GOOD OLD BOAT™

THE SAILING MAGAZINE FOR THE *REST* OF US!

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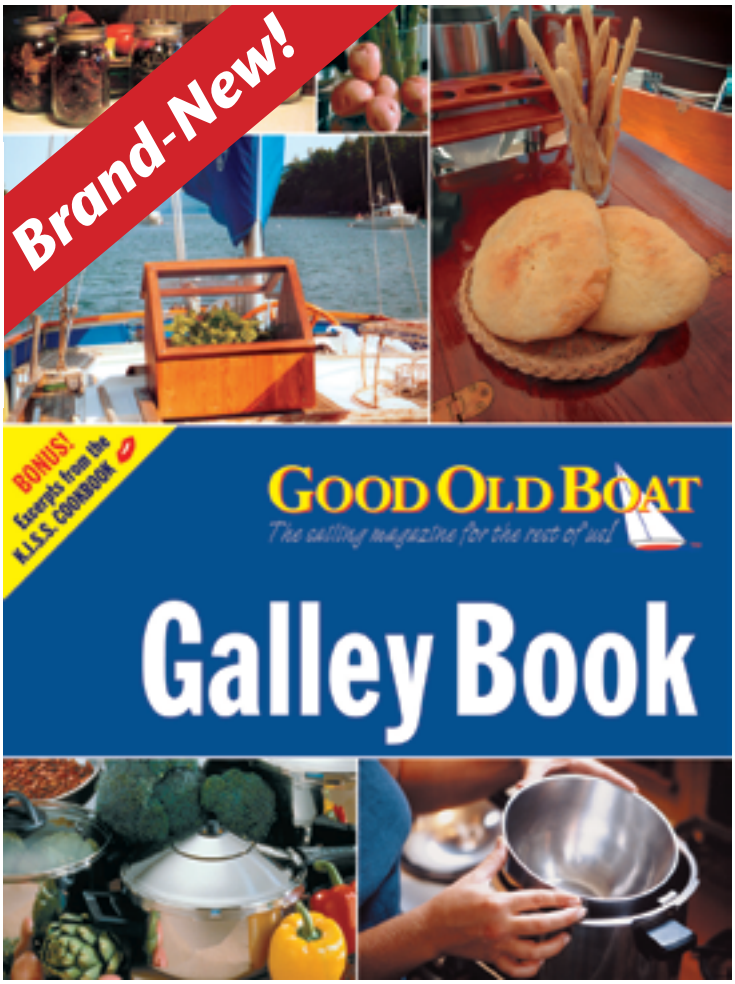
JULY/AUGUST 2009

For the love of sailboats

Speaking seriously

Introducing the
Good Old Boat Galley Book



Just right for your galley, this book is small: it's a PDF on a disc! And it's affordable: $19.95

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- Making your own **yogurt**
- Growing **sprouts**
- What to do **when the salad veggies are gone**
- **Canning meat**
- **Drying foods**
- **Harvesting** the bounty of the sea
- Dealing with too much of a good thing: **storing and preserving** the food you catch, collect, or buy in bulk
- **Bonus tips and recipes** from Corinne Kanter's ever-popular *K.I.S.S. Cookbook*!
- **Pressure cooking** tips and recipes
- The priorities (tools and recipes) in a **trailersailer's galley**
- **One-pot meals**
- **Provisioning**
- **Conserving water**
- **Growing your own** herbs aboard
- **Solar cooking**
- **Preserving cheeses** when on long passages
- Did we mention **bonus tips and recipes** from Corinne Kanter's ever-popular *K.I.S.S. Cookbook*?

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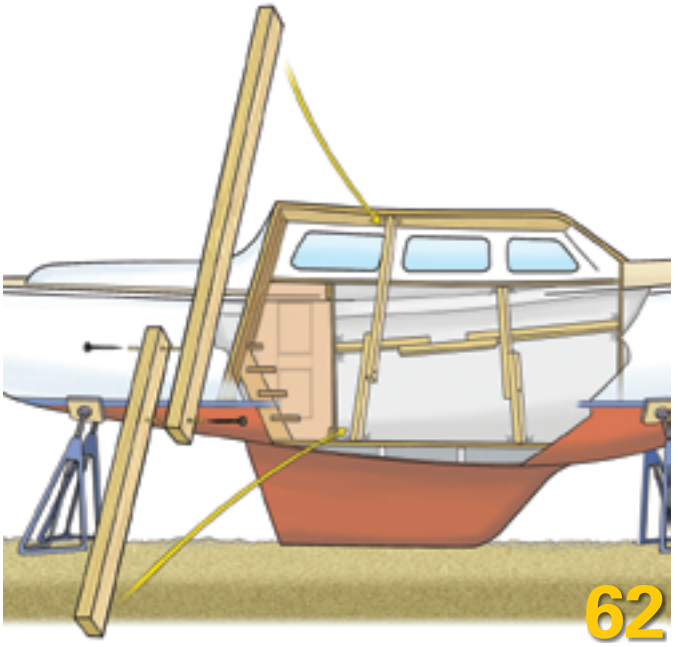
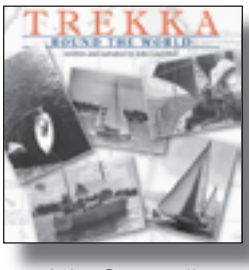


About the cover . . .

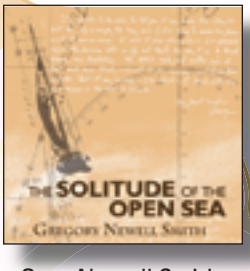
Dave Clemans got our attention with this image of his 1972 Bristol 26 taken at dawn on the Fourth of July as she lay in the mouth of the Rappahannock river with the sun rising over Chesapeake Bay. Dave admits to being a smitten captain. But we're smitten too.

Circumnavigations and other true sailing tales!



John Guzzwell:
Trekka Round the World

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



Greg Newell Smith:
The Solitude of the Open Sea

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

Dave and Jaja Martin:
Into the Light

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

Russell Doubleday:
A Year in a Yawl

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

Good Old Boat:
Bookends
50 View from Here and Last Tack columns

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

Joshua Slocum:
Sailing Alone Around the World

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

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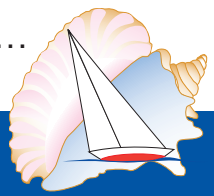

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Gleaming like new

Mystic *experiences a paint-and-sandpaper miracle*

by Karen Larson

Oh! My! Goodness! I *never* believed in the shoemaker's elves. Those little creatures came in the night and completed the shoemaker's unfinished shoes. A lovely fairy tale. But now that I've seen my good old boat looking like new, I can't separate fact from fiction.

When we left our 1976 C&C 30 at the Barker's Island Marina boatyard in Superior, Wisconsin, in the fall, she looked every bit her age. But when we returned in spring she'd been transformed with a newly painted deck that positively shines. I know the elves who made this miracle happen didn't wave magic wands. They must have been down on their hands and knees with sandpaper, cleaners, fillers, and power tools. They dressed up in full body suits and wore respirators. But I didn't see or participate in any of that hard work, so it looks like a miracle to me.

"…we're too old to spend that much time on our knees."

Much more trouble

Painting a deck is infinitely more trouble than painting a hull. That's why we put it off. And put it off. We delayed at least five years. It's not that we were lazy. We'd just been through the trauma of a deck painting job with our second boat, the project boat in our backyard, and those memories were still too fresh. For that job, we'd removed all the hardware and done the prep work ourselves. To protect our pocketbook, we put in months of work so the painter would have little more to do than rig up his paint sprayer and let fly. We'd learned from that experience: prepping a deck for painting is a *lot* of work.

We figured we're too old to spend that much time on our knees. Besides, we'd rather be sailing. This is what we told ourselves before removing all the hardware in the fall and leaving the prep and painting miracle up to the boatyard. We hung on to that promise as our retirement funds shrank in the economic crunch. We figured we'd be doing our part to stimulate the economy. Even if we pull in our belts elsewhere, we're still going to sail our good old boat. This was to be the year of the new deck, rather than sails, a cabin heater, or repowering. I don't think we'll regret that decision. Not when we're aboard this summer.

One of the boatyard elves noticed us ooh-ing and aah-ing over her transformation. He called up to us, "Hey! Your boat's not a good *old* boat anymore!"

But, at 33 years, our C&C 30 is very much a good old boat. She's been renewed. That's what good old boaters do. We renew our boats one part at a time and sail them as often as possible. It's a lifestyle. It's a hobby. It's a passion. In spite of the occasional big-budget items, it's still a very affordable escape.

Yes, Sir, she's our baby! *(And we're so proud.) For a short video clip of the editors' newly glamorous good old C&C 30, please visit our brand-new online videos page: <http://www.goodoldboat.com/resources_for_sailors/videos>.*

Of moorings, searchlights, and

LAURIE MOHER

Tom Willison's Tartan 30, *Tomfoolery*, is this issue's Editors' Choice for photo honors. Go to our site to see other boat photos: <http://www.goodoldboat.com/reader_services/reader_photos.php>. Bob Hallworth wrote a great description of the growth of the Tartan 30 fleet at Lake Ontario's Presqu'ile Yacht Club. Submit your own photo to webmaster Jerry Stearns: jstearns@goodoldboat.com. If we publish yours here, we'll send you a good old T-shirt or ball cap.

Blue, not red!

When I opened the current issue and looked at my article on picking up a mooring ("Mooring Buoy Pickup 101," May 2009), I thought, "Oh no, there will be some letters on that." The color band on the mooring buoy is wrong. To comply with the universal state waterway marking regulations (applicable to waters under state control), mooring buoys should be white with a horizontal blue band to differentiate them from navigational buoys.

In the sketch of a mooring I sent you, I used the correct color scheme. I don't know why that was changed.

– Don Launer, Forked River, N.J.

Isn't it pretty though?

Oops! Somewhere along the line, our illustrator took a bit of "artistic license" with this illustration and our editors blinked and missed it.

– Editors

And furthermore

The sketch of the mooring set-up has the pennant attached to the top of the chain. It should be hooked into the top of the upper swivel. The lower swivel is really optional and just gives assurance that the boat will swing around the block/mushroom.

I speak from many years of rigging my own mooring. Here in Maine, we get 9 feet of tide twice a day, and as the bay goes by *Secret Water*, it often sends her in circles all day and night. It is very important that the chain does not hackle up when this happens. Who cares if the ball can go round and round?

– Art Hall, Belfast, Maine

About a previous 101 column

Don Launer, in his January 2009 "Signaling for Help 101" article, left out one signal: an inverted national flag or ensign. I saw this successfully used 50 years ago while in the Sea Scouts.

– Bill Bayley, Poulsbo, Wash.

Cable Cuffs and UV

Just a note on the "Cable Cuffs" article (May 2009). I have used them in the past and still do. They work very well, but I found that leaving them in the sun constantly will cause them to fall apart after a couple of years, since they are not UV stable. You may want to have extras on hand.

– John Rozema, Brechin, Ontario

DIY searchlight

I saw the article in the March 2009 issue about the remote-control searchlight mounted on the bow pulpit. I gave this idea some thought. I wanted to have something like this also but didn't want to spend as much as author, Frederick Corey. I am going to use the same basic concept as Frederick did but, instead of a remote-controlled searchlight, I will mount a pair of LED foglights to the board. With a pair of lights, or possibly even four, I can cover the whole front of the boat with lights that tilt up and down. I think this will meet my needs for far less than the remote-control searchlight. I will add a deck-mounted plug so I can plug the lights in when needed.

Thanks for the great idea! Love your magazine.

– Daniel McCauley, Arlington, Texas

For 100 years, a club for the rest of us

If you've ever traveled the Hudson River from Albany to New York City (or the other way around), you've passed by the Nyack Boat Club sitting on the west bank of the Hudson just north of the Tappan Zee Bridge. Founded September 10, 1909, we are celebrating our centennial year and invite all boaters to stop and enjoy our famous hospitality if you are in the area.

100th birthday parties . . .

Our Wednesday night racing could be mistaken for the Good Old Boat Regatta, since many of the boats participating were built before 1985.

From the beginning, the club has been a do-it-yourself operation that has survived 100 years of changing economic times, global wars, and incredible advances in technology. The glue that has held club members together has been a love of boats, sailing, racing, and cruising, along with a need to share that passion with others.

The modern-day Nyack Boat Club (please don't call us a yacht club!) is a beehive of older boat maintenance, one-design racing, cruising, educational programs, and social activities. Our 300 members are from all walks of life. Behind the scenes, an army of members has always chipped in to build docks, maintain the clubhouse, and keep all of the club watercraft operational. This is truly a club for the "rest of us."

– Lee Luce, Warwick, N.Y.

A good old sailor experience

Quite a few years ago, around 1979, my then-fiancée and I were spending the day in Holland, Michigan. After lunch, we decided to walk the docks and ooh and aah over the sailboats in their slips. (At this time, my "yacht" was a 12-foot wooden daysailer, so anything bigger than that deserved close attention.)

A beautiful wooden sloop of about 45 feet caught my eye. As we stood on the dock admiring her sweet lines, a gentleman and his wife came up from below. I struck up a conversation with them gushing, I must admit, on the beauty of their boat. "Well, don't just stand there, come on aboard," he said, and proceeded to give us the grand tour while telling us some of the boat's history. She was *Scaramouche,* once owned by Jascha Heifetz and then by one of the Gabor sisters. In the flag locker by the nav station was a complete set of flags given to Jascha Heitfetz by Jacques Cousteau.

After a half hour or so, we took our leave with the words, "Stop by again anytime," echoing in our ears. Unfortunately, I now do not remember the names of our gracious hosts.

Back in the early '60s Honda motorcycles had an ad slogan that proclaimed, "You meet the nicest people on a Honda." I would say that Honda never had anything on good old boaters.

– Ted Rensland, Edmore, Mich.

A book you might like

I recently found a copy of *Airborne* by William F. Buckley, Jr., in my secondhand store. WFB was a lifelong sailor and a Sahara-dry humorist.

I took special pleasure from *Airborne*'s first 100 or so pages. Against the backdrop of his high intellect, deep and varied experience, and vast resources, WFB recounts one mishap after another. After reading about dismastings (a bridge), sinkings (in the harbor), groundings (in familiar waters), MOB (saved), ruined engines (three), and more, I know I will laugh that much more readily when my own rigging parts, a tool rolls overboard, or a fuel line becomes fouled.

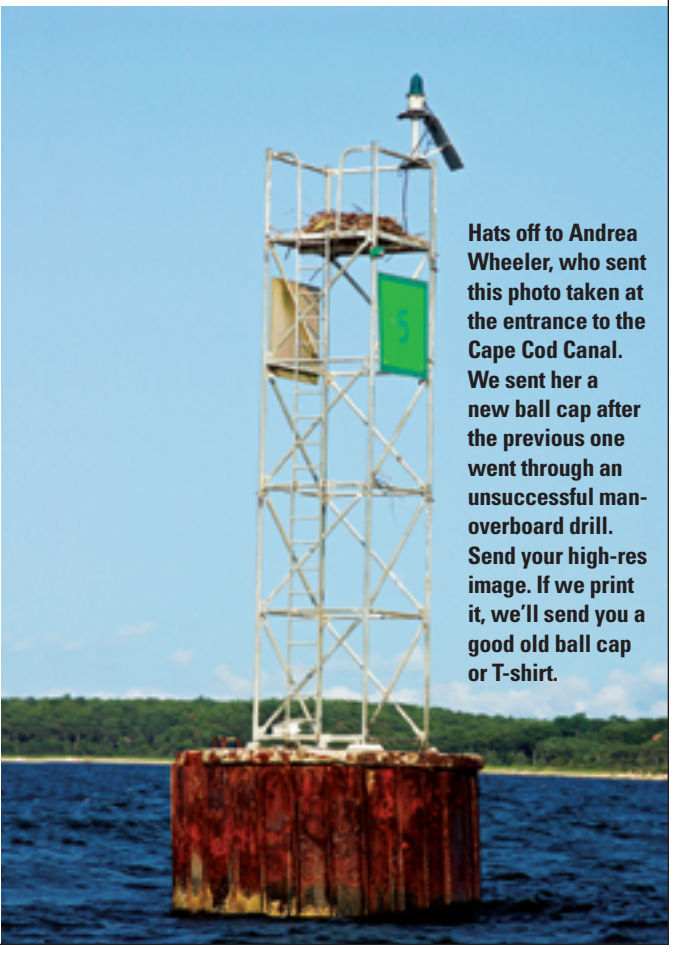
Airborne's first 100 pages may become required reading for any landlubber guests I take aboard. Hopefully, his humor in disaster will dry out some of our own wet mishaps!

– Walter Heins, Anchorage, Alaska

Took me back in time

Paul Ring's review in the January 2009 issue, "A tale of two O'Day 28s," took me back in time many years. As a kid growing up in Mobile, Alabama, in the late 1970s, I can remember when the O'Day dealer was located across the street from Fly Creek Marina and the Fairhope Yacht Club, where the two O'Day 28s in the article are now moored. I learned to sail on that bay and can remember once making my dad stop so we could look at the boats, including 28s, on the way to my grandparents' house in Point Clear.

Fast forward to 2002. I bought hull #198, a 1980 model. It was in poor shape from neglect and I've been restoring it a little bit each year. I know every inch of that boat. Between restoration and having it out on Lake Michigan in some fairly heavy conditions, I can personally attest that O'Day built a sound boat. It has its quirks — any boat does — but it is an attractive and reliable pocket cruiser that still



Hats off to Andrea Wheeler, who sent this photo taken at the entrance to the Cape Cod Canal. We sent her a new ball cap after the previous one went through an unsuccessful man-overboard drill. Send your high-res image. If we print it, we'll send you a good old ball cap or T-shirt.

attracts positive comments from other sailors. My only regret is that, with the move to Chicago, my sailing season has been cut to barely six months a year!

Thank you for the excellent review and for the magazine in general. It is great to see coverage of the boats that *don't* cost a small fortune to acquire and maintain. Sometimes, the best boat you can have is one that is paid for.

– Bob Amos, Chicago, Ill.

Memories of *Magnolia*

I just finished reading Paul Ring's great article on the triumph and tragedy of *Magnolia* (May 2009). Tell him not to worry. Her soul is at peace in *Good Old Boat* magazine heaven.

– Dave Dickmeyer, Fort Wayne, Ind.

Special significance

Magnolia added a special significance to a good many years of my life and — while now in *Good Old Boat* magazine heaven — she continues to do so, albeit in a greatly different way.

– Paul Ring, Fairhope, Ala.

Don Casey's chainplate islands

I read, with much interest, Don Casey's article on chainplate islands (March 2009). In 1999, we purchased a 1969 Allied Seawind, one of the few original sloops, and rebuilt her over the next two years. This was our first GRP boat, having downsized from a composite-constructed Joel White design of a Concordia 33, a larger boat of similar design to the Seawind.

Our initial inspection indicated the chainplates had been leaking. I have never been an advocate of through-deck chainplates. The solution on our Seawind was to remove them and relocate them to the outside of the hull, with a fairing piece under the hull-to-deck flange, and to have them pass outside the flange but still through the teak toerail. We reinforced the inside of the hull in the area of the chainplate. To us, the advantage of clear sidedecks, without toe-stubbing chainplates and stays, and no leaks, far outweighed any advantage in close-winded sailing offered by inboard shrouds.

I also noted from the photos that Don has installed Treadmaster decks. We had this decking on our Joel White boat and have now installed it on the Seawind. As offshore sailors (not so much now), we know of no better decking.

– Gerald Peer, Westfield, New Brunswick

I did it!

How many of us dream of untying the lines on a 30-year-old cruiser, sailing in and out of adventures, and living to write a book about it? I'm honored — astounded, really — to say I've done it. My travel memoir, *The Motion of the Ocean: 1 Small Boat, 2 Average Lovers, and a Woman's Search for the Meaning of Wife*, is out with Simon & Schuster this summer.

This is not your typical sailors' cruising tale — there's no discussion of holding conditions, weather routing, or the best

place to get a beer in the Marquesas. (OK, maybe I do mention the latter.) I wrote it, instead, for a broader, non-sailing audience. For guys trying to convince their wives to go cruising, this is the book. And for couples wanting to know what sailing into the sunset is really like, I do not mince words. Our story reveals the ups and downs of life and love at sea.

