the darkness — no one ever has — there


is always the puzzle that cannot be understood, the shapeless specter that automatically makes hair stand on end.”

“In every life,” says Zeldin, “there is an element of victory over fear.” And then I read about an Inuit shaman who told Joseph Campbell that the voice of the universe says one basic thing, and that is: “Be not afraid of the universe.”

Be not afraid of the universe: that is exactly the un-

derstanding that Slocum's great book exhales. And it echoes my own small experience. I begin a voyage fearful of the sea, of the boat, and of my own limitations. As I sail, however, the fears disappear. Challenges arise, and I deal with them. I am absorbed by the experience of sailing, and the living world I inhabit. The longer my voyage, the less fearful I become. Eventually I become downright exultant.

It seems absolutely perverse that going to sea should tend to purge one of fear. But perhaps this is the emotional arc of every little cruise, the addiction of sailing — fearfulness experienced, confronted, and discarded.

Across to Cascarette Island, back to Poulamon Bay, and up into Knife Inlet. The jumbo works fine, but the windvane needs refinements. Off Indian Island we bear away for the downwind run to D'Escousse. The slanting sunlight on the ruffled water makes, says Marjorie, “a million diamonds on the water.” Cormorants stand black on the Goillon Reef, terns circle and hover off Bernard Island. We may not sail again this year, but the day is etched in our memory, and we feel at ease in the world. 

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