Please give it a look at <http://www.byjanna.com>. And while you're there, leave us a link to your own sailing blog or tell us about your own cruising dream.

– Janna Cawrse Esarey, Seattle, Wash.

Centering a hole saw in space

In regard to drilling a larger hole around a smaller one (as shown in the March 2009 Mail Buoy), here's another idea. First, fit on a hole saw mandrel the saw for the larger size that you wish to drill (say 2 inches) and tighten it all the way up. Next, take the hole saw that fits the hole in the hull you want to enlarge (say 1¾ inches) and tighten that hole saw on the mandrel inside the larger one. Usually the smaller hole saw will stick out some and help as a guide. Otherwise, just back out the smaller one so it will be a guide. Drill slowly while holding the saw to the hull at the proper angle.

– Arnold Lucas, Richmond, Va.

A good trick

A few years back John Spier sent us an article about this idea. It ran in our July 2005 issue. The photo at right is from that article.

– Editors

Something to grab

Regarding removing a bronze Cutless bearing from a keel (mentioned in the March 2009 Mail Buoy), whenever I install a bearing, I leave a quarter inch sticking out. I can then just twist it out with a pipe wrench later on. This always works for me. It probably would work with a strut, also.

– Harry Anderson, Port Townsend, Wash.

Coppercoat now available in the U.S.A.

Coppercoat, the multi-season antifouling paint, is now available in the U.S.A. Developed in the 1980s and available to the public since 1991, Coppercoat may be the most powerful and longest lasting antifouling available in the marine industry.

Because Coppercoat has no VOCs and is classified as non-leaching, this coating is kinder to the environment than its self-eroding competitors. It does not ablate or slough off, so it doesn't pollute the water. The self-leveling property of the epoxy results in a smooth surface and increased efficiency. Racing sailboats benefit from Coppercoat's low drag when it's burnished to a super-smooth finish and it doesn't lose its efficiency after it is hauled out of the water.

Please call 321-514-9197 for details, or visit our website at <http://www.Coppercoatusa.com>.

– Jim Edwards, Margate, Fla.

Fixer-uppers page really works

I've sold the Ranger 23 that you kindly listed in the free web ad on your Fixer-Uppers page. You may remove it from the website, and thanks for helping me sell her to a good guy who's already started getting her gussied-up.

– Scott Keck, San Francisco, Calif.

Free and cheap boats listed at no charge

If you haven't noticed the free listings for bargain sailboats on the *Good Old Boat* website, what are you waiting for? Right after our Classified Ads page, this is the second most visited page on our site: <http://www.goodoldboat.com/resources_for_sailors/fixer-upper_sailboats.php>.

– Editors

Not just for cruisers

Yours is one of the most practical and enjoyable sailing magazines I read. Even though I'm a pure "racing" sailor on San Francisco Bay, I enjoy learning about other sailors' adventures, mishaps, and maintenance tips.

– Larry Westland, Alameda, Calif.

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

Alberg 35

An oldie but goodie CCA'er from Pearson Yachts

by Gregg Nestor

The Alberg 35 is but one of several classic cruising yachts designed by Swedish-born Carl Alberg and built in Rhode Island by Pearson Yachts. Introduced in 1961, it was a fixture in the Pearson line until 1967, and during this six-year period, approximately 280 Alberg 35s were built. From the standpoints of both sales and performance, the Alberg 35 was a very successful production yacht.

Although a bit long in the tooth today, the Alberg 35 continues to deliver sailing pleasure and adventure while showcasing Carl Alberg's legacy of well-designed, good-looking cruising boats that are both exciting and safe to sail.

Design

All Alberg-designed boats have distinctive lines and shared characteristics. The Alberg 35 is no exception to this seaworthy Scandinavian influence and has all the hallmarks of Alberg's style: a somewhat flat yet slightly springy sheer, spoon bow, long balanced overhangs, rounded cabin trunk, slightly raised doghouse, winch pedestals, and wooden cockpit coamings.

Alberg designed the 35 to suit measurement under the Cruising Club of America (CCA) Rule and it represented the state-of-the-art racer/cruiser for 1961. By today's standards, the beam is a bit narrow at 9 feet 8 inches, and the waterline, at 24 feet, is a tad short. These proportions are good for gliding along in light air, in spite of the boat's somewhat squat rig. Add a breeze, and the long overhangs help extend the waterline length when the boat heels.

The boat's underbody is a cutaway full keel, drawing 5 feet 2 inches, with an attached rudder. Its displacement of 13,000 pounds, 5,300 pounds of that in the form of encapsulated lead ballast, gives the Alberg 35 the seakindly motion expected in a boat with a solid

Tom Alley's 1965 Alberg 35, *Tomfoolery*, demonstrates that, even at 40-something, she is sweet on the eye and has a sweet way with the water, just the way Carl Alberg designed her, left. Like most of the old Pearsons, the Alberg 35 has an afterdeck with a lazarette and teak coamings as backrests. Note the tiller head behind the wheel; fitting an emergency tiller will take some ingenuity, far right.

comfort ratio of 34.6. (***Note:*** *Designer Ted Brewer devised the comfort ratio. It's based on displacement, waterline area, and beam.* ***–Eds.****).* The higher the comfort ratio (CR), the more comfortable the ride. Most ocean cruisers generally exhibit a CR in the 30s. For comparison, a Niagara 35 has a CR of 28.7. For a C&C Landfall 35, it's 30.8; and for a Bristol 35.5, it's 32.2.

Construction

Both the hull and deck of the Alberg 35 are fiberglass. While the hull is a heavy uncored hand-laid laminate that is greater than 1-inch thick below the waterline, the deck is a sandwich of two layers of fiberglass with a core of balsa.

Balsa is extremely light and has physical properties that make it well suited for sandwich construction techniques that create rigid, but light, structures. It also insulates against heat, cold, and sound. Unfortunately, the balsa used in many early fiberglass production boats was not end-grain cut, but edge-grain cut. Edge-grain balsa has less compression strength than end-grain balsa and permits water to migrate through the laminate. Beginning around 1963, Everett Pearson, who founded Pearson Yachts, pioneered the use of end-grain balsa as a coring material. However, constant flexing of cored decks can, over time, cause a break in the bond between the fiberglass skins and the balsa core. Water penetrating the voids that result can turn the core into pulp.

If the deck feels mushy beneath your feet or gives off a dull thud when struck with a mallet, it's a good bet the deck is at least partially delaminated. While small areas of deck sponginess can be corrected, extensive delamination is reason enough to reject the boat.

The underbody of the Alberg 35 has a cutaway full keel. Its 5,300 pounds of ballast, cast in one piece, was lowered into the hollow fiberglass keel cavity of the one-piece hull molding, then glassed over. This encapsulated ballast eliminates concern over corroded keel bolts — there aren't any. However, some boats have a void between the bottom and sides of the lead casting and the fiberglass shell. This makes the fiberglass shell vulnerable to damage from groundings. Should a surveyor find that this condition exists, it can be corrected by filling the void with resin.

The rudder is tiller-operated (wheel steering was an option) and attached to the keel on a raked rudder post. The rudder itself is wood and the post a heavy bronze rod. While the design is dated, this form of construction is sound and can be easily inspected, maintained and, best of all, upgraded.

Deck features

Apart from port and starboard mooring cleats and a deck pipe leading to the chain locker, the foredeck is free of clutter, making it a good working platform from which to deploy or retrieve an anchor or make headsail changes. Located on top of the rounded cabin trunk, the teak-covered forward hatch provides ventilation for the forward cabin, aided by a pair of bronze-framed opening ports. Two cowl vents mounted on Dorade boxes just aft of the mast, together with another pair of opening ports, afford ventilation and light to the head. The slightly raised doghouse outwardly denotes the main cabin, which is naturally illuminated by four fixed portlights.

Wide sidedecks, outboard shrouds, and four sections of teak handrail along the coachroof make fore-and-aft movement on deck easy and relatively secure.

The cockpit is long and large, and while it provides plenty of room for daysailing and entertaining, its size is a concern for any serious offshore work. The cockpit is self-draining and its bona fide bridge deck will help prevent water from spilling into the cabin should a wave fill the cockpit. The teak cockpit coamings are relatively high and provide reasonable, but less-than-comfortable, back support.

The standard tiller is long and takes up a lot of cockpit space. Pedestal wheel steering was available from the builder and many boats have been fitted with this option.

For storage, the cockpit has large seat lockers port and starboard, as

Good old test boat, *Tomfoolery*, has the "traditional" arrangement, in which the compact galley is laid out either side of the companionway, above left. In the saloon, settees facing each other across the dining table make good sea berths, above right. With the table stowed, access forward to the head and stateroom is much improved, below.

well as a true lazarette beneath a hatch located just aft of the mainsheet traveler. These stowage areas share three undesirable characteristics: inadequate watertightness, poor closures, and drains that lead directly into the bilge. All of these conditions should be addressed before heading out for serious bluewater sailing.

Belowdecks

Just aft of the chain locker is a large forward cabin with a V-berth, hanging locker, and bureau. Beneath the berth are four drawers; outboard and above it are fiddled shelves. Because of the lack of an insert and the arrangement of the V-berth, the cabin has adequate floor space under standing headroom to permit normal activities like changing clothes and rummaging through lockers.

Aft of the forward cabin is the head compartment. It spans the full width of the boat, which provides a fair amount of usable space and maneuvering room. The head and a linen locker are to starboard, while the sink, a hanging locker, and additional stowage are to port. The shower is on the centerline and has its own sump — the Alberg 35 was one of the first boats of this size built with a shower and pressurized hot and cold water as standard equipment. Privacy in the head is gained by closing the doors to the forward cabin and saloon.

The saloon was offered in two configurations, a "traditional" arrangement with opposing settees and a more "modern" dinette arrangement.

In the traditional configuration, the settees face each other, with a bulkhead-mounted, drop-leaf table between them.

In this arrangement, the galley is aft and spans the width of the boat. There are no quarter berths, so the settees are used as sea berths. The aft galley incorporates a small sink and a two-burner alcohol stove to port, and a top-loading icebox to starboard. When closed, the icebox provides galley counter space and serves as a navigation and chart table.

The alternative arrangement has a U-shaped dinette on the port side and the galley to starboard. This offers some interesting possibilities. First, lowering the dining table converts the dinette to a double berth. Also, the galley is a bit more workable and has room for a three-burner stove/oven along with the icebox, sink, and food lockers. Since the galley no longer spans the aft portion of the saloon, there's room for two quarter berths, but the dining table will have to double as the chart table.

Although the forward cabin gets adequate air flow from its overhead hatch, and the head compartment from the cowl vents, the only direct ventilation in the saloon is that provided by the open companionway hatch.

The interior décor is dated. Pearson finished the bulkheads, cabinetry, and other surfaces in what it termed "low maintenance" wood-grain-pattern plastic laminate. With a little sanding and painting of the laminate, and some varnish on the standard teak trim, the boat's interior appearance will improve dramatically. Headroom is a generous 6 feet 4 inches.

The engine is situated beneath and behind the companionway stairs; by removing several panels, near total access can be obtained. Lifting the cabin sole provides access to the potable water tank and the relatively deep bilge.

Depending upon the production year, the Alberg 35 was fitted with any of a variety of tanks. They were made with different volumes, of different materials, and placed in different locations. The design specifications for a late-production-run boat called for an integral fiberglass 48-gallon water tank beneath the cabin sole and a 23-gallon Monel fuel tank beneath the cockpit sole, behind the engine.

Resources

Tom Alley's Alberg 35 website
<http://www.alberg35.org>

The rig

The Alberg 35 was available as a sloop or yawl. The CCA Rule lightly taxed the mizzen sail and permitted a mizzen staysail to be carried without any penalty. This feature of the rule made the yawl quite popular. The mizzen can be used to help balance the boat and is especially helpful in maneuvering in a crowded anchorage under sail. Nevertheless, when the actual performance of the yawl and the sloop are compared, the sloop comes out ahead.

In both the sloop and the yawl, the mainmast is in the same location. It is somewhat forward, resulting in a small foretriangle and large low-aspect-ratio mainsail. One of the benefits of this rig is that the Alberg 35 can be sailed quite effectively under main alone. The sail area/displacement ratio is 16.1 for the sloop and 17.2 for the yawl.

The Alberg 35's mast height is 44 feet 6 inches from waterline to masthead. The mast is stepped on deck and supported below by a bridge and two compression posts. The mast's standing rigging is comprised of a forestay, a single pair of cap shrouds, dual lower shrouds, a single pair of spreaders, and a backstay. The mast is anodized aluminum; the boom is varnished spruce.

Originally, roller reefing was standard on the mainsail. All halyards are cleated at the mast(s) and mechanical advantage is achieved by means of Merriman #2 winches. Merriman #5 winches for the genoa sheets are mounted on pedestals outboard of each cockpit coaming. As is the case with the original roller reefing, upgrades are well warranted. New self-tailing winches are expensive but would make a big difference. The end-boom mainsheet is attached to a traveler located just forward of the lazarette.

Under way

While Pearson Yachts promoted the Alberg 35 as a racer/cruiser, it was and still is primarily a cruising sailboat. Its relatively narrow hull and heavy displacement give it an easy motion in a seaway and the ability to carry a modern cruiser's payload. Its displacement/length ratio is 407, making it a very heavy-displacement cruiser. Unlike more modern boats with more beam, the Alberg 35 is a bit tender. However, once it reaches 25 degrees or so of heel, its 42 percent ballast/displacement ratio begins to make itself felt. The boat stiffens up dramatically and, like most narrow boats, sails quite efficiently at fairly steep angles of heel. Unlike some modern beamy boats, the Alberg 35 shows no tendency to round up uncontrollably in gusty winds.

For auxiliary power, the Alberg 35 relies on the Universal Atomic 4. This venerable gasoline power plant is cooled directly with raw water and can provide a cruising speed of about 6 knots in calm conditions. The boat handles well when motoring forward; in reverse, however, it steers poorly. This is due to a combination of several factors. The rudder is tucked well forward under the boat, it's attached to a full keel, and the prop is in an aperture between them. It takes practice and time to get used to it.

Things to check out

Before you fall for an Alberg 35, remember that the youngest one rolled off the line in 1967. For starters, check the decks for delamination caused by a balsa core saturated with water. Pay keen attention around fittings, such as cleats and stanchions. Delaminated areas sound dull and hollow when tapped with a plastic hammer or the handle of a screwdriver.

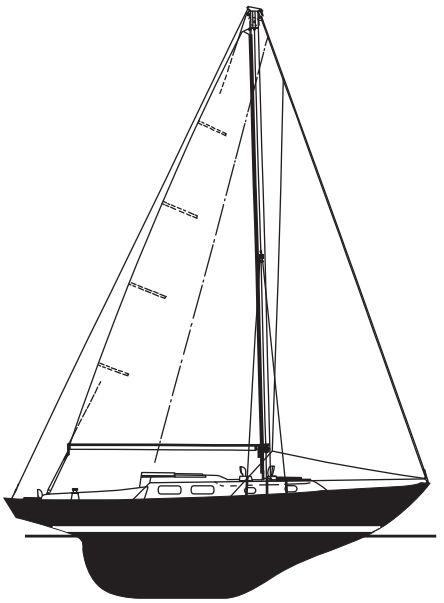
Compression of the structure under the mast step is a potential problem. Look for signs of cracking, bending, or movement of the mast support beam and associated compression posts.

As with most sailboats of this vintage, the gelcoat may be crazed and faded. While this may be mainly a cosmetic problem, if crazing becomes so extensive it allows water to migrate into the laminate, the problem then becomes structural.

Have the surveyor check for a possible void between the ballast casting and the fiberglass shell. Inspect the wooden rudder for damage due to groundings and for corroded mounting bolts.

Because water and fuel tanks can vary from boat to boat, take a close look at them. It has been reported that early boats had galvanized tanks. These will eventually rust through. Monel and fiberglass are much better materials for this purpose.

As with any boat of this vintage, be prepared to address the wiring, the rigging, the sails and sail-handling gear, the alcohol stove, the electronics, and the Atomic 4.



Alberg 35

Designer: Carl Alberg
LOA: 34 feet 9 inches
LWL: 24 feet 0 inches
Beam: 9 feet 8 inches
Draft: 5 feet 2 inches
Displacement: 12,600 pounds
Ballast: 5,300 pounds
Sail area (sloop): 545 square feet
Sail area (yawl): 583 square feet
Disp./LWL ratio: 407
SA/disp. ratio: 16.1 sloop; 17.2 yawl

Conclusion

While it may initially appear that the Alberg 35 is a tired old craft, that's by no means true for all of them. This boat was designed and built with reasonably heavy scantlings and is suitable for serious offshore sailing. Its classic lines are still appealing and cause heads to turn when the boat enters a marina.

Prices for an Alberg 35 range from $23,500 for a 1964 to $29,500 for a 1967 model. If you're looking to do some serious cruising, for the money, an Alberg 35 is hard to beat. Repairs, modifications, and upgrades will add to the price, but you won't break the bank or destroy your investment.

Gregg Nestor is a contributing editor with Good Old Boat. *When he's not writing about sailing, Gregg and his wife, Joyce, cruise Lake Erie aboard* Raconteur, *their Pearson 28-2. They also trailersail an O'Day 222.*

A new wardrobe for *Blue Stocking*

Components of Sailrite sail kits are computer cut, including the corner reinforcement patches, above. Isaiah Grant (the third generation of the Grant family to enter the business) is shown here laying out the panels for a genoa.

Panel edges are curved so that, when joined together, they create the desired shape in the finished sail. The computer leaves lines just inside the edges of the panels to guide the seaming process.

A determined amateur builds a suit of sails for his ketch

by Paul Denton

I spent about three years, from 2003 to 2006, getting my Whitby 42 ketch, *Blue Stocking*, ready for extended voyaging. Financially, the biggest issue was replacing her sails. A ketch has a lot of them, and most of mine were the original 1983 equipment. I was looking at $12,000 or more for locally built new sails if I replaced the main, mizzen, working jib, and staysail, all of which were pretty tired. That was too big a chunk of the total budget.

I had heard that Hong Kong-built sails are quite good and cheaper than those I could purchase in the United States and that some sailors have had success buying good used sails from a broker and modifying them for their boats. But a third option grabbed my imagination: building my own sails. Doing it myself is a huge part of the satisfaction I gain from boat ownership. I have never liked taking sails and other canvas work to the loft for expensive repairs. This seemed like an opportunity to acquire the tools and skills I needed in another big department of sailboat management.

I decided to take the plunge by starting with just one sail. The only commercial supplier I'm aware of that caters to the home sail-builder is Sailrite. I already had some previous and positive experience dealing with them and had recently schmoozed with the staff at an Annapolis boat show: nice folks. When I decided to write about building sails, which was long after I went sailing, they helped by taking the accompanying photos.

A question of size

My largest concern was that my sails are pretty big — the main and jib are more than 300 square feet. I wondered if the folks at Sailrite were really set up to support the construction of sails as large as these, so I went to their website to see what I could learn there.

The site has an interactive tool for sail design. I was pleased to note that the dimensions of the standard Whitby 42 sails were in their database, along with those for most other production boats. I ran through the online design-and-quote process with one of my sails and liked the final price: about half the cost of a locally built sail.

I figured I could get a kit and a new sailmaking sewing machine for substantially less than the price of a new commercial sail. As I browsed through the many articles and notes Sailrite has posted online for general information about the sail-building process, my confidence grew.

Eventually, I decided to buy a sewing machine, an Ultrafeed LSZ-1, and a kit for my working jib, a 115-percent, high-cut, roller-furling jib. I called Sailrite and talked to Jeff Frank, their sail designer. He helped me make the final design decisions and reassured me about the scale of the project. A point he emphasized was that the larger and cleaner the workspace, the more smoothly the project would go. I ordered the sail and the machine.

I had a great deal of contact with Jeff during the whole process that ensued. He was consistently patient, pleasant, and competent. You are definitely not alone when you build one of these kits. And so, over two winter seasons, I ended up building all four sails, as well as a replacement dodger/Bimini, two sail covers, and a Jordan series drogue.

Sailrite shipped the machine right away, but creating the sail kit takes a little longer. Once the design is finalized, Jeff enters the design data into his computer, which then develops a cutting plan. He puts sailcloth on the cutting table and the computer-driven cutter marks and cuts the large panel pieces and small patches. It takes about a week for the kit to be designed, cut, and shipped.

Sailrite uses the same design and cutting process as other modern sailmaking operations. Because the panels are precision-designed and cut, the amateur builder, who is really just doing assembly, can expect a finished sail to be identical in all important respects to a professionally built one. At least, that's the sales pitch. I would see how it played out.

Learning the machine

As soon as the new machine arrived, I started to get familiar with it. Unlike most home machines, the LSZ-1 has a walking foot, so there's less tendency for fabric creep as the upper part of a seam slides against the lower part. The little puckers caused by machines without a walking foot are unacceptable in a sail. I opted for a few additional features for improving slow speed control: a heavy-duty speed control (the foot pedal) and a much heavier balance wheel, the big wheel on the other end of the machine from the needle. The LSZ-1 does straight and zigzag stitching, but not the fancy composite stitch that commercial sailmaking machines can do.

A double-sided basting tape applied along the marked seam allowance can be used to secure the panels together before sewing.

Jim Grant (Sailrite's founder) bastes panels together. This step is critical to proper sail shape. If there is any inaccuracy here, it will be reflected in the shape of the sail. Fortunately, any errors can easily be rectified at this point by simply lifting the sail panels apart and repeating the process.

The "bubbles" in these basted seams are the result of the curved panel edges. When the sail is filled with air, they will give it its proper shape.

I had a little setup to do on the machine — installing the Monster Balance Wheel — and then began experimenting by sewing bits of scrap sailcloth. In a few hours, I felt pretty confident with the machine. The motor runs on house current. This works for me because I have an inverter on the boat. It also has a hand crank, which I haven't tried.

The Ultrafeed is an intelligent compromise in my opinion. In some ways it's a bit small for sailmaking, even though it's a lot heavier than a typical home machine. On the other hand, it will do most of the large-scale sewing on the sails used in typical family cruising and voyaging and it's small and compact enough to bring along on the boat. I don't think a better single machine exists for amateur sailmaking. Professionals use a range of machines — with each being optimal for a particular job — but this is not an option for most cruisers.

The jib arrived in a surprisingly small package: about 4 feet long and maybe 8 inches square. Inside were a dozen or so sail panels, each 3 or 4 feet wide (all rolled into one cylinder), a bunch of pre-cut corner patches, and the appropriate selection of notions and accessories. Also in the package were a few pages of documentation, including instruction sheets and computer-design specifications that provide a basic roadmap for constructing the sail.

The instructions warn you at the outset that they are somewhat generic and, before you start sewing, you have to study them in the light of your particular sail's design to develop a construction schedule. In other words, the process is not idiot-proof, which I admit worried me a little. But I did the recommended study and planning — a matter of a few hours, including sorting the various pieces — and got started with construction.

The first step is to sew panels together into sub-assemblies (I had three sub-assemblies on the jib) and then sew these together into a final raw sail.

The sail must be rolled so it will pass inside the "throat" of the sewing machine. Putting a portable machine on the floor provides, in essence, a large working table. The foot pedal for the machine is under Jim's right foot.

Building in the shape

As described earlier, each panel had been cut by a computer-driven cutter/marker. Two of the edges are cut straight and the two that are to be sewn to adjacent panels have a slight outward curve. This is called broadseaming and it is the primary technique by which a sail is given its curved airfoil shape. If all the edges of each panel were straight, the sail would come out essentially flat; that is, without draft and without the ability to generate full power to windward.

The upper edge of each panel is also marked with a seam allowance line. The basic technique for joining panels, repeated many times, is to place double-sided basting tape along the inside of the marked seam allowance, then attach the adjacent panel to it, following the seam allowance line as closely as possible and taking care that the tension on both panels is the same so the ends come out even and there are no puckers. Once you have achieved this with double-sided tape, you sew each seam three times with a zigzag stitch.

The concept is simple, but doing it is not easy, especially as the size of the sub-assembly increases. The part of the assembly that is outside the machine is no problem, but the other part has to be rolled tightly so it will fit inside the "throat" of the machine. Sailcloth is stiff and slippery when new, so the trick is to keep the rolls intact. I used large spring clamps at each end and in the middle of the roll and switched each clamp from in front to behind the machine as it approached the needle.

Fitting it all together

The final sewing of the sub-assemblies worried me a little. It did take a little extra time and patience, but it worked. As I went along, following the detailed construction schedule I had developed, I sewed the various patch assemblies at the corners and (in the case of the reefing sails) along the luff and leech. It's generally easier to do these jobs while working with the smallest possible assemblies — ideally just with one or two panels plus the patch assembly.

As with so many big projects, the devil is in the details. For example, if you've done any machine sewing you know that there are two threads — the obvious one in the needle and the hidden one inside the machine in the bobbin. The needle thread feeds off a huge visible spool. It will last through all but the largest projects. The bobbin, on the other hand, is only about the size of the tip of your thumb. Its thread runs out many times each day, invariably in the middle of a really long seam. It can be a project to get the material out of the machine, change the bobbin, and reposition the material to start again where you left off.

I learned two things. First, you can get pre-wound bobbins that just pop into the bobbin case. These save the effort of winding bobbins and are a great convenience. Second, with a little planning, you can generally predict when the bobbin will run

out and replace it before you start sewing a new line of stitches. You waste a little thread this way but save a lot of time and frustration. I tended to cut this a little close (just like I tend to drive my car a little too close to empty) and occasionally got caught out. But much of the time I got it right.

Making patches

Another little problem was making neat patch assemblies. As you know, the corners of sails are reinforced with a series of roughly triangular pieces of sailcloth that spread the load of the corner fastening out onto the sail itself in an effort to minimize point-loading, which could result in a sail failure. These corner pieces are called patches. The biggest patch goes on the outside with the smaller ones progressively closer to the sail. The assembly is basted together at its edges but has to be sewn onto the sail right through the edges of each patch, which of course you can't see. I ended up holding the patches against a window so I could mark on the outer patch the line for sewing each inner patch.

Luff, leech, and foot

Next comes finishing the edges of the sail. In the case of the jib, this involved sewing the pre-constructed luff tape (which fits into the roller furler's foil slot) to the luff. The unfinished luff slides in between the two halves of the tape. I was able to do much of the edging freehand (without using double-sided tape), which saved a lot of time. Because my sewing room was shorter than the sail edges, it was often necessary to cut a slit on one side of the tape so I could make a fold in the sail while keeping the tape properly aligned on the sail. The slit more or less disappears once the edge is completed.

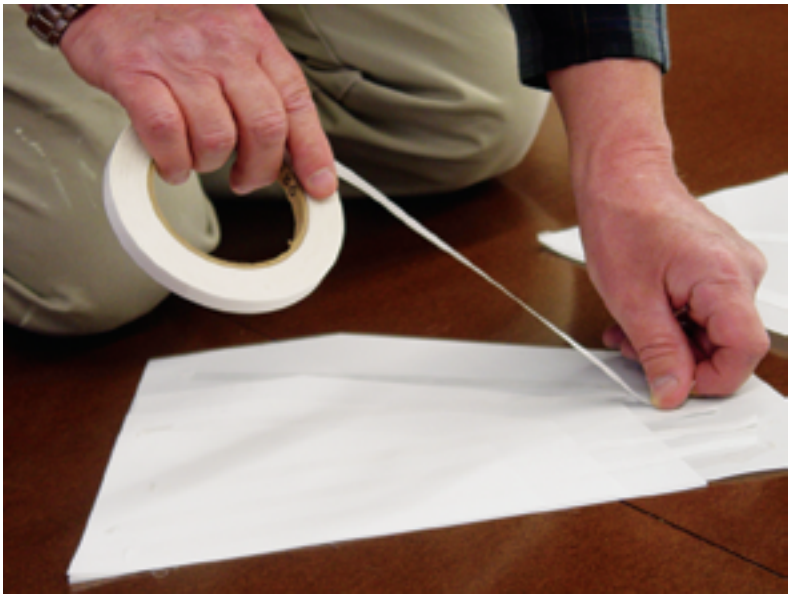
When fitting a leech cord, you place it into the leech tape and keep track of it (by feel) while you sew (since, to function, it must run free).

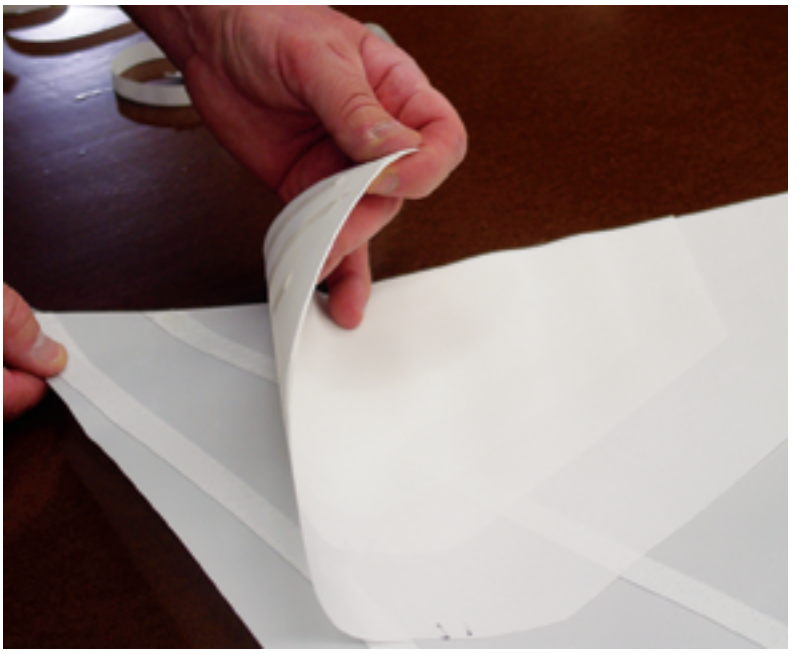
One design decision I made concerning the edges is worth noting. Most of the Sailrite mainsails have boltropes on the luff and foot. On reflection, I concluded that the boltropes really didn't add any strength on those edges and that they would definitely not work on the luff with the Dutchman slides I was going to use for the mast track. I decided to go with the widest edge tape Sailrite had available. This made construction a good deal easier and saved a bit of change as well. So far, I have had no cause to regret the decision, but time will tell. All the edge tapes Sailrite sells are pre-folded, so installing them is straightforward.

The corners generally need a bit of handwork. On the jib, I had webbing loops at the head and tack. These were mostly machine sewable. It was impressive how the needle went through about seven layers of cloth to sew these down. I added a few hand stitches closest to the corners where the machine ran out of steam and skipped stitches. On the main and mizzen, the heads use manufactured aluminum headboards. These are riveted on with easily managed aluminum rivets.

Laboring over grommets

In the Sailrite kits, the clew, tack, and reefing cringles use traditional worked grommets. The name is appropriate, with the emphasis on "work." Each one took a solid hour. First you mark the location and cut a round hole. I used a razor blade and an X-Acto knife. Then you mark spaced locations around the hole for the stitches and you hand-sew a brass ring into the hole. Finally, you install an inner ring that crimps on and covers the stitches, insulating them from the chafe of





Corner patches are made up of several pieces. First, the pieces have to be basted to each other, above. The entire assembly is then positioned on the sail with the largest patch on top, below, and sewn in place.

The leech of this genoa is finished by first basting in place, then sewing to the sail, a prefolded strip of Dacron "tape."

the clevis pin that will go through the ring. This crimping requires the use of a hammer-driven die-and-anvil set that you have to buy. The die set worked, but it was a bit of a struggle, probably because I didn't have a really rigid floor to support the anvil.

I had to put in 12 of these grommets, so I didn't mind buying the die set. For one sail, though, I might have thought twice about it. On my next sail, I plan to use a combination of stainless rings and webbing for the corner grommets. I think this will involve less labor and could be stronger than the grommets. I might even be able to figure a way to use that method for the reefing grommets. Depending on the price, it might make sense to take the sail to a loft to have pressed grommets installed. While I wasn't all that happy with the worked grommets, I was glad to learn the process of installing them, and they do look nice. The one at the tack of the mainsail has deformed a little under load; I'll back it up by sewing a webbing loop onto the patches next time I'm doing sail maintenance.

A word about hand sewing: lose the sailmaker's palm. I found that most of the hand-sewing had to be done in places where the machine couldn't punch through. In those situations, I couldn't punch through by hand either. You don't want to push too hard with a sailmaker's palm — if you slip or break a needle, you can get a pretty dramatic puncture wound in your hand. In those situations, the trick is to make the holes first, then sew. I usually made holes by hammering a finish nail through the fabric and into a wooden backing board. Another possibility is to use an electric drill, but fabric will sometimes wind onto the bit. Even with the help of a pre-made hole, it still can be hard to get the needle through. I made a thick aluminum pusher with a little hole for the needle and sometimes had to finish the pull-through with pliers.

With the roller-furling headsail, there was a final challenging step — the sacrificial sun cover, made of Sunbrella. Professionals put these on in one piece; it takes an amazing amount of artistry and skill to install them neatly. Sailrite knows that won't work for the amateur builder, so they have developed a method of installing the cover in fairly short sections that overlap a bit at their joints. Even with that modification, it's not an easy project. Luckily, it came at the end, after I had acquired a little experience.

(***Note:*** *Sailrite says, "Some sailmakers do install sacrificial strips for furling headsails in one continuous panel. But the trick is not to force the material to take a bend, as this causes puckering and tight sail edges. So if the leech is being covered and the edge has a hollow, then the long strip must be wider at the top and bottom of the edge because of the hollow at the midpoint of the leech. The only argument for doing it this way is that it is faster — given a large working space. Otherwise, it takes more fabric and adds more weight to the sail, since the extra width at the top and bottom is not required."* ***–Eds.***)

Battens — boons and banes

When it came time to build the mainsail, I decided to include full-length battens, using the Dutchman system for the cars. Sailrite sent the batten material in one big (and very springy) roll that had to be unwrapped very carefully . . . lots of stored energy there! The batten aspect of the construction was straightforward. In use, the battens have their pros and cons. They almost completely eliminate flogging, which is a tremendous advantage. Naturally, as with all battens, they call for a bit of extra maintenance, especially at their leech ends, but

Lessons from a family-room loft

The workspace I had available was long and narrow, 22 feet by 12 feet, in an antique New England house. It had a varnished wooden floor that had pretty big gaps between the wide planks. The space was generally used as a family room, so I moved some furniture to the sides of the room. It was workable but not ideal. A little more width would have been helpful.

By the time you have a few panels of sailcloth assembled together, you are working with a pretty heavy sail on one side of the machine and a tight roll of material on the other. For this reason, it's probably not practical to work on a table, unless you happen to have access to a huge, room-sized sailmaking table. I ended up working with the machine on the floor while I sat on a very low footstool. Some people sit on the floor cross-legged. I guess they work the pedal with a knee. Often, it's more practical to move the machine than the sail, especially in later stages, so working on the floor makes sense.

The edge work is the stage for which you most need room. If you have a sewing room that is as wide as the foot of the sail, you can fold the sail in the conventional way and do a neat job as you gradually unfold the sail. You could even fold the top of the sail neatly and just work on a fairly long middle section. But my room didn't permit this and — hard as I tried to manage the material neatly — it often ended up in an amazing wuzzle. It wasn't pretty, but the job got done.

this is routine. The big and unforeseen problem is chafe. On a reach or a run, the mainsail rests on and chafes against the lower shroud and, higher up, the upper shrouds.

Some people put anti-chafe gear of some kind on the shrouds and some put chafe patches on the sail. Either approach will work. But add a batten to the equation and the chafing is accelerated dramatically, since the batten acts as a backing plate to push the sail material against the shroud. The fabric can rub through in a few days and chafe patches made of sailcloth do the same. I have tried a few other materials for patches without great success.

A satisfying conclusion

The bottom line is that I'd give the sails I made an "A" for function and a "B" or "B-" for finish and appearance. I never was able to sew absolutely straight lines or get completely even stitching everywhere, both of which are hallmarks of commercial sails. For that level of quality, I think you need a bigger machine, a loft floor, and a lot of hours behind the needle.

I could have improved the aesthetic results to some extent by a greater sacrifice of speed for precision — the basic trade-off in any craftsmanship. My hand sewing always looks a bit improvised to me although, like my machine sewing, it does the job.

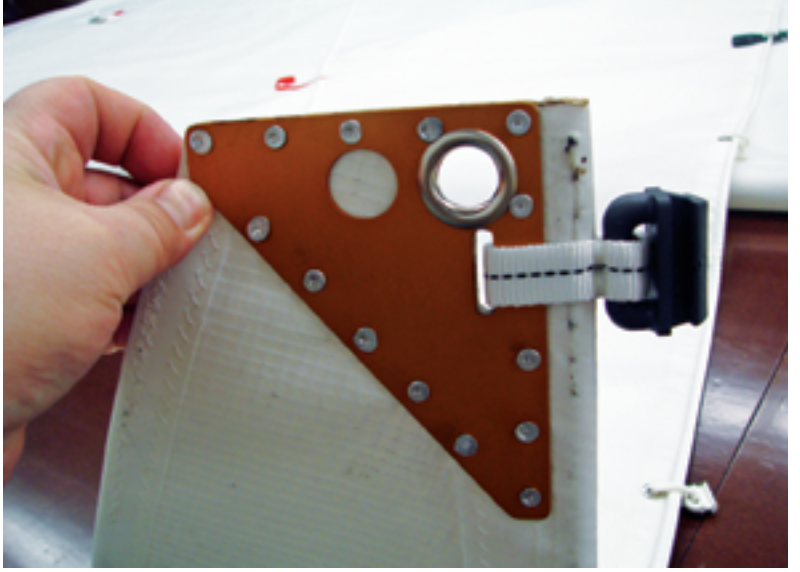
During the construction phase, I worried a lot about crinkling and crumpling the sail. I wanted the sails to go on the spars looking brand-new. In retrospect, I don't think I needed to worry so much about this issue. Once the sails are on the spars, these little surface issues are nearly impossible to see and I doubt they affect strength, durability, or function.

On the plus side, the sail shape came out exactly as specified. There is no visible seam puckering in any of the sails I made, and I can't see any hard spots, although I don't have an expert's eye. I had no major sail failures in the first 10,000 miles of voyaging. I am a lot more confident and better equipped for sail repairs and the cash outlay was within my means. The big sails (more than 300 square feet) each took 80 to 100 hours to build.

For me, it was well worth it. I would say the sail-building project was one of the two or three most satisfying aspects of my cruise preparation, due to the work itself and to the skills I developed. Sailmaking, by the way, is slightly strenuous work, especially with larger sails. It's a great way to build flexibility for the coming sailing season.

If you might be thinking about building a sail or two for your own boat, start fairly small: replace your smallest sail or make a riding sail if you don't have one. To begin with, you might want to use a sewing machine you already have. Theresa Fort wrote an article in the January 2003 issue of *Good Old Boat* on modifying a home machine for sailmaking. Spinnaker-type sails made from ripstop nylon are especially quick and easy to make and they require nothing more than a home machine. On the other hand, if you have the cash, I doubt you would regret buying an Ultrafeed. A few canvas projects will pay for it. If you don't use it enough to justify the expense, you can sell it on eBay for just about its price when new. Build the sail and see how you like the process and the result. Like me, you might never look back.

It continues to be a source of satisfaction to see my sails in action doing their job as intended: getting the old girl and me around the world.



Installing the hardware, such as the mainsail headboard and slide shown here, involves a great deal of handwork. Nearly all of this work can be done with inexpensive tools, sail twine and webbing, and soft aluminum rivets.

When assembled with care, the finished sail will rival that of any loft. Four-sided sails, like this one for a Nutshell dinghy, are also cut by computer. Details like reef point locations are marked on the sail panels to ensure proper placement.

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Resources

Sailrite
<http://www.sailrite.com>

The versatile

A light-air sail simplifies

Code Zero — the term sounds like the title of a spy thriller or a military operation, but it's not. It's the name of a sail designed for use when conditions are just the opposite of thrilling. Since I added the cruising version of this sail to my inventory, short-handed sailing has become easier and less nail-biting. It allows us to sail in all apparent winds from 5 to 35 knots with just three sails.

The Code-0 is a free-flying sail that sets on its own luff rope. Developed as a light-wind racing sail for reaching and close-reaching, it's designed to sail at 45 degrees to the apparent wind in 3 to 6 knots of true wind and at up to 100 degrees apparent in 9 to 11 knots true wind speed. (***Note:*** *the first Code-0 was a "stealth" sail, built for a boat in the Volvo Ocean Race, that measured as a masthead spinnaker but was used as a jib for sailing upwind in very light air.* ***–Eds.***)

One, two, three, up! Setting the Code-0 in no breeze is a breeze, left to right above. That's what this graying sailor bought it for, as a quieter and less fragrant alternative to turning on the engine in light air. It's well behaved and stows in and sets from its own very portable bag, right.

My sail is the cruising version of the Code-0 made by North Sails, which calls it the G-0. Similar sails are available from Hood Sailmakers, Doyle Sails, and many other lofts, some of which have their own names for their versions of what is essentially a de-tuned Code-0. It's about the size of a 160- to 170-percent genoa but it looks and acts like a cross between an asymmetric spinnaker and a genoa, so it's much easier to handle than a cruising spinnaker.

The effective range of the G-0 is similar to that of the Code-0. North Sails claims it can be used in 3 to 4 knots of true wind at 36 degrees of apparent wind. However, North states that most of its customers will find acceptable speeds in 8 knots of true wind speed at 45 degrees apparent wind. Although efficiency will drop off when sailing lower than 90 degrees, North expects that the G-0 will be lugged as low as 115 to 120 degrees.

More fun than the engine

I originally bought our G-0 in 2001 to avoid turning on the engine in light air. At the time, we were sailing out of San Diego and cruising up and down the coast of Southern California. This is generally a light-wind area, and I found I was turning on the engine a lot more than I liked.

We generally sail our Bristol 35.5, a heavy-displacement boat, with a 130-percent roller-furling genoa. When the wind drops below 6 knots

Code Zero

cruising choices

by Carl Hunt

apparent, our boat speed crashes, but I am loath to take off the 130 and put up the 150 so we can sail faster. I admit to some laziness, but bear in mind that I generally sail singlehanded or with my wife. As I approached 60, I liked less and less the idea of hoisting and handing a big sail by myself. Even though the engine wasn't a pleasant alternative, it offered a better option far too often.

I have spent money on boat things before, only to be disappointed. Consequently, I was a little nervous about putting out money for something with which I had no experience. As it turned out, the G-0 has filled the light-air gap and cut down on my engine use.

Better ghosting

For me, the G-0 isn't about sailing at maximum efficiency. Instead, it offers the ability to achieve reasonable speed in light air. The G-0 is a big light-wind sail that's easier to put up and take down than a genoa, making it particularly useful while sailing short-handed. As a result, we make this sort of sail change more often.

With the G-0, we can make more than 3.5 knots in 6 knots of apparent wind at 45 degrees. With 8 knots of apparent wind, we can make 5.5 knots — not too shabby for a heavy cruising boat. If the wind speed increases above 8 knots at 45 degrees, our boat speed begins to slow. When that happens, I need to fall off a few degrees or replace the G-0 with the furling headsail. We also tend not to do well trying to sail above 45 degrees with the G-0 in any wind speed. That restriction probably has as much to do with the configuration of our boat as it does the sail.

I also use the G-0 as a downwind sail when sailing short-handed and use it to sail much lower than North Sails anticipated. It may not be as powerful as an asymmetric cruising spinnaker but it's a lot easier to use. I sail as low as 150 degrees with the G-0, even though it's not designed for this. (Below 150 degrees, it tends to be blanketed by the main and collapse.) I don't view this as a disadvantage. Fin-keel boats tend to be slower when sailing lower. The Bristol 35.5 has a modified fin keel with a big skeg, and we've found that in winds below 12 to 15 knots apparent, we can make better time toward our destination by sailing at 150 degrees

The heft of the tack eye and the reinforcing webbing emphasize the power that this light sail can generate: enough to drive a Bristol 35.5 at 6.5 knots.

“ . . . in less than 10 minutes from the time I take the G-0 from its locker, it’s drawing wind. ”

or higher and jibing. Full-keel boats probably will want to sail lower and to do so will need to pole the G-0 out.

Easy to control

When singlehanding or when sailing with my wife, I tend to drop the G-0 when the apparent wind exceeds 12 to 15 knots. The boat moves briskly at these wind speeds, 6.5 knots or better. It’s still easy to control with the G-0, but this is a large sail and, in this range, even small increases in wind strength can have a large effect. To avoid a fire drill, I prefer to drop the G-0 and use the roller-furling genoa, even though we may lose a quarter to a half knot or more.

The G-0 expands the wind range of our working sails because we’re able to use a smaller jib. We use the G-0 in lighter winds, where it gives us a more powerful sail than a 150 genoa, and it’s much easier to set the G-0 than it is to drop the 130 roller-furling genoa and replace it with the 150.

Although North Sails designed the sail to be set outside the foretriangle, like a cruising spinnaker, I set the G-0 inside the foretriangle, which makes it as easy to tack and jibe as a 150 genoa. It’s also a little easier to raise and lower when it’s set inside the foretriangle — in less than 10 minutes from the time I take the G-0 from its locker, it’s drawing wind.

You trim the G-0 the same way you trim a spinnaker, by watching the luff curl. When close reaching, I pull the luff as tight as possible so it has minimal curvature. When running, I ease off on the halyard to give the luff more curve. I tack the sail as I would any genny. When I must jibe, I first pull the lazy sheet tight. This allows the G-0 to be self-jibing. The sail will go through the foretriangle by itself without danger of wrapping around the headstay. Meanwhile, I can attend to jibing the main. Then, at my leisure, I can trim the G-0.

If I were to make this purchase again, I would make one change to our G-0. We bought the sail with a sock. It’s easy to use, but most cruising versions of the Code-0 are now sold with a furler. I haven’t used one rigged in this way but it seems to me that it would make using the sail even easier.

Proven on passage

My crew and I used the G-0 to good advantage on passage from San Diego, California, to La Paz, Mexico. We were three old men in a boat. The youngest was 62, the oldest 67. Because we didn’t have the energy and strength of youth, we preferred ease of use and lots of rest. The G-0 helped provide both.

During the first half of the trip, between San Diego and Bahia Tortuga, we encountered mostly light winds, but periodically they were punctuated with a Force 5 or Force 6. The G-0 made it easy to change down to a smaller sail when the wind increased and to put up more sail again when the wind decreased.

From Bahia Tortuga to La Paz, we primarily encountered heavy winds. We averaged between 6.5 and 7 knots over the ground and at one point we almost reached 9 knots. Through this part of the trip, the apparent winds typically ranged from 20 to 35 knots. This is when having the smaller jib on the furler paid off, because we didn’t have to change down from the 150 genoa, although on a few occasions I considered putting up the storm jib.

The most difficult leg of the cruise was between Cabo San Lucas and La Paz. Less than two hours after leaving Cabo, we encountered what in the Sea of Cortez is called a “screaming norther.” We had winds from 20 to 35 knots on our nose all the way from Cabo to the Bay of La Paz. Most boats

When set, Carl’s G-0 makes a colorful addition to the sail plan at the same time as it adds zest to the sailing.

making the same passage stopped at an anchorage called Punta Frailes. Eighteen boats anchored there for almost a week waiting for the norther to blow itself out. My crew, however, wanted to keep going, so we did.

Under fully reefed main and genoa, we slogged on. We could have raised a 90-percent jib, as a purist would have done. This would have been more efficient but instead, to keep from beating up ourselves and the boat, we sailed between 50 and 60 degrees off the wind. As a result, the reefed genoa worked well. We tended to make about 6.5 knots over the ground, although at times we were only making 3.5 knots toward our destination. A couple of times, we even slowed the boat down because we were taking too much water over the dodger.

The point of this story is that having the G-0 as our light-air sail allowed us to carry a sufficiently small genoa that we didn't need to change to a smaller headsail. Admittedly, we couldn't sail as high or as efficiently with the reefed genoa as with the 90-percent jib, but we wouldn't have wanted to sail higher. Since most cruisers will bear off when sailing to weather in high winds, maximum efficiency is not an issue. Comfort and reducing the stress on crew and boat become more important considerations. If the going becomes too difficult, most cruisers will find shelter or heave-to.

"…having the G-0 … allowed us to carry a sufficiently small genoa that we didn't need to change to a smaller headsail."

The G-0 is not for every boat. Only in limited circumstances will it drive a boat to its maximum potential. However, it can make life a lot easier for the short-handed sailor who wants to avoid turning the engine on in light air. At the same time, it can allow a smaller jib to be carried on the roller furler and thus extend the upper range of the working sails. For the short-handed (and older) sailor, these seem to be virtues.

Carl Hunt is a semi-retired economist living in Colorado. He has been sailing for 27 years, cruising his own boats from British Columbia to Mexico. He has also chartered and cruised on other people's boats on the East Coast, Great Lakes, Caribbean, Mediterranean, and other parts of the world.

When *Sea Trek*'s decks came due for a retread, her owners chose Ultra Tuff, above. A big part of the job was prep, and all hands were involved: those of Chuck Baier, bottom, and Susan Landry, below right.

Fresh traction on an old deck

New non-skid restores good looks and safe footing

by Chuck Baier

Anyone who owns an older boat, or is considering the purchase of one that's in need of some renovations, has wrestled with the problem of worn or faded non-skid surfaces on the decks. The options for repair include artificial materials glued to the deck, paints, and coatings.

Our Mariner 40 ketch, *Sea Trek*, recently passed the 30th anniversary of the laying of her keel. We had lived aboard and cruised her extensively since we purchased her more than 17 years ago and the repairs and renovations were ongoing from the beginning. While she had not been abused, simple cosmetic repairs — like redoing the teak trim — were time-consuming.

Our plans were twofold: bring her back to like-new condition, and make her as safe and comfortable as possible for offshore and coastal cruising. One of our goals was to do the repairs or renovations ourselves. That way, we would save money and improve our skills and knowledge at the same time. We would also know the work was done to our expectations.

After a few short cruises on Chesapeake Bay, we came to the conclusion

that *Sea Trek*'s non-skid was non-skid no longer. The finish was badly faded and worn. We began to explore how we might rectify this in an affordable way.

We first tried the easiest and most obvious solution; we decided to paint the non-skid surface in a color similar to the original and keep the surface texture. We chose Awlgrip paint for its toughness and ease of application, adding a flattening agent to remove the high gloss and make it less slippery. This looked great, but the reality was that when we were under way and the deck was wet with rain or breaking seas, we still had to crawl when going forward because we had such a hard time keeping our footing. It was time for plan B. There is always a plan B.

A lucky find online

More research turned up several expensive and labor-intensive options. Going this route would delay our cruising plans, and we'd need a fair amount of free time to complete the project. Almost by accident, we came across a post on a cruisers' website about a product called Tuff Coat, sold by Ultra Tuff Marine, that could be painted on the deck, came in different colors, and was touted as a true non-skid that would not break the bank. The manufacturer claims the product is used in industrial applications and by military and commercial shipping. More web research brought very positive feedback. Best yet, it fit into our budget.

For the square footage we needed to cover, we calculated we'd need three

After removing from the deck whatever fittings they reasonably could, Chuck and Susan taped around what remained, above, then added masking paper as further protection, right.

gallons of Tuff Coat. We decided to order four. An epoxy primer recommended by the manufacturer was also needed, so we ordered a gallon, plus the special rollers for applying it.

Prep is everything

The process was a bit more time-consuming than we had anticipated. As with any project of this type, the preparations are important and take up the most time. The first step was to remove hardware from the areas to be painted. Some items, such as handrails, we chose to leave in place because their removal would mean taking down interior headliners and panels.

Once we'd removed the deck hardware, the next requirement was to thoroughly sand the surface to be covered with 40- to 60-grit sandpaper. Needless to say, this did a number on our painted surface and almost completely smoothed out the texture on the non-skid areas. We had to be very careful not to sand into the adjoining painted surfaces. Did I mention that we had Awlgripped the entire boat from the waterline to the masthead?

After we'd completed the sanding, we cleaned all surfaces with soap and water, then taped securely around the painted areas and whatever fittings were left behind. Making rounded corners and odd shapes required some effort. Following that, we added a strip of 9-inch masking paper to the taped strips to protect surrounding areas from splatter. Getting all of this ready took much longer than actually painting on the coating.

Once all of the taping was finished, we laid on the first coat of primer. This was delivered in two parts that must be mixed in the correct proportions. The primer must be used as soon as it

Ultra Tuff non-skid coating contains suspended particles of rubber. To keep them properly mixed, Chuck stirred the product regularly with an electric drill accessory.

No special equipment is needed for the application, just a textured paint-roller cover and a small brush for areas the roller can't reach.

is mixed; it cannot be kept very long, even in a closed container. We were able to mix enough to cover all of the decks on the first pass. The primer has a consistency a little thicker than milk, and only a light coat was needed. We applied it easily using a small paint tray and a 4-inch foam brush. The primer needs a 24-hour drying period, but there is no need to sand the primed surface prior to applying the top coat.

Uniform texture

The final finish is applied in two coats using a special foam roller that gives the surface a uniform textured look. In areas the roller can't reach, the coating can be dabbed on with an ordinary brush. The

Chuck applies the first of the needed two coats of non-skid with a roller.

In areas the roller can't reach, the product can be dabbed on with a brush, above left. The first coat is applied in areas about a yard square to ensure it goes on evenly, above right.

coating contains suspended particles and requires thorough mixing throughout the process. We used an electric drill with a mixer attachment to get a good mix in the can. We laid the first coat down in strips of about 3 feet rolled on alongside each other but not overlapping.

Complete coverage is not important at this point; keeping the roller moving in the same direction is. Once an area of about 9 square feet has been covered, it's important to roll the coating at a 90-degree angle to the first application and to work this in until uniform coverage is achieved. Total cover is still not important yet, but a uniform texture is. We got the technique down in a short time. We continued with this process until we'd covered all the non-skid areas.

Once the first coat is dry to the touch, it's time to apply the second coat. It's important that this be done quickly and that the previously applied coating not be left until the next day.

By the time we were finished with the first coat, it was dry enough we could turn around and begin the second. The process for this coat is the same as the first, except now it *is* important to get complete coverage. It took us a total of three hours to cover *Sea Trek*'s decks with two coats.

As soon as we'd completed the second coat, we removed the paper and tape. Leaving the tape in place too long can make it possible for the tape to pull the coating off at the edges when it's removed. We had to be a bit acrobatic for this part of the project because we were trying not to walk on or lean into any coated areas.

Time to cure

Once all of the tape and paper was removed, we had to stay off the decks for several hours. After that, we could walk carefully on the surface in socks or on bare feet. Ideally, we wanted to stay off for 48 hours to give the entire surface plenty of time to cure.

The final step was to re-install and re-bed the hardware that we had removed. Any time we remove and re-install hardware on the decks, we soak the fastener holes with thinned epoxy to completely seal the deck core so it can't leak or absorb water if the bedding fails.

One of the big challenges in this project is protecting the decks from water for 48 hours. Besides planning carefully around the weather, you have to persuade your dock neighbor to not hose his own deck and create accidental overspray. One of our concerns was the possibility of dew forming on the surface. We waited until there was no rain in the forecast and the relative humidity was projected to be low. This can be difficult with a boat sitting in the water. Perhaps the best approach would be to do this project on the hard or in a shed with a controlled environment. As it turned out, we had no problems.

The finished result looked fantastic — better than we expected. By taking our time during the preparation and application process, we were able to get a good-looking uniform texture that rivaled or bettered many factory finishes. Now, the entire surface is indeed a true non-skid that does not seem to be affected either by water or by the kind of footwear worn or lack thereof. It appears to be rugged and has held up to anchoring, piling chain up on the foredeck, and whatever else we have done in the normal process of sailing our boat.

The time we invested from start to completion was about three days. How long the finish will hold up and how long it will continue to look great only time will tell. For now, we are very optimistic and would recommend this option to any boaters contemplating a non-skid project of their own.

Chuck Baier is a licensed USCG Captain and marine service technician. He and his wife, Susan Landry, lived aboard and extensively cruised Sea Trek *for 17 years. They recently sold* Sea Trek *and are now working hard on* Beach House, *a Marine Trader 34.*

Resources

Ultra Tuff Marine
<http://www.ultratuff.net>

New life for old rope?

To wash, or not to wash? Aye, there's the rub

by Tim Nye

Curiosity about laundering's effects on halyards led to a pile of broken rope, left, and a heap of data. The starting point was new rope, old rope, and a hot knife, below.

A while ago, I took a Saturday-morning rope-splicing class at a chandlery. As we were working away, someone asked about splicing old rope. The instructor said old rope has been stretched and is usually too hard to work with. I spoke up, saying that we've had good success washing rope in our home washing machine and, with a little fabric softener, the rope usually comes out almost as soft as new. Let me say this grabbed our instructor's attention.

According to him, washing rope is the *worst* thing you can do to it. Fabric softener is a chemical that breaks down the tiny fibers inside the rope, causing it to lose strength without warning, he said. The agitation of the washing machine causes the inner braid to break through the outer braid of the rope. In fact, he said, he sells a lot of double-braided docklines. People often bring them back with the rope's core poking through and ask for a refund. When he sees this, he asks them if they washed the line in a washing machine . . . and they always have. Eventually, he calmed down and we went back to our splices.

This information surprised me. I've washed bushels of old rope and never had a problem like that. Being the curious sort, I started to wonder just what *does* happen when you wash rope.

The reasons to wash rope are to clean it and possibly to make it softer and more pliable. In some fields, such as mountain climbing and emergency services, washing rope is standard operating procedure. In those applications, however, ropes are dragged through mud and sand that penetrate the rope and act as abrasives, slowly grinding away at the rope's fibers. In that case, washing, even if it might damage the rope, is far better than leaving the grit in it.

Sailing lines aren't normally dragged through mud. Seawater can leave salt crystals behind as it dries, but fresh-water rinses will dissolve this without the need for washing the rope. So, if by washing it we end up with cleaner and softer rope, are we paying dearly for it in terms of reduced strength?

As it turns out, the three tools necessary to answer this question were at hand. First, my latest good old boat, a 1973 Grampian 34 project boat, still had its original running rigging. The ½-inch polyester double-braided main halyard, which had reached the ripe old age of 34, could be sacrificed to the cause. Second, after an intensive training program, my dear wife certified me as competent to operate the Domestic Laundry Apparatus (aka, "the washer"). Finally, I teach mechanical engineering and have access to testing machines that can very carefully break things with quite substantial forces.

Testing to destruction

I wondered how we can tell if washing damages a rope and decided that one way would be to measure its tensile strength. The more damage, the weaker the rope becomes.

My old halyard was wire-and-rope. The rope portion thus likely didn't see great loads during its life. As far as I can tell, my boat spent her life on Chesapeake Bay. She was left rigged year-round, and this halyard was run outside of the mast. The rope was badly weathered and dirty. Cutting it open showed that it had started life as a white rope with blue flecks. In addition to being sun bleached, it was stiff and hard on the hands. I used an electric soldering gun, with the tip hammered flat, as a hot knife to cut the test samples.

The old halyard could help me answer the question regarding how washing affects the strength of old rope, but I also

wondered what happens to new rope? To answer this question, I purchased a hank of new ½-inch Bridgeline Ropes polyester double-braid so I could put it through the same tests as the old rope.

I cut both ropes into pieces about 3 feet long. I used the soldering-gun hot knife to cut and seal the ends of the ropes and to keep the inner and outer braids from sliding past each other. The table below gives the list of test cases.

I cut five pieces for each case on the old halyard, alternating along the rope. That is, starting at one end, I cut pieces for cases A-B-C-A-B-C . . . I also used the hot knife to score Roman numerals on the pieces to indicate their original locations on the halyard. Since the new rope should be very uniform, I cut only three pieces for each test case: D, E, and F. I didn't number these.

Test cases for rope

Case	Rope	Treatment
A	old	no washing
B	old	1 wash
C	old	10 washes
D	new	no washing
E	new	1 wash
F	new	10 washes

The test cases would be: no washing, to get a baseline on rope strength; 1 wash, to see if washing decreases the strength of a rope; and 10 washes, which is probably more than any rope could reasonably expect to see in its life.

I did the washing in our home machine using the smallest load setting (since this was a very small load) and an amount of Tide liquid detergent roughly in proportion to the small load. Since a fair amount of soap was left in the rope at the end of a wash cycle, I added a second rinse at the end of each load. I added Ultra Snuggle liquid fabric softener to the washer's fabric-softener dispenser in a quantity appropriate for the small load. As things sometimes turn out, the actual testing occurred six months after the washing, so if there are long-term effects of detergent and softening chemicals, they probably would be seen in these tests.

The first thing I learned is that the core really does pop through the cover when you wash new rope. This happened to two of three pieces after one wash. Old rope, however, doesn't experience this. So my splicing instructor and I are both right: washing does or doesn't cause the core to pop on rope, depending whether it's new or used.

I figured I'd inadvertently discovered a rope-manufacturing secret. Each braid is a hollow tube. When double-braided rope is made, first an inner braid is woven. This is followed by the outer braid woven over the top. The machine that does this apparently puts more tension on the outer braid as the second weaving takes place. The inner braid is being compressed along its length while the outer is being stretched. I expect this is done so that, once the rope is loaded and the spaces between the strands are worked out, the inner and outer braids end up at the same length so each will carry half the load on the rope. This tightening-up of the rope, no doubt, is what makes it hard to splice used rope.

Until a rope undergoes that tightening-up process under use, however, the inner braid is longer than the outer braid. The agitation in the washer allows gaps to open in the outer braid, and out pops the inner braid.

Fortunately, this is not fatal for the rope. If you see this happen, grab the rope from one end with one hand, squeeze the rope with your other hand, and slide that second hand toward the pop. This stretches the outer braid, "milking it" and causing the inner braid to be pulled back into the rope. You'll have to repeat from the other end and keep milking until the rope is back together. I know this because that is what I did to all the popped samples before testing them. I marked the locations of the pops on those ropes.

The old rope obviously got cleaner with washing, but it also became very fuzzy as washing continued through multiple cycles. Even the new rope fuzzed up when washed, although not nearly as badly. Given how much UV damage must have occurred in 34 years of continuous exposure, it's not too surprising that so many of the little polyester fibers broke to create this fuzz.

An early observation is that the old rope became considerably softer to the touch after one wash, and a little softer yet after 10 washes. In a "droop test" for stiffness, I set an equal length of each sample over the edge of a table. With a sheet of cardboard, I lifted the ends of the ropes level with the tabletop, then slid the cardboard away, allowing the ends to droop (see photo on facing page). The unwashed rope drooped the least. The once-washed rope was less stiff and drooped a little more, while the rope washed 10 times drooped considerably more, showing that more washes did make the rope less stiff.

Pulling strings

So on to the fun part: breaking things. For this, I used a laboratory tensile-test machine that can push or pull up to 30,000 pounds under very fine control.

Measuring the strength of a rope turns out to be something of a challenge. If the rope is bent sharply, as it is in a knot, its strength is considerably reduced by the sharp bend. Clamping a rope in metal grips also greatly reduces its strength where it is crushed. Ideally, the rope should be wrapped

The rope samples line up ready to be tested, left. From the bottom: A, B, C, D, E, F, per the table above. In some cases, washing caused the core of new rope to "pop" through the cover, center. Washing makes polyester rope fuzzy, right.

Washing old rope softens it, at left above. From the rear, the unwashed sample is the stiffest, followed by once washed and 10-times washed. Each rope sample was subjected to the 30,000-pound test machine, center, secured between two capstan grips, at right.

several turns around a large drum to gradually load the rope by the surface friction between the rope and drum, just as is done with a sheet on a winch. Unfortunately, it takes quite a bit of rope to make up a single test sample this way.

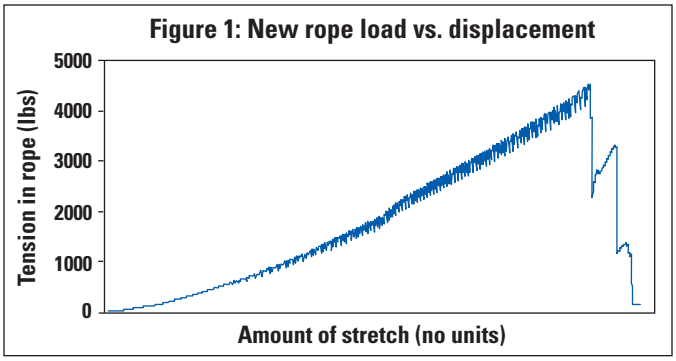
For this experiment, I used a pair of "capstan grips" (see photo at right). In these, the rope is wrapped around a 1½-inch diameter cylinder before being led through a hole in the grip and knotted. The cylinder allows the load on the rope to be gradually applied by the friction along the surface, rather than being applied abruptly. In this arrangement, about two-thirds of the load was applied to the rope by the cylinder, and the remaining third was carried by the knot at the end.

Ideally, the cylinder would have been considerably larger in diameter to reduce the stress concentration caused by bending the rope. This was a trade-off against how much rope was available for tests: a bigger diameter means each sample must be longer. This means I could have conducted fewer tests given the available rope. As a result, the ropes broke at somewhat less than their true tensile strength but, since all samples were tested in the same grips, we can see the relative differences in strength between ropes.

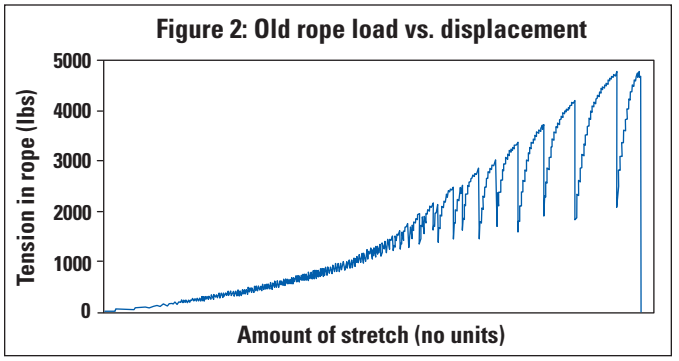
Figures 1 and 2, below, show the load vs. displacement recorded by the test machine for new and old ropes. On this machine, we controlled the displacement (how much the rope is stretched) and measured how much load the rope applied to the machine. When the grips begin to separate, they first pull slack out of the rope and it takes a while for the load to build up. As the new rope is pulled more and more (Figure 1), it stretches considerably (see photo sequence on page 30) and goes through an interesting process: it creeps a little around the cylinder on one grip, then a little around the other cylinder, giving out a little "snap" noise each time. This constant creeping is why the load plot seems to be vibrating up and down.

The old rope, on the other hand, didn't slide nearly as well over the cylinders. In this case, tension would build up until it finally overcame friction, resulting in a loud "Snap!" Each time the rope slid like this, the force (Figure 2) dropped quite a bit but quickly built back up.

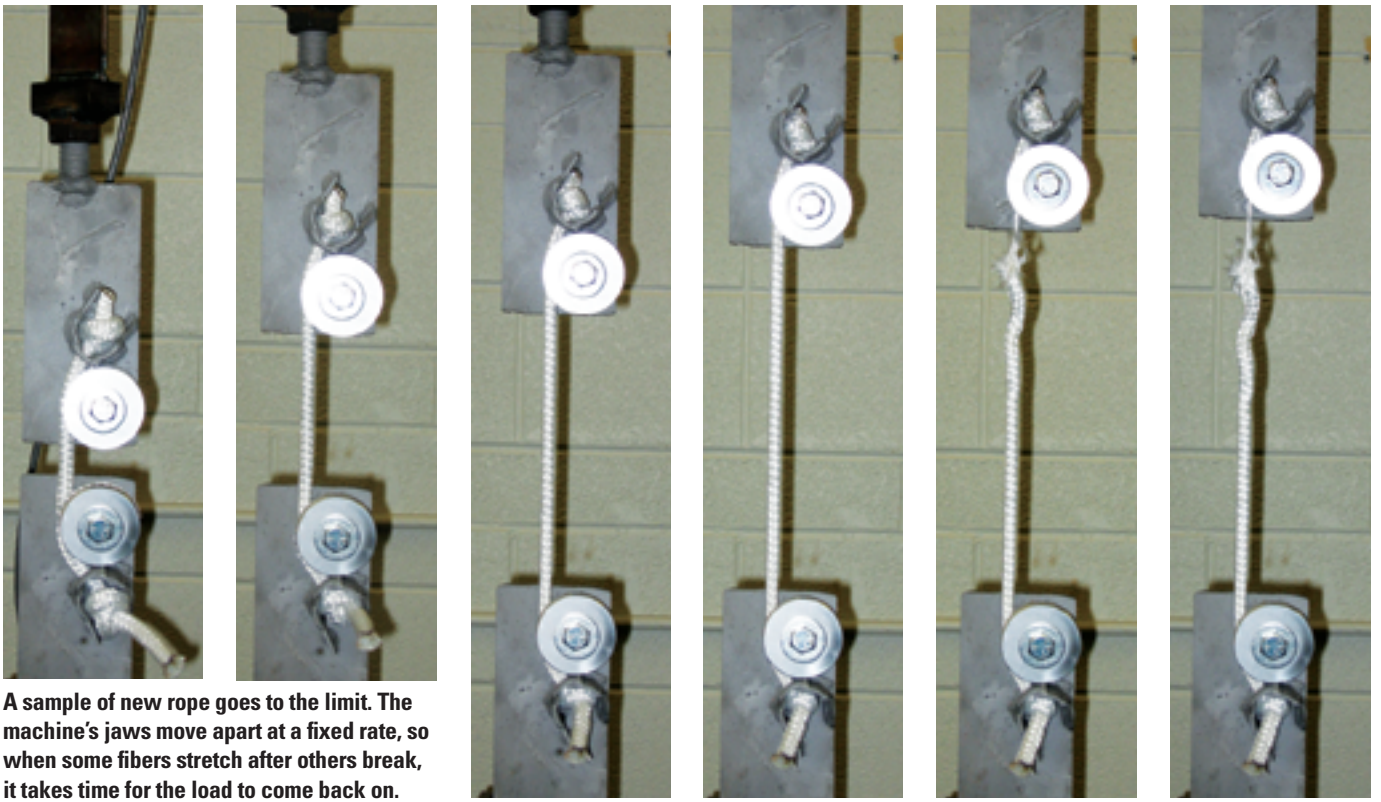
Eventually, each rope arrived at its breaking point. Here again, there was a major difference between the old and the new. The new rope went through a breaking process in which groups of strands reached their limit and broke with a "crack" noise similar to what you hear when breaking a stick. Usually there were several of these minor breaks



Load vs. displacement of a new rope sample in the test machine. Note the stepped failure at the right of the plot.



Load vs. displacement of an old rope sample in the test machine. Note the sudden failure at the right of the plot.



A sample of new rope goes to the limit. The machine's jaws move apart at a fixed rate, so when some fibers stretch after others break, it takes time for the load to come back on.

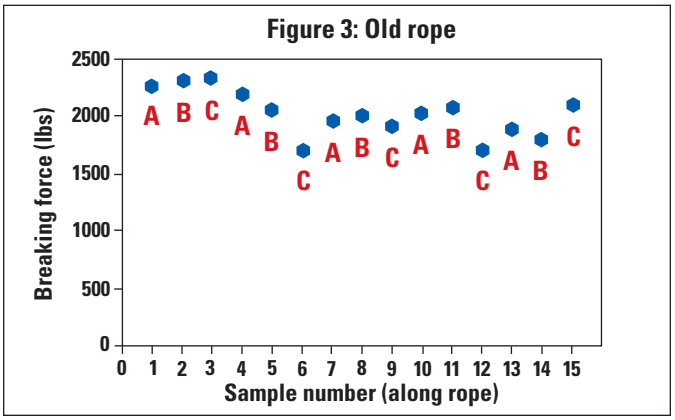
before the rope gave out, each one causing the load supported by the rope to drop and leading to the downward steps at the end of the plot. This machine pulled the rope at a rate of about 1 inch per minute, and it took up to 30 seconds for a new rope to go though the breaking process from first "crack" to complete failure. When this rope finally did break, the load was fairly low and there wasn't much drama. (This isn't usually the case in a rope break, however. See the Whiplash sidebar, page 32).

In contrast, the old rope, once the breaking load was reached, gave up suddenly. Each ended very quickly with a "tink-tink-BANG!" Fortunately, the ends of the ropes were still held by the grips, so they didn't go very far, although each failure gave the test machine quite a shake.

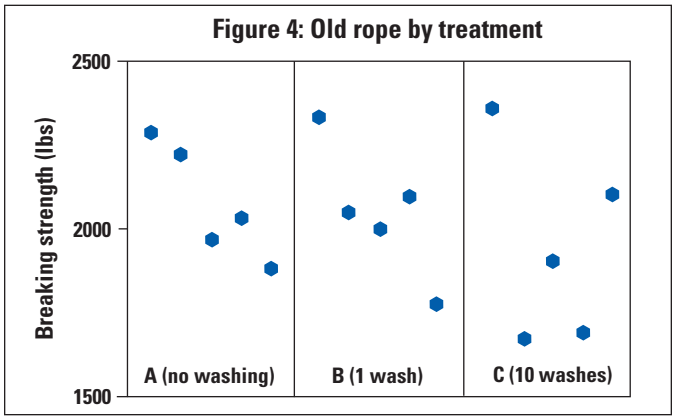
In all cases, the ropes broke as they were coming off the cylinder in either the top or bottom grip. Because the diameter was smaller than ideal, this point would be a stress concentration in the rope, so it was the point that reached its breaking point first. The new rope samples that had experienced the core popout during washing had these locations on the ropes marked. Two of the samples had the pop locations between the grips during testing but neither was a point of failure.

Results

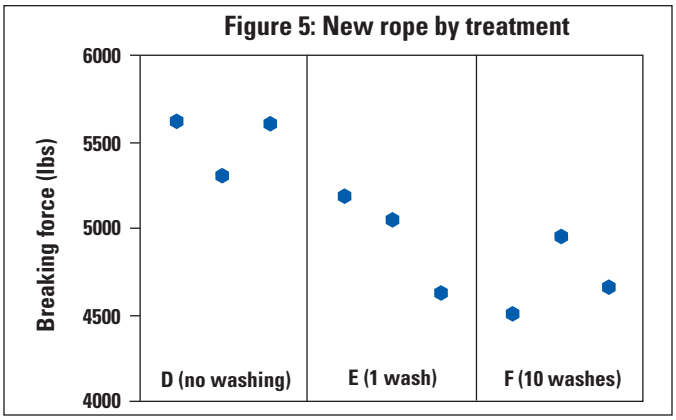
Figure 3, at left below, gives the breaking strength of each old rope sample along the original halyard (sample #1 was the bitter end). The letters "A," "B," and "C" below each point indicate the test case of that sample. The bitter end of the halyard seems to have been stronger, but no other pattern is obvious. This strength difference could have been due to having been exposed to less weathering or less loading during its



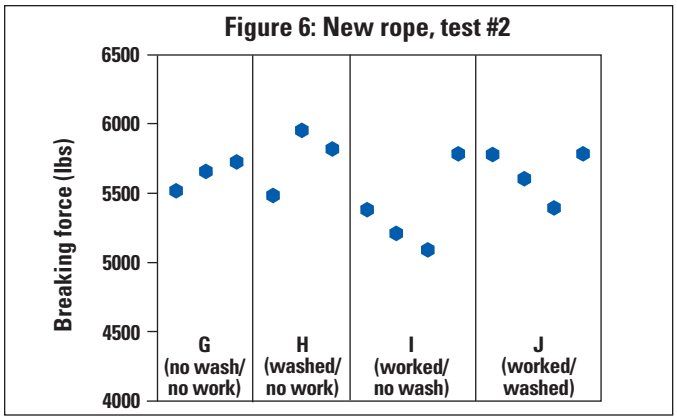
Strength of old rope samples according to their position in the halyard, "1" being the bitter end.



Strength of old rope samples by amount of washing. These results suggest that washing had little effect on the strength of the old rope.



Strength of new rope samples by amount of washing.



Effects on strength of washing (no detergent) and working.

life. The results are sorted by test case in Figure 4. While the 10-washes case has the two lowest points, it also has the highest. The bottom line: it doesn't appear as if washing the old rope has made any difference to its strength.

The results for new rope (Figure 5) show two things. First, notice that the breaking strengths are far higher (5,000 vs. 2,000 pounds) than those of the old rope. Granted, there may have been chemistry and manufacturing improvements in ropemaking in the last 30 years, but there is no doubt that the old rope has lost a considerable portion of its original strength.

Second, it certainly does appear that washing has reduced the strength of the new rope. The strength values after the first wash have dropped by about 10 percent, with perhaps a few more percent lost by the 10th washing.

This is puzzling. While washing had no effect on old rope, it reduced the strength of new rope.

Further research

This presented an opportunity for a follow-up test. Washing does three things: it wets the rope, it adds chemicals (detergent and softener), and it agitates the rope. It would seem safe to assume that getting polyester sailboat rope wet shouldn't cause it to deteriorate. So did chemicals or agitation cause the rope to lose strength?

The idea that mechanical agitation might affect the rope ties in with the fact that most riggers won't splice "old" rope, where they define "old" as having been used once. Working a rope (putting it under tension and bending it around sheaves in blocks and so forth) causes the fibers to tighten up, making the rope hard to splice. The agitation in a washer might also cause the fibers to move around, possibly leading to a change in strength.

To investigate these ideas, I performed a new test. I used only new rope since I had already used up the old halyard. To see if the agitation in washing had an effect on strength, I compared washed rope against unwashed rope. This time, the washed rope was rinsed twice to remove residual soap and softener before starting and some rope samples were washed in plain water with no added detergent or fabric softener.

I also incorporated "worked" rope in this test. The worked samples were run 10 passes while being turned through 180 degrees over a 2½-inch diameter sheave under a tension of 500 pounds. This represents a working load of about 1/12 the strength of the rope, probably a reasonable maximum load value for non-racing sailors. I also tested these worked samples in the washed and non-washed states. The complete set of test cases is given in the table below.

Cases for second test of rope

Case	Washed	Worked
G	no	no
H	yes	no
I	no	yes
J	yes	yes

Figure 6 is a plot of the results. Comparing the first two cases, non-worked rope that was not washed (case G) to rope that was washed (case H), shows the strength is about the same. Two of the three washed samples had strengths higher than the three unwashed samples, but then one of the three had a lower strength than all the unwashed samples. Comparing these results to cases D and E in Figure 5, where washing did drop the strength, suggests that the detergent and/or fabric softener did cause the rope's strength to decrease.

Comparing cases G and I — the unworked rope to the worked rope — shows there probably was a drop in strength of about 5 percent on average. Comparing the worked rope before and after washing (cases I and J), however, shows that the strength went back up to that of the original rope. So here, washing (without detergent) caused the rope's strength to increase!

And in cases A, B, and C (old rope) we saw that washing had no effect at all

Laundering tips

Throw a basketful of rope into the washing machine, turn it on and, when it's done, you'll have a great big ball of completely entangled rope. (Don't ask me how I know.) One way to avoid this is to tidy up each rope with the chain sennit knot (daisy chain and chain stitch are other common names). While you can make tight loops, there's no benefit, and smaller loops means you need to make a lot more of them. Once washing is done and the rope dried, the end knot can be removed and one tug will cause the sennit loops to fall right out.

Shackles and other potentially damaging hardware should be wrapped up in rags that can be tied off with nylon wire ties. The rags will protect the inside of the washtub. This step may be very important for domestic harmony.

on strength. If detergent and softener were chemically damaging the rope fibers, the fibers in the old rope should be damaged, just like in new rope. Since the old rope didn't lose strength, detergent and/or softener must not be damaging to rope.

So what gives? Let me offer a couple of theories. First, working the rope samples for cases I and J was done by running the rope under tension around a sheave 10 times. Each pass caused the rope to bend, then straighten. It's likely this bending caused the strands in the rope to redistribute themselves so they were tighter on one side of the rope and looser on the other. Putting such a rope into a tension test led to the tighter strands reaching their breaking point earlier, so the strength of the whole rope dropped a little. A trip through the washing machine would have let the strands slide back to their original positions, so the tighter ones could loosen and vice-versa. The strands in this washed rope would then be loaded more evenly in the tensile test and the rope's strength returned to the original value.

A theory that might wash

Second, as for washing new rope with detergent and softener reducing its strength, while washing new rope in plain water or washing old rope with detergent have no effect, let me propose the following theory.

Double-braided rope is made from tiny polyester fibers. When the fibers are manufactured, they are coated with a material called "spin finish" before they are made into yarns that are braided into rope. The purpose of this spin finish is to eliminate static electricity and to reduce the friction of fibers sliding over fibers, and fibers sliding over metal parts on the processing machinery. This is done so subsequent processing (spinning, weaving, and braiding) of the fibers is made much easier.

When we tension our rope, the fibers and strands slide past each other as the rope tightens up. The more easily the fibers can slide past each other, the more equally they will distribute overall load and the greater the total load the rope will carry. On the other hand, if fibers can't easily slide past each other, some will be tighter and some looser as the rope is loaded. In that case, the tighter fibers will tend to break first, reducing the total capacity of the rope.

When a rope is new, it has this spin finish material on the fibers. Washing with detergent probably takes it off. Washing in plain water may not take it off (at least perhaps not with a single wash). No doubt it wears off over time with exposure to the elements, so older ropes won't have any left. *Hence, we see new rope lose some strength when washed with detergent, but not when washed in plain water, and we don't see any change with old rope.*

Whiplash

Something to keep in mind when looking at Figure 1 (see page 29) is that sailors don't apply stretch to ropes; we apply loads. As the load increases, the rope will stretch more and more. Once we hit that peak in the curve, the rope won't carry any more load. Each fiber that breaks passes its load onto its neighbors, causing some of them to break and shed their load. This causes other fibers to break, and so on. This chain reaction occurs very fast.

What does this mean in practice? As you load and stretch a rope, it behaves like a big rubber band storing energy. When a rope breaks, all that energy is released in an instant. How much energy? If our sample ½-inch rope was acting as a jibsheet with 6 feet of rope under tension, it would release 3,600 foot-pounds of energy. In contrast, a bullet exiting the muzzle of Dirty Harry's .44 Magnum, "the most powerful handgun in the world," has 1,300 foot-pounds of kinetic energy. Granted, the energy in the bullet is a lot more concentrated, but I still wouldn't want to be in the path of a broken sheet. Chafed, elderly, damaged, and undersized lines put you that much closer to what might be a memorable event.

We could test these theories with more experiments, but they sound reasonable (to me, at least) and I'm sure we'd all rather go sailing.

Take-away points

What have we learned? Let me offer the following:

- Washing doesn't seem to make any difference to the strength of old rope.
- New rope did lose some strength after being washed in detergent. This loss, however, is most likely due to the "spin finish" coating being removed from the rope's fibers, rather than from deterioration of the rope itself. Since this "spin finish" will wear away over time anyway, washing won't have any additional effect on strength.
- Washing a dirty rope once will make it considerably softer and less stiff. There was limited improvement with additional washings. So there's no benefit to washing a rope if it's not dirty and stiff.
- If you machine-wash new rope before it has been worked enough to tighten it up, expect the core to pop through the outer braid. If you have dirty "new" rope to clean, try soaking it in a tub and hand-washing to avoid this.
- If the core does pop out, "milk" the rope from the ends to pull it back in. Its strength doesn't seem to be affected.
- Old, weathered rope is probably drastically weaker than new rope. This is something to keep in mind when deciding which rope should be assigned to which job on (or off) the boat.

Tim Nye teaches mechanical engineering and in his spare time drags home and resurrects derelict machinery. After meeting and marrying Elizabeth, a sailor, he now drags home and resurrects good old sailboats. Their current boat is a 1976 Grampian 34, Sea Rose, *mostly complete and sailed out of Hamilton, Ontario.*

A modern classic binnacle

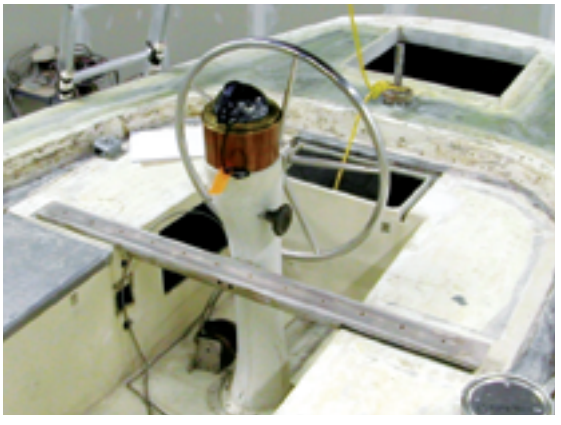
A new old compass goes in the right surroundings

by Stephen Thompson

The compass and binnacle crown the steering pedestal, above, and when moved to the boat, below left, set a standard for the remaining restoration.

When I purchased my good old Hallberg-Rassy Mistral 33, I knew I was in for a lot of work. All the wood above deck needed to be replaced, but luckily many of the components required to restore her classic look were present. However, she came without a compass.

Originally, a solid-brass Sestrel binnacle compass had been mounted on the steering pedestal. It's easy to see why a previous owner kept this as a souvenir. So, for more than a year, I searched unsuccessfully for a Sestrel compass. Eventually, an old Ritchie design with a nice bronze bezel appeared for sale on eBay. It had a crazed globe, no light, and no binnacle mount, but it was the right 5-inch size and had a classic look. I thought it had real potential, so I placed a reasonable bid and (Oh, what joy!) I won it.



When it arrived, I wasn't disappointed. It was a compass of exactly the right quality and type to enhance the classic appearance I was looking for. I contacted Ritchie and was very impressed with the extra effort the company's customer-service department put in to assist me. Based on the serial number on the compass, they informed me that it was part of a D-515 model manufactured in 1968 — just the right age for a boat manufactured in 1970.

Ritchie had changed its design since then but still had spares available. The customer-service representative also calculated the amount of oil I would need to refill the compass and informed me that I should put the oil in the freezer for 4 or 5 hours so all the micro-bubbles would come out of suspension. Micro-bubbles? Aha! Maybe that's why in all my other compass repairs I'd had a bubble appear after a few weeks, although no oil had leaked out. I ordered the required spares from Ritchie, but I wasn't able to get a binnacle from them.

My rebuild of the compass went very well, thanks to that very useful oil-cooling trick. I removed the remaining old black paint from the bezel, exposing all that beautiful bronze. Then I replaced the crazed globe with a new one and assembled the compass with new O-ring seals. After a few attempts at refilling it, I discovered that, when adding the last little bit of oil, you need to slightly depress the bellows. Further, you should continue to depress the bellows as you insert the plug. By doing this, I managed to get that last nasty and persistent little bubble out during the final filling stage. And, yes, the freezer trick really *does* work.

The compass was now reconditioned and looked great, but I still didn't have a binnacle mount. I located a few aftermarket products but they were either stainless steel or ABS plastic, both of which lacked that classic nautical appearance. I came to the conclusion that I would have to build my own out of wood.

A pillar of inspiration

While I was at the lumber yard looking at what was available, I saw some 8-foot pillars intended for use in home decoration. It was the sort of material I needed, but the yard was not going to sell me just 5 or 6 inches. However, on closer

inspection, I noticed that these hollow pillars were constructed from sections of wood formed into a polygon.

Since I had purchased a few router bits from Lee Valley Tools to do this sort of thing for boxes and chests, I thought I should have a go at making the binnacle myself in a similar manner.

I looked around and found some nice solid mahogany blocks of the right color. The sales agent informed me that they were cutoffs and end pieces of Honduras mahogany from the Fender guitar factory in British Columbia. My lucky day! I bought a block and took it home to have fun making sawdust.

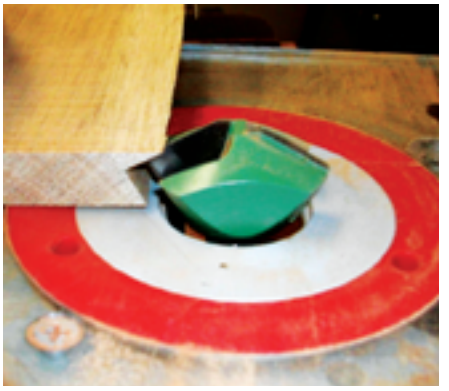
I started by cutting the block into strips on the bandsaw. Then I squared up the edges of the strips and sized them into board sections on the table saw. I used my router with a bird's-mouth cutting bit to create the pieces for a 12-sided polygon (formally called a dodecagon but I prefer "clockagon"). Finally, I cut the boards to a width that would give my finished clockagon a 7-inch diameter across the flats. Rather than making a gluing jig, as suggested by the instructions that came with the router bit, I decided to epoxy the pieces together in small groups where I could control the progressive shape.

The finished binnacle in varnished mahogany sets off the vintage compass perfectly.

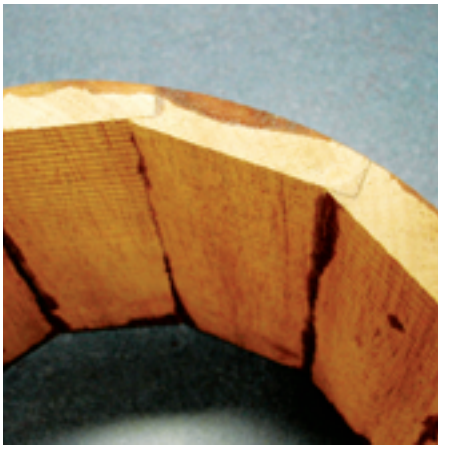
The first night, I glued the sections into pairs. The second night, I glued the pairs into three arcs of four sections. And the final night, I finished the circle by gluing the three remaining arcs together. This worked very well and created a true and even polygon. I then sanded the points down and, using a random-orbit sander, blended them into the flats. Finally, I cut the cylinder to length on the table saw and finished it with two coats of Epifanes Rapidcoat.

The boat still has a year or so to go before I finish my total refit, but she now has a compass with a story and a classic nautical look. Now I have to rebuild the rest of the cockpit around it to the same standard. What was I thinking?

Stephen Thompson, a professional mechanical engineer, sailed on inland lakes as a boy. At 50, he successfully built a small sailboat from scratch and caught the bug once again. He has since undertaken the complete restoration of a 1970 Hallberg-Rassy Mistral 33 in Houston, Texas.



Building the binnacle began with a lucky find: mahogany "findings" from the Fender guitar company. Stephen first cut the block into boards, left. Then, with a bird's-mouth bit in the router, center, he trimmed one side of each board, right.



To achieve perfect symmetry, Stephen assembled the 12 sides of the binnacle in three stages, left. Nothing less would serve for the Ritchie compass he found on eBay and restored, center. He faired the "clockagon" into a circular cylinder using a random-orbit sander, right.

The Ditch Bag 101

The equipment you hope you never have to use

by Don Launer

Among the most important pieces of equipment on board our boats are some we've spent good money for but hope we never have to use. Fire extinguishers are one example and the ditch bag is another.

If your boat is foundering and you're forced to take to the life raft, you'll need to take with you several items to assure your comfort and aid in your rescue. These should be stored in a ditch bag that's easy to find and retrieve in an emergency.

The ditch bag is sometimes referred to as a rapid-ditch bag, a ditch kit, a grab bag, a flee bag, or an abandon-ship bag. What you stow in the ditch bag depends on the kind of sailing you do and where you sail. A ditch bag suitable for bluewater cruising with a large crew in cold climates is very different from one needed when sailing in coastal or intracoastal waters.

> "Think about things you need to keep you warm and dry, protect your skin from exposure to the sun, keep you hydrated and nourished, maintain your health, signal for help, and navigate toward land."

The container

No matter what its contents, the ditch bag should be able to float when packed and should be designed so items inside the bag can be fastened to it with individual lanyards. The bag itself should be brightly colored and sport reflective strips. It should also be identified with a large label stating "Ditch Bag," or something similar, so there will be no mistake as to which bag to grab amid the stress and confusion of abandoning ship.

Boating supply stores sell a great variety of ditch bags. Some bags have a Velcro bulkhead mount so they can be located in plain sight and easily removed in an emergency. Many bags claim high flotation loads, but unless the bag is completely waterproof (and most are not), the weight of the equipment inside can send the bag to the bottom. The shoreside weight of the contents can be misleading. If the bag contains a number of heavy water bottles, for example, they will provide their own flotation when the bag is submerged in salt water, since fresh water is less dense than salt water. Metal objects are an entirely different matter. The only real way to know if your bag will float is to immerse it when it's loaded with all the requisite gear and see for yourself.

You can supplement flotation by storing many of the items in the bag — medications, first-aid gear, and so on — in sealable plastic bags that trap a substantial amount of air. A completely waterproof bag is another solution, but they are not easy to find. If you locate one, it should be able to keep your heavy contents dry while staying afloat.

LAYOUT AND ILLUSTRATIONS BY TED TOLLEFSON

What goes into a ditch bag is a matter of personal choice and will depend on where you sail. Here is a selection of items, some of them essential and all of them useful. (A) folding, plastic 5-gallon water jug (B) signaling mirror (C) waterproof flashlight (D) stainless-steel multi-tool (E) fishhooks and line (F) waterproof strobe light (G) waterproof VHF-FM marine-band radio (H) waterproof matches and match-holder (I) stainless-steel knife (J) plastic spoons (K) pop-top food cans (L) water bottles (M) folding plastic bucket (N) lightweight foul-weather gear and hats

The contents

Whatever else you decide to put in the bag, the most important items are those that can alert rescuers to your status as soon as possible. These include electronic systems such as an EPIRB and PLB (see "EPIRBs, PLBs, and SARTs 101" in the January 2008 issue) as well as a VHF radio that is either waterproof or in a waterproof bag. Your kit should also contain visual distress signals. These could include a strobe light, hand-held and rocket flares, and smoke signals. Although they are stored out of sight in the ditch bag, don't forget to check the expiration dates of pyrotechnic devices and replace them when appropriate. A signaling mirror can also be very effective in attracting attention but requires a sunny day (see "Reflect on This" in the January 2005 issue and "Signaling for Help 101" in the January 2009 issue).

Solar blankets can protect you from the sun or cold and can be used to catch rainwater. Include bottled water and some form of nourishment. If that nourishment is in cans, you'll need a can opener unless the cans have pull-tab tops. If you're making a long ocean crossing, a solar still or hand-operated reverse-osmosis desalinator should be part of your emergency equipment, as should simple fishing gear. A basic medical kit is important too. Don't forget any medication that you or a crewmember can't live without, and sunscreen. Spare glasses and a pencil and pad of paper could be helpful; a knife is essential. Inflatable life rafts should have patch kits and a supply of short lanyards to make sure nothing is lost overboard, such as the bailer or the knife.

There are no hard-and-fast rules about the contents of a ditch bag. Sailors must evaluate their own requirements. Think about things you'll need to keep you warm and dry, protect your skin from exposure to the sun, keep you hydrated and nourished, maintain your health, signal for help, and navigate toward land.

> **"Whatever else you decide to put in the bag, the most important items are those that can alert rescuers to your status as soon as possible."**

If your sailing lifestyle will never put you in a situation where a ditch bag would be necessary, assembling one will not be a high priority. But if there is a chance, however remote, you might need it, the ditch bag should be one of those items you spend time and money on and then hope you never have the occasion to use.

Don Launer, a Good Old Boat *contributing editor, has held a USCG captain's license for more than 20 years and has sailed the East Coast from Canada to the Caribbean. He built his two-masted schooner,* Delphinus, *from a bare hull. He keeps her on Barnegat Bay, New Jersey.*

Cost-effective

Ten things you could take off

In today's economic climate, many of us are looking for ways to scale back our budgets without giving up our dreams. For anyone who has been planning an extended family cruise — whether for two weeks or four months — leaving off as much of the "must-have, can't-leave-without" equipment as possible can make the difference between a family sailing experience to be cherished and a might-have-been that will always be regretted. Many articles have been written about the minimum requirements for equipping a boat for an extended coastal voyage but very few help you figure out what you can leave behind without compromising your voyaging lifestyle.

My husband, Evans Starzinger, and I have spent the last decade cruising aboard our 47-foot aluminum Van de Stadt Samoa, *Hawk*, and before that, on our Shannon 37, *Silk*. When we fitted out *Hawk* after completing a circumnavigation aboard *Silk*, we chose to keep the boat simple to minimize maintenance when cruising in the high latitudes, where boatyards and chandleries are few and far between and where we must be able to fix anything that breaks. If we had put aboard all the things we "couldn't leave without" before setting sail, we'd have spent another two years ashore earning the money to buy the equipment, and at least twice as much of our time on maintenance once we left. We weren't willing to make those trade-offs.

For 15 years, and more than 100,000 nautical miles, we lived without many of the things others consider to be necessities. We have gained first-hand experience with the real trade-offs inherent in outfitting a boat.

If we were to fit out a coastal boat on a very limited budget for cruising for several months at a time in the Great Lakes, between the Northeast and the Caribbean, or between the Pacific Northwest and Mexico, our choices would be quite different. Those choices and the reasoning behind them may help you avoid unnecessary expenditures so you can realize your cruising dreams. What follows are 10 things we would leave off when fitting out a coastal-cruising boat on a minimal budget.

1 Refrigerator/freezer

Of the equipment we left off *Hawk*, refrigeration comes as the biggest surprise to most people. But refrigeration costs a great deal to install and then requires more energy to run than just about anything else aboard. Having it aboard means running the engine for several hours a day in the tropics or totally reconfiguring the electrical system. We have gotten along very well for more than a decade without refrigeration and have learned many alternative ways to preserve everything from fresh produce to meat.

If we planned to cruise north to Maine, the Great Lakes, or Puget Sound, we would definitely not install refrigeration; we know from experience that we would never miss it. If heading south to the Caribbean or to Mexico, we would carry several large, insulated freezer bags. We have used these on *Hawk* to keep things cold between the store and the boat. With a block of ice, these work well to keep meat, milk, yogurt, and a few other foodstuffs cool for two to three days at a time.

2 Watermaker

Silk carried 100 gallons of water, and we were never down by more than 50 gallons. We often caught rainwater between dockside refills. On *Hawk*, we preferred the simplicity of extra tankage to the cost, complexity, and energy requirements of a watermaker. *Hawk* carries 200 gallons of water in two tanks, and we have gone two months between refills without making any real effort to conserve water. On strict passage rations, we have gone three months without refilling the tanks. We have always been able to catch rainwater before our tanks got too low except in a few places like the Sea of Cortez in Mexico, where water was readily available in marinas.

We would definitely not install a watermaker as long as we could find a way to carry at least 25 gallons of fresh water for each regular crewmember and we could set the boat up to catch rainwater efficiently.

3 Hot water/pressure water

On *Silk*, we had pressure water and a water heater that worked off 110-volt power or the engine heat, but we rarely used either. We installed foot pumps in the galley and head and used those so we could control our water usage. We still had to maintain the pressure-water system, however, and we spent more time rebuilding the pumps and looking for leaks than we did using it. Aboard *Hawk*, we did not install pressure water or a water heater; instead we put foot pumps in the head and galley. Those have met most of our needs more than adequately.

While we never miss hot-water showers while cruising the tropics or

coastal cruising

the "must-have" list

by Beth Leonard

When *Hawk* was in Chile, refrigeration wasn't much of an issue. Beth and Evans were sailing in areas where they could get ice off the bow of the boat with an ice pick, far left. With the skills they learned for preserving food over the years, Beth and Evans had little problem getting along without refrigeration, even in the desert climate of Baja, Mexico, at left.

when summer cruising in temperate latitudes, we have occasionally wished for that luxury when cruising in cold climates where there were no facilities ashore. But for coastal cruising, we would buy a solar shower for use when the sun's out and a large teakettle for when it isn't — and make use of the shower facilities ashore at yacht clubs or marinas when we felt the need for a "real" shower.

4 SSB/ham radio

An SSB or ham short-wave radio keeps most cruisers in touch with the mobile cruising community and provides social life on passage. With a Pactor modem, it can also serve to send and receive email. We did not have a high-frequency radio for most of our circumnavigation on *Silk* and, when we installed one near the end of our voyage, found we didn't like being tied to "scheds" and having people panic if we couldn't come up at the appointed time. On *Hawk*, we have relied on an Iridium satellite phone for voice and email communications and for weather.

But since we left on *Hawk* in 1999, communications have undergone a total revolution, and the options available to cruisers have increased dramatically. Cell-phone coverage has improved, WiFi has become common, and Skype has brought low-cost international calling to anyone with a computer. As a result, if we expected to limit our cruising to U.S. waters, we would not install an SSB or rely on the Iridium phone. Instead, we would buy a cell phone with a country-wide plan and we would use WiFi wherever it was available (most marinas, some larger harbors, and ashore at coffee shops or restaurants). We would use Skype to make most of our long-distance phone calls and use the cell phone sparingly.

For cruising Canada and Mexico, we would purchase one of the North America plans for the cell phone that extends coverage to these other countries. If cruising in the Caribbean, we would buy an unlocked GSM phone and purchase a new SIM card for each group of islands. We would make do without modern communications for the few weeks we might be cruising in places without cell-phone coverage or WiFi, such as the west coast of the Baja Peninsula or the unpopulated areas along the north coast of Newfoundland.

5 EPIRB

We have carried a 406-MHz Emergency Position-Indicating Radio Beacon (EPIRB) on both of our boats, but we would not buy one if we were fitting out a coastal boat, even if we planned to make short offshore hops of from one to three days. The U.S. Coast Guard reports that 94 percent of EPIRB signals are false, so it is reluctant to launch a search-and-rescue mission without confirmation that the vessel involved is in an emergency situation.

The high percentage of false signals has forced long-distance offshore race organizers to require two emergency signals from the same vessel before they will launch a search-and-rescue attempt. Today, making contact with the Coast Guard through the VHF radio or a cell phone is far likelier to result in a rescue than setting off an EPIRB. Rather than spend the money on a 406-MHz EPIRB, we would invest in a high-quality VHF radio with Digital Selective Calling (DSC) that provides coverage up to 20 miles offshore, and we would use that in an emergency.

6 Radar

We carried radar on both boats but have used it in earnest only about a dozen times in 15 years of cruising. Since the accuracy of GPS has increased to the point where you can pinpoint your position to within a few feet anywhere in the United States, Canada, or the Caribbean, the GPS has supplanted the radar in its primary use — locating the boat in conditions of poor visibility. The second use of radar — avoiding collisions with other traffic in poor visibility — is necessary only where there is heavy fog. In areas like Maine and British Columbia, the fog tends to burn off by midday, so sailing in the afternoon instead of the morning all but eliminates the need for radar.

In areas with heavy shipping traffic, such as the Strait of Juan de Fuca or the entrance to Chesapeake Bay, an Automated Information System (AIS) receiver plugged in to our chart plotter

"…for coastal cruising, we would fit a Windex to the top of the mast and install a fishfinder that worked through our chart plotter…"

would provide us with the location, course, and speed of any shipping in our vicinity and give us an added margin of safety. As long as we were not trying to cruise to a fixed schedule in an area known for heavy fog, we would not spend the money on radar.

7 Integrated instruments

A full set of instruments — anemometer, depth sounder, and knotmeter — costs a great deal to purchase and install and even more to fix. We have sailed with integrated instrument systems on both boats, and we have had to replace some component of them about every six months. The only piece of information the instruments provide that is absolutely critical is depth. Today, high-end chart plotters have a feed for a fishfinder that can be used to determine depth.

The GPS also provides speed over the ground, eliminating the need for a knotmeter. Though the GPS cannot provide speed through the water when in areas with strong currents, it can tell you how much the current is affecting your course, which is what is really important. Many people have circumnavigated without wind instruments and tend to be better sailors for it, knowing exactly where the wind is and how strong it is at all times.

When equipping a boat for coastal cruising, we would fit a Windex to the top of the mast and install a fishfinder that worked through our chart plotter, rather than invest in a full system of integrated instruments.

8 Diesel heating

For anyone planning to cruise in cooler climates, a reliable heater means the difference between cold-weather camping and civilized comfort. We were very disappointed with the reliability of the Webasto forced-air system on *Silk*, and most people we know with forced-air heaters have had trouble with them unless they were in use regularly. Aboard *Hawk*, we installed a drip diesel heater that kept us warm in temperatures below 50°F but is overkill otherwise.

If we were outfitting a coastal boat for summer cruising in Maine, Nova Scotia, Newfoundland, the Great Lakes, or British Columbia, we would install a marinized bus heater that uses the engine hot water to heat the boat. If we turned this on when we were approaching an anchorage and getting the anchor down, the boat should be toasty warm when we went below. A kerosene lantern would then keep the chill off overnight.

9 Mainsail furling

Good sail control means one crewmember taking no more than a few minutes to reduce canvas from full sail to reefed or furled. For headsails, roller furling offers a solution tested over hundreds of thousands of offshore miles aboard racing and cruising boats. Mainsail furling systems have so far not proven to be nearly as robust. But handling the 750-square-foot mainsail is the most formidable task we face reguarly aboard *Hawk*.

We eventually followed the lead of the singlehanded ocean racers and installed full battens and lazy-jacks. For reefing, we use a two-line, slab-reefing system led back to the cockpit with separate lines for the tack and clew at each reef point. We have had only one failure in 75,000 nautical miles and consider the system to be just about bulletproof.

However, we often dream of being able to handle the mainsail as easily as we handle the jib, so we continue to follow advances in mainsail furling, stack packs, and other mainsail-handling systems. So far, we haven't found any solution as reliable as the full battens and lazy-jacks. If we were fitting out a boat for coastal cruising, we would install a lazy-jack system with the existing mainsail and try to find a way to retrofit a two-line reefing system led back to the cockpit.

10 Generator

We hate running the engine but have no desire to substitute a separate diesel generator as the way to recharge our batteries. The choices we made above for coastal cruising add up to an energy-efficient boat with minimal electrical demand. However, laptop computers today draw much more than they did when we got our first one in New Zealand in 1993. At that time, the black-and-white (well, green-and-gray) screen and the simple programs meant that the computer drew less than 1 amp and hardly changed our electrical balance.

Today's laptops with their big color screens and behemoth programs draw 4 to 5 amps. Because

Resources

Beth Leonard and Evans Starzinger describe many of their techniques for keeping cruising simple in articles posted on their website: <http://www.bethandevans.com>.

they're doing digital photography and surfing the Internet, cruisers spend much more time on the computer today than a decade ago. For those who choose to have a laptop aboard, the peak electrical demand when on the computer all day will be 50 amp hours and, with two computers aboard, it can be twice as much. Our single 75-watt solar panel can almost keep up with one computer in tropical sunshine, but not two.

If we were outfitting a coastal boat, we would install as many solar panels as possible without compromising the boat's sailing performance. That, in conjunction with motoring into and out of anchorages, would probably take care of our electrical demands. But if we had a big gap between what we were using and what we were generating, we would turn to the solution that has worked well aboard *Hawk* to provide power for our increasingly energy-hungry computers.

On this boat, we have supplemented the solar panel with a 4-stroke, gasoline-driven, "super quiet" Honda generator that produces 900 watts and weighs only 29 pounds. If we put it on our swim platform when it's running, we don't hear it at all from inside the boat. It uses approximately a tenth of a gallon of gasoline per hour and generates a steady 40 amps at 12 volts. In conjunction with our single 75-watt solar panel, we need to run it about an hour a day on the few occasions when we're using both of our computers all day at anchor.

Everything ties together

The decisions about what we would leave off a coastal boat tie in to one another — if, for example, we decided to add refrigeration, we would have to revisit the electrical generation question. The members of every boat's crew have to find their own balance between comfort, convenience, maintenance, money, time, and electrical consumption that best meets their particular cruising needs.

We're not purists, nor are we Luddites. We don't have any deep philosophical opposition to the majority of the items on this list, but we have found that we most enjoy our comforts when we can have them for a minimum of cash, care, and complexity. By not equipping our boat with the equipment listed above, we would save at least $20,000, which for us would be enough money for a year to a year-and-a-half of coastal cruising. We would also spend a lot less time worrying about getting things fixed and a lot more time enjoying the places we visited. We'd save dollars and reduce stress, and that makes sense.

Beth Leonard and Evans Starzinger circumnavigated in Silk *from 1992 to 1995. They spent three years rebuilding their cruising kitty and building a boat capable of sailing in higher latitudes. In May 1998 they left aboard* Hawk. *Their itinerary consists simply of a list of places they'd like to visit.*

What we wouldn't leave without

Given the list of things we would leave off a coastal cruiser, what equipment wouldn't we leave without? Beyond the basic boat — which includes mast and sails — the following are items we would consider the bare essentials for a three- to four-month coastal cruise.

Oversized ground tackle

We would opt for an oversized anchor and at least 75 feet of chain. In order to sleep well at night, we prefer to have an anchor one size larger than the manufacturer recommends. Anchoring instead of staying in marinas is the best way to minimize expenditures when cruising.

Autopilot

We almost always sail short-handed, so having aboard a third "person" to take the helm while we're managing things on deck is critical to our safety. On most coastal boats, a wheel-mounted autopilot is sufficient, but we would want to make sure that the autopilot was capable of handling the boat even in strong winds and big waves offshore.

High-end chart plotter

A chart plotter minimizes the mistakes inherent in moving from chart to GPS. It also offers fishfinding and AIS capabilities. We prefer the waterproof, marinized chart plotters with a fixed installation to the possibility of having our laptop computer tossed across the boat or doused by a wave.

Depth sounder or fishfinder

The only instrument we absolutely must have aboard is a way to determine depth. A lead line works, but we don't have the patience or the skill to use it quickly enough in an emergency situation.

Dinghy

Anything from an inflatable kayak to a sailing dinghy will do, but we need some way to travel between the boat and the shore when at anchor.

VHF with DSC

While a handheld is cheaper, a fixed-mount VHF transceiver with an antenna at the top of the mast offers much better reception and provides much greater range. A VHF is necessary for everything from talking to harbormasters and arranging slips in marinas to calling for help in an emergency. DSC gives you emergency coverage a minimum of 20 miles offshore.

Compass

We would carry a binnacle-mounted compass and a handheld compass or a compass in a binocular. When coastal cruising, you depend upon being able to take bearings on landmarks to plot your position on a chart. Having the tools and the skills to do this is essential to safety in coastal waters, even with accurate charting and GPS.

Laptop computer

We are at the point where we can't do many of the things that are most important to us without a laptop: weather information, email, photography, and calling home. We would choose to cruise with at least one computer aboard. We would also choose to have a cell phone because it has become very difficult to arrange anything, from a rendezvous with friends to an appointment with a mechanic, without one. But we do not consider a cell phone a necessity, especially given that we do most of our long-distance calling using Skype over the Internet.

Going, Going . . .

Holding clipboards, auctioneers Cheryl Tucker, Watergate Yachting Center's general manager, and Tony Buchanan, harbormaster, encourage bidding on a 1983 S2 7.3, above. Chuck Vastine enjoys a few moments aboard his new boat, below. His winning bid for the S2 was $1,500, the top price paid for a sailboat at the auction.

Marina auctions offer good old bargains aplenty . . . but caveat sailor!

by John Ira Petty

Auctions of abandoned boats are potentially an excellent source for sailors looking for smaller and inexpensive good old sailboats, the kind that are perfect candidates for restoration. Often, these forlorn boats bear proud names, and they've all seen better times. Some of them will see good times again and make their new owners happy people.

Occasionally, boatowners, for whatever reason, stop paying slip fees, and their boats become liabilities for the marinas where they are berthed. They occupy slips, produce no revenue for the marinas, and often become eyesores. To dispose of them, many marinas, after going through the necessary legal steps, hold periodic auctions. Their purpose is more to clear the slips than to make money.

At a recent auction at Watergate Yachting Center in Texas, 15 boats were offered, all but one of them sailboats. The marina, the largest in the state, has more than 1,100 wet slips and is situated on Clear Lake, off Galveston Bay between Houston and Galveston.

Ten of the boats in that auction were sold. Prices paid for the sailboats ranged from $1,500 for a 24-foot, 1983 S2 7.3 to $50 each for a 1983 cat-rigged

Pearson 23, a 1985 Starwind 22, and a 1965 Columbia 24. The remaining five boats attracted no bids and later were broken up for parts and scrap. One man, who'd come to the marina to go sailing and stopped by the auction out of curiosity, wound up buying five boats.

Lots of red tape

"It's a lengthy process to get to the auctions," says Wendy Larimer, legislative coordinator for the Association of Marina Industries. "There's a lot of red tape proving they've done everything possible to find the legal owner and get payment from him." Once that has been done, the marina has to go through more legal steps before it can auction off such boats.

In the case of the Watergate auction, some of the boats belonged to the marina. "People have actually given us the title to a couple of them," Pauline Mahoney of Watergate Yachting Center told me, "because they didn't want to deal with them anymore."

"Unfortunately," Wendy says, "auctions generally do not bring in enough money to compensate the marina for what it has lost in slip fees. Often, the boats are in such bad shape that salvaging them isn't even an option, so the marina owner has to pay to have the boat removed and destroyed."

When a boat is sold at auction, the marina collects its fees from the proceeds. Lien holders are next in line and any money left goes to the former owner, if he or she has been located.

Buyer's risk

Such auctions are very much buyer-beware events. The Watergate auction is perhaps typical. Boats are sold "as is, where is, no warranty, no guarantee." All sales are final.

Bidders register at the marina office shortly before the start of the auction. Prospective buyers can look at the boats in their slips in the days before the auction, but they cannot go aboard because most boats remain private property until the auction occurs. Would-be bidders can look inside boats of interest immediately before the auction.

> **"It's anybody's guess how many marinas around the country hold boat auctions and how frequently."**

The auctioneer sets a minimum bid on each boat. There is some flexibility — that amount can be, and frequently is, reduced for the less-attractive boats. The marina itself reserves the right to bid on any of the boats.

Each winning bidder has to put down a $500 deposit (or the full price of less-expensive boats) in cash, certified check, or money order at the time of the sale. The balance is due the afternoon of auction day. Since such auctions generally are held on a Saturday, getting the cash can take some planning or cause some last-minute scrambling. A high bidder who can't come up with the balance forfeits the deposit.

It's anybody's guess how many marinas around the country hold boat auctions and how frequently. How do you find out about them? Generally, they're advertised in the legal section of at least one of the area's newspapers. Some marinas maintain mailing lists to notify individuals of upcoming auctions. Sometimes, area newspapers — those

Brothers George, left, and Ed Holmes congratulate one another on their purchase of this 1982 Sovereign 24. Their winning bid was $150.

The day of the auction was a dark one for this 1972 Cal 27. It attracted no bids and was later broken up.

that have sailing or boating writers — publish advance stories on auctions and report on them afterward.

Perhaps the easiest way to learn about them is to call one of the marinas in your area and ask. If that marina doesn't do auctions itself or doesn't have one scheduled in the near future, the staff might know of another marina that does have an auction scheduled.

A boat for $150

At the Watergate auction, brothers George and Ed Holmes, who live near one another in the Clear Lake area, acquired a 1982 Sovereign 24 for $150. It was the second boat they'd bought at auction with a view to restoring it.

"As if three boats weren't enough, he bought a 1978 San Juan 24 for $200 for his 25-year-old daughter."

The year before, they'd found a boat trailer sporting a "For Sale" sign. It also had an older Hunter 25 on it. They tried to buy just the trailer, to no avail. But after some negotiation, the owner offered them the boat and the trailer at a price they were prepared to pay for just the trailer.

Ed, an office-machine service technician, says he didn't believe the Sovereign they bought this time had been out of the water since before its last registration renewal in 2000. "It had an inch-thick beard below the waterline and its own little ecosystem," he says.

"With advances in design, materials, and engineering since these boats were built, you can sometimes make them better than they've ever been," Ed notes. "It's a great pleasure to see them return to new or better-than-new condition."

Two bargain boats

Another buyer that day was Chuck Vastine, a shipping foreman who works in Galveston. He bought the S2 for $1,500 and a Pearson for $50. He sold the Pearson a week or so after the auction. The S2 was his restoration project. It came with an outboard and was in remarkably good condition for an auction boat, though it was in need of cosmetic work. Chuck says he'll sail it during and after the project and then perhaps offer it for sale.

Johnny Nimmons, a technical research associate at a Shell Oil Company facility in west Houston, bought the only powerboat in the auction, a 28-foot 1980 Wellcraft, as well as four sailboats. He bought the Wellcraft, at $2,000, for his wife, Elizabeth, to ensure domestic tranquility. For himself, he bought a 1982 US 30 for $1,000. It has a rough interior that he'll restore. He also purchased, for $300, a 1968 Westerly 30 which, after spending some time and money on it, he later sold.

As if three boats weren't enough, he also bought a 1978 San Juan 24 for $200 for his 25-year-old daughter who was just getting into sailing and, for $100, a 1968 Coronado 25 that he planned to use to entertain members and families of the Houston law firm where his wife works.

Johnny had sailed as a young man but had been away from it for many years. His family lives at a residential airport, and his avocation has been flying antique aircraft.

"The marina, after all these years, is a nice change of pace," he says. The US 30 "is like having a little condo on the water. The whole family has been excited. We had a great time. It was a fantastic week for us."

But, as much as he'd been looking forward to being back on the water that day, Johnny never did get to go sailing on that auction Saturday.

John Ira Petty worked for almost 30 years at metropolitan newspapers and for 15 of them wrote a weekly sailing column. He holds a 100-ton master's license with sail endorsement.

Johnny and Elizabeth Nimmons are happy about their just-purchased 1982 US 30, a $1,000 investment. They'd come to the marina that Saturday to go sailing. Unsuspecting, and out of curiosity, they stopped to watch the auction and wound up buying five boats.

Six into

A two-day passage into bright blue sub-tropical water inspired pleasant reflections on how the journey with our good old boat had unfolded so far, and gave my wife, Amy, and me a chance to count our blessings. Nestled in a shallow anchorage, we were enjoying the sunset with a few fishing boats at Marquesas Keys, 25 miles west of Key West. The peace of the hour was complemented by the laughter of our children as they watched a snapper flopping around inside the tender — we had been the recent beneficiaries of gifts from area fishermen that included five snapper along with recommendations for nearby diving spots. Our kids, Emily, 11; Russell, 9; Joy, 5; and Grace, 4, love cruising and were enthralled with the setting and a chance to see fishing boats up close.

Our Nimble 20 had cruised here in comfort, cutting through the water like the porpoises that danced in her bow wave. In beautiful 80-degree temperatures, a 10- to 12-knot trade wind pushed her along on a lazy beam reach at 5 knots. (We lost some speed due to the 12-foot rowboat filled with gear we were towing.) Conditions were so good we unfurled our custom foresail, modeled after Ted Brewer's Rob Roy. Its 180 square feet allow us to maintain maximum speed in light-air conditions. With the foresail, main, and mizzen combined, we raised more than 300 square feet of sail. Our 20-foot double-ender is a traditional boat for the Keys. Similar to the sharpie, she was built by Nimble Boats in Clearwater, Florida. Her name, *Bide A Wee*, passed down from my grandparents' boat, is an Irish phrase meaning "Stay with me a while."

We had planned our toughest passage yet for the next day: 50 miles farther west across the Gulf Stream to the Dry Tortugas. But tension aboard rose as the forecast suggested the approach of a front. There would be a small-craft advisory the next evening. If the seas were steep and breaking, it would be risky. Letting go of our big destination was easy, however, because so many grand events had unfolded all around us in the Florida Keys.

A long but worthwhile haul

It was easy to justify towing *Bide A Wee* 1,500 miles to be there. We had launched at Bahia Honda State Park at the west end of the Seven-Mile Bridge, midway down the island chain that makes up the Florida Keys, and were immediately greeted by a manatee. It lazily munched sea grasses so close to our kids I asked them what its breath smelled like. The

20 equals fun recurring

A large family has big adventures in a small boat

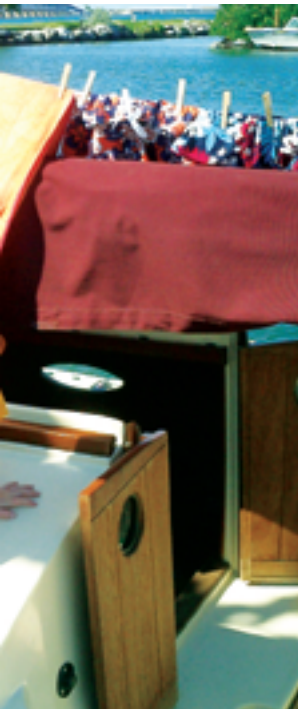
by Paul English

park was so delightful we lingered to enjoy it. We played on the white sand beach, practiced snorkeling, explored sponge beds, and spotted sea turtles, porpoise, sharks, and a wide variety of fish and birds. Perhaps, in addition to being our boat's make, "nimble" is our mantra; we adjust our destinations and schedules with the weather, or follow the trail of discovery as it presents itself.

After dinner, we watched a family movie on the laptop computer while crammed two to a bunk. There were no real complaints; the adventure far outweighed sleeping conditions. Shoes and suitcases were stowed in bags in the cockpit; all usable cabin space was reserved for sleeping.

By the time we had been separated from my wristwatch by 60 miles, our days began to be scheduled by the sun. Sunrise's soft glow on the warm teak and brass cabin trimmings, along with the peaceful stillness of my slumbering family, reminded me of how life has changed my perspective. Simple things bring heartfelt joy.

So instead of battling large seas, we moved to the nearby diving spots, deployed the boarding ladder,



Amy and Paul English and, in descending height order, Emily, Russell, Joy, and Grace, above left, all fit into their Nimble 20, *Bide a Wee*, above, and head off for vacations packed with waterborne fun, at left, anywhere that's accessible to a good-size towing rig, far left.

Eleven-year-old Emily takes Joy on a voyage of exploration in the 12-foot skiff, right. Russell, 9, takes his turn at *Bide A Wee*'s helm very seriously, below left. His mother, Amy, is rather more relaxed while little Grace, 4, saves her concentration for an apple, below center. Dad, Paul, surveys a cockpit laden with the gear essential to a family of water sprites, below right.

and retrieved snorkel gear from the tender. Anticipation grew as at bedtime on Christmas Eve. *Bide A Wee* became a frenzied blur of activity. Before long, we were spotting sponges, corals, and sea fans. Even though the fish appeared to be elsewhere on that particular morning, there were no complaints. We took a second dive, then retrieved the anchor and enjoyed another lazy sail on a beam reach to Key West.

Arrival in a harbor commonly finds our charming little boat greeted by friendly folks. Her classic design sparks curiosity. But the reaction in Key West exceeded my expectations. Local sea captains and their crews complimented us on our happy, well-mannered kids. They could barely hide their surprise that six of us were cruising together on such a small boat. After a couple of days, they were sharing their catch and relating grand stories of their boats and cruising adventures. They also shared knowledge of the local waters, maritime advice, fishing advice, lessons about weather patterns, and enough recommendations for nearby shallow-water destinations to fill a couple more vacations.

A dream realized

Ownership of *Bide A Wee* has been a lifelong journey for me. It started at age 5 in my grandfather's workshop when I spotted a box of yacht magazines. Once on my own, it took me 10 years before I was able to buy a boat. It seems an impossible chance that, shortly after moving to Peoria, Illinois, I wandered into a tiny marina and was approached by Steve Eakle, who was preparing a Nimble for delivery. For several months this boat lingered in my thoughts; no other boat could replace it. I ordered my Nimble new from Steve in 1991 and, when I visited Clearwater, Florida, for my grandparents' 50th wedding anniversary, my whole family traveled to the Nimble factory and met Jerry Koch and his tradesmen as they were building her. Jerry preferred that his boats be built by sailors. Over the 17 years that we have owned *Bide A Wee*, we have gained appreciation for the quality of workmanship that went into her.

Adapting to the Nimble

My first date with Amy was a local cruise in *Bide A Wee* on the beautiful waters of Peoria Lake, a very wide bend in the Illinois River. The following summer, during our courtship, we logged 50 daysails with friends.

As our family grew, I considered buying a bigger boat, but our local waters are silting up and becoming increasingly shallow, and we couldn't bear to let go of *Bide A Wee*. So,

instead, we adapted. We took Russell, Joy, and Grace each on daysails before they reached two weeks of age.

One year, for my birthday present, Amy encouraged me to upgrade from our 5-hp outboard to a 15-hp motor with an alternator. The motor sits nicely in a cockpit well forward of the transom-hung rudder. A teak table covering it has become a do-it-yourselfer's paradise. We added a solar charger on top, cup holders on the sides, a marine radio and an anemometer display inside. Ted Brewer's design provides perfect space for two marine batteries secured snugly under the cockpit floor. The end result is a steady stream of electrical power, so we don't need shore utilities.

As *Bide A Wee* ages gracefully, she offers opportunities to teach our young crew maritime skills. For this trip, everyone worked a focused weekend on trailer restoration. Completely on their own, the kids pulled our 12-foot aluminum rowboat from under the backyard deck and prepared it for the journey. Russell helped me rebuild the tiller. The metal loop around the mizzen mast offered a fair challenge, but we were very pleased with the strength of our new one.

Over previous vacations, we'd sailed farther in far less time, but we found we needed to go at a slower pace to take in all the abundant marine life along the Florida Keys. Upon returning home, the kids attacked their make-up schoolwork with enthusiasm ignited by our cruise. Our can-do outlook has been reinforced. A nimble attitude and affordable cruiser allowed us to maintain a steady pace of family vacations beyond tourist experiences to self-directed wide-ranging adventures. It reminds me of the *Magic Tree House* stories we read to our children; *Bide A Wee* is an extension of our home that we take on wild journeys of discovery.

***Paul** and Amy **English** have been cruising their Nimble 20,* Bide A Wee, *along the Illinois River in Peoria since their first date in 1992. For family vacations with their four children, they trailer her to Lake Michigan and the Florida Keys.*

Ericson 32-III

A cut above the competition

by Richard Smith

In about 6 knots of wind, *Raconteur*, the Ericson 32-III of Jerry and Jean Riggs, glides along leaving very little wake. The hull's lines are still attractive, even though the style of the reverse transom gives away her age. Note the signature Ericson portlights in the cabin trunk.

Just after high school, Jerry Riggs began a life with boats racing 75-mph Class B hydroplanes. A fascination with engines and aerodynamics led to a part-time job in college testing outboard engines for Mercury Marine that eventually led to an engineering degree and a career in torpedo-propulsion testing. Along the way he married and built a house just outside Kingston, Washington. He and his wife, Jean, raised a family and cruised in a succession of powerboats while changing diapers, water skiing behind skittish 17-foot runabouts, and eventually cruising into retirement.

For veteran and committed powerboat people like the Riggses, this would seem time for a trawler yacht — something less strenuous, something suitable for retirees in their 60s. But just before hip replacement surgery, Jean revealed a long-held, but secret, love affair with sailboats. Initially dubious, but sensing a challenge, Jerry said, "OK, let's do it."

A search began that led to *Raconteur*, a 1986 Ericson 32-III, and it was love at first sight.

Design

The first Ericson 32-footer was actually called the Scorpion 32, and was a development of the Sabre 5.5 meter built by Columbia Yachts. Next was the Ericson 32-II, a racer/cruiser designed by Bruce King and built between 1969 and 1978. The 32-III, modernized from its forerunner in several significant ways, was built beginning in 1985. A fourth model, the Ericson 32-200, was essentially a deluxe version of the Ericson 32-III. In 1990, some Ericson molds were acquired by Pacific Seacraft, which built the last 32-foot hulls, calling them the Ericson 333. The run finally ended in 1998.

Compared to its predecessor, the 32-III is 11 inches longer, nearly 2 feet beamier, and 1,000 pounds heavier. It was available with several keel configurations, the standard fin being 1 foot 3 inches deeper than the 32-II's. It's no surprise, then, that the 32-III carries more sail area on a rig that has a significantly higher aspect ratio. The displacement/length ratio is 253, which is moderately heavy, indicating there's enough volume in the hull for sufficient tankage and stowage for respectable cruising distances. And the sail area/displacement ratio of 17.3 is fairly high, suggesting the 32-III will do well in light air.

The most important difference in the 32-III compared to the 32-II, however, is the more vertical planform of the underwater appendages compared to the earlier model's swept-back keel and rudder. These new shapes reflected departures from the CCA rating rule that influenced the design of earlier models during the 1950s and '60s, as well as the current thinking about keels and rudders in the 1980s.

The Ericson 32-III also was designed by Bruce King and bears a strong family resemblance to the other Ericsons by King. For example, look for the pair of long trapezoidal deadlights in the after end of the cabin, and count the number of smaller portlights forward: the Ericson 34 and 35 have three, the 32 has two, the 27 has one, and the 25 gets by without any. Another common element is the wide sheer stripe that swoops up to the deck at the bow.

In a field of boats that had to respond to strong market forces, appeal to family cruising requirements, and race respectably, the Ericsons were tough competition. There is an attention to detail in the boats — a certain refinement — that helped establish Ericson's reputation for being a cut above average. The overall appearance of the Ericson 32-III, both on deck and below, is one of unity and consistency, free of extremes, giving the impression of a good solid boat, conservative in styling, and wholesome in concept and execution.

Construction

Construction of the Ericson 32-III reflects standard practice during the 1980s. The hull is molded of solid hand-laid fiberglass and polyester resin. Deck and coachroof are fiberglass cored with end-grain balsa. Plywood is substituted for balsa in all highly stressed areas as well as in the cockpit construction. The hull/deck joint is encapsulated in four layers of 3-ounce mat and 7½-ounce cloth. The joint is mechanically fastened and finished off with an aluminum extrusion that's covered by a vinyl rubrail and terminates in fiberglass moldings. Ample molded-in bulwarks stiffen the hull and also provide secure footing on deck.

The 32-III was built with what Ericson termed a "Tri-Axial Force Grid" (TAFG), more commonly called a pan or inner liner, which replaced many interior components, like floors and stringers, previously made of plywood and solid wood. Unlike many pans, this one did not include the berth flats, which Ericson continued to make out of plywood. The TAFG is a single-unit network of hand-laminated fiberglass floor beams and other members intended to strengthen the hull while better distributing structural forces from the engine, mast, shrouds, backstay, and forestay. The whole armature is bonded to the hull during layup and adds pivotal resistance to the lead keel, which is bolted on, not encapsulated as it was in the earlier models. Ericson claimed the TAFG was engineered to save weight, allowing the use of large amounts of teak cabinetry without sacrificing overall performance. It also saved man-hours, which helped amortize the cost of making the tooling.

> **"The overall appearance of the Ericson 32-III is one of unity and consistency, free of extremes."**

Among the deck fittings are four 10-inch mooring cleats, Lewmar deck hatches, an acrylic companionway sliding hatch, and Dorade cowl vents with stainless-steel guard rails.

As with most other boats of her day, *Raconteur* has a few stress cracks in the gelcoat, mostly in areas of sharp turns in the mold.

The rig

The Ericson 32-III is a masthead sloop with a keel-stepped, black-anodized aluminum mast tapered at the top to reduce weight and wind resistance. Standing rigging is a pair of cap shrouds incorporating two pairs of spreaders, fore and aft lower shrouds, a headstay, and a single backstay.

The 32-III carries a 207-square-foot mainsail. Sheeting arrangements for the main are midway on the boom and mounted on the cabin top. *Raconteur* is equipped with a Barient 17 one-speed halyard winch at the mast, two Barient 27 two-speed genoa sheet winches at the cockpit, a Barient 18 one-speed to the port side of the companionway, and a Barient 17 one-speed to the starboard side to handle the mainsheet, boom vang, and reefing requirements. All the winches are self-tailing except for the Barient 18.

PAUL LEVER

***Raconteur*'s dodger, in conjunction with relatively high seatbacks, provides the cockpit with good protection from the elements. The shrouds are inboard, leaving the sidedecks unobstructed, at left. During a late-season race, the wind piped up to about 35 knots, and before *Raconteur*'s crew could take in a second reef, the mainsail split from leech to luff, at right. The black-anodized spars were in style in the mid 1980s.**

The Ericson 32-III has a neat, well-organized galley with stove/oven, ample storage, and lots of teak, at left. For a boat of this size, the chart table is quite generous. Its seat is the head of the quarter berth, which at 6 feet 6 inches makes an adequate sea berth, at right.

Accommodations

The Ericson 32-III has a very workable interior plan with 6 feet 2 inches of headroom. In the forward cabin, the V-berth is 6 feet 6 inches long and 6 feet 6 inches wide at the head. In the saloon, both the dining table with its surrounding seats and the single settee opposite are backed by ample shelving and solid fiddle rails that also serve as secure and convenient handholds. Between the saloon and the forward cabin are the head compartment and a hanging locker.

An 18-gallon fuel tank is mounted below the generous 6-foot 6-inch-long quarter berth, the end of which serves as a seat for the chart table. The galley is aft, to starboard, and is fitted with a two-burner gimbaled propane stove and oven and an ice box. *Raconteur* has hot and cold pressure water. Two water tanks amidships and one at the bow hold a total of 50 gallons.

Typical of Ericsons, the interior finish is largely teak, from the overhead handrails to the teak-and-holly sole. The joinery and upholstery meet high standards.

Auxiliary power

The standard engine was a 21-hp, 3-cylinder, freshwater-cooled Universal diesel. Access to it is excellent. Once the companionway ladder and engine box are removed and stored, it's exposed for all to see and service.

As an engineer and former powerboat skipper, Jerry said the first thing he did was turn *Raconteur* into a good motorboat, making any changes necessary to bring maximum reliability and power to his propulsion system. He rewired as necessary and installed new motor mounts and several new engine-monitoring instruments. The engine compartment was rigorously soundproofed and, in order to eliminate stray odors, Jerry fitted a thermostatically controlled 4-inch exhaust-air duct leading from the engine compartment to a cowl vent on deck. Additionally, a ventilation hose redirects the flow of air from the crankcase to the engine air intake; the previous installation had it leading to the shallow bilge.

Ericson 32-III

Designer: Bruce King
LOA: 32 feet 6 inches
LWL: 25 feet 10 inches
Beam: 10 feet 10 inches
Draft (standard): 6 feet ½ inch
Draft (shoal): 4 feet 4 inches
Displacement: 9,800 pounds
Ballast: 4,200 pounds
Sail area: 496 square feet
Disp./LWL ratio: 253
SA/disp. ratio: 17.3
PHRF: 156

Under way

Friends suggested that Jerry learn the finer points of sailing by racing as a member of the Edmonds Corinthian Yacht Club. The weekend before I was to test sail *Raconteur*, Jerry entered her in the last race of the year from Edmonds, just north of Seattle, across about 6 miles of Puget Sound and back.

On a beam reach under full mainsail and a 130-percent genoa rolled to about 100 percent, the anemometer showed 20 knots, gusting to 25. Keeping the boat under 20 degrees of heel became difficult. When they rounded the buoy on the far side and turned for home close-hauled, the wind increased, and they put the first reef in the main.

By the time the fleet cleared the shipping lanes, wind speeds were 20 to 30 knots, gusting to 35 and 40. Waves were averaging 3 to 5 feet, making for a lumpy sea. Heeling was severe in the gusts. About a third of the fleet dropped out and the VHF crackled with reports of two dismastings. A crewmember went overboard from one boat but was retrieved quickly from the 50-degree water. The Coast Guard was standing by. All this was very exciting for Jerry

In this view, looking forward from the saloon to the forward cabin, the tie rods connecting the starboard chainplates to the Tri-Axial Force Grid are clearly visible, at left. The dinette table drops to make a 4-foot-wide double berth, at right. The cabin sole is teak-and-holly veneer-faced plywood.

and his crew, who had yet to meet winds like this in the Ericson.

Unfortunately, the crew was unable to set the second reef in the main for a variety of reasons, including waiting too long. Just before they crossed the finish line, a strong gust hit and *Raconteur*'s mainsail tore from leech to luff. It was a wild ride, but they hung on and finished fourth in their division of six boats. Jerry felt good as they cleared the breakwater and entered the marina, buoyed with confidence gained from having gotten through some difficult waters without injury to his crew. *Raconteur* had forgiven some serious mistakes in handling and gained the respect of captain and crew.

A few weeks later, Jerry and I took *Raconteur* out for trials with a repaired mainsail. Compared with the unpredictable but usually squirrelly performance of my scimitar-keeled Ericson 31C when backing, the 32-III maneuvered confidently. She handled well under power, accelerating smoothly and quietly. At about three-quarters throttle, she makes 6 to 6½ knots, burning less than ½-gallon of fuel per hour. The engine seemed unusually quiet.

In the 15 to 20-knot winds we had on that day, the boat was well balanced under one reef and the 130-percent genoa. Though lively in the gusty conditions and considerable chop, she was easy on the helm, tracked well, and tacked through about 110 degrees. She came about quickly and surely with little effort.

Sailing the Ericson 32-III in heavy weather shows that it is well to anticipate the need to reef. To avoid excessive heeling and the strain that places on boat and crew, the first reef should go in well before the wind hits 20 knots. A second reef would have been most valuable under the race conditions Jerry faced.

After removing the engine box, access to all sides of the engine is very good. Jerry added sound insulation, which greatly reduced engine noise on deck and below.

It's worth noting that the Ericson 32-III sails handily under either main or headsail, both on and off the wind, an especially desirable feature for the singlehander.

In most PHRF fleets, the 32-III rates from 156-162. This is very close to the Pearson 32 of the same vintage: 159-171, and an O'Day 32-2 at 158-165.

Conclusion

The Ericson 32-III has few, if any, vices. Predictably, there have been reports of softness or flexing in the deck but this is a possibility with any older balsa-cored deck. Some owners caution that chainplates must be checked for rot at the bulkhead. Good maintenance requires that all deck hardware be re-bedded from time to time to head off leaks. Adequate backing plates must be fitted, particularly under stanchions, to ensure that the deck isn't subjected to crushing at these points of heavy and concentrated loads. The good news is that Ericson 32s built between 1975 and 1987 seem to be relatively free of blistering.

Prices gleaned from the Internet range from as low as $22,000 for 32s built in the mid-1970s to around $45,000 for 1986 and 1987 boats. Expect to pay $50,000 and more for boats built after 1990.

It is difficult to fault the Ericson 32-III as a cruiser and there is a likely trade-off between her plush accommodations and performance. She is easy to get to know and forgiving. *Raconteur* has been the ideal boat for Jerry and Jean, teaching them how to sail and introducing them to the world of racing. And she has enhanced their desire to continue boating in retirement — but under sail.

***Richard Smith** is a contributing editor with* Good Old Boat. *He has built, restored, and maintained a wide variety of boats and sailed them on Michigan lakes and Oregon reservoirs and from harbors and mud berths in the Irish Sea. He sails* Kuma, *an Ericson Cruising 31, with his wife, Beth.*

A reprieve

Nameless and rudderless, and perched precariously between boulders and two sea walls where a winter gale had dumped her, the C&C 25 seemed doomed. Men with chainsaws had already been summoned to cut her up.

In the tradition of all good seafaring stories, this one began on a night dark as pitch. The wind built from the southwest and white-capped waves roared up the channel across the moorings to explode in foam against the breakwater. A lone hanging lamp testified to the storm's violence, casting animated shadows in the gusts and illuminating the sheets of rain blasting inland.

At the height of the gale, a gust laid the little boat over hard and she swung against the run of the current. As she snapped back, the cleat on the foredeck let go and she was briefly free to explore. The cadet on watch in the waterfront center saw a flash as her mast whipped in the waves. She ripped by his elevated position, headed into the cove, and ran up onto the rocky beach. With some quick thinking and even faster footwork, he managed to secure some lines aboard and lay them back to trees and a large rock.

The next day was bright and cold, as is normal for early December in New York. I was on my way to class at SUNY Maritime College and, as I drove past the Science and Engineering Building down to the water, I noticed a mast pointing off toward the Throgs Neck Bridge, rather than skyward, as would be normal in the moorings.

On walking down to the seawall through the flotsam thrown across the grass bank, I saw the little C&C 25 propped against the wall and almost standing on her keel, which had worked itself into the fine sand that filled the spaces around murderous boulders. Not thinking, I said out loud, "Someone has their work cut out for them with this one." Little did I know that the boat gods were looking down at just that split second. They decided to have some fun.

Coming with chainsaws

A voice boomed from behind me: "Oh no, she's got to be off the college property by the end of the week and I have a couple of guys with chainsaws coming to cut her down to more portable proportions." It was the manager of the waterfront center.

"But what about the owner?" I asked.

"She was a donated boat, and a donation on the rocks is a pain. You move her, she's yours."

With 10 minutes before the start of my class, I looked over the hull and clambered aboard. There were only a few scratches on the hull as far as I could see and, although she had a grand collection of seaweed and shells tucked away in her cockpit, she looked pretty good. I stood on the foredeck looking at the four holes where once the vital cleat had been, my mind racing.

I can't just let her be cut up . . . someone would knock great fun out of her . . . but how do I move her? . . . class time . . . nice sheer . . .

The basic problem of moving the boat was compounded by the fact that the previous night saw the highest spring tide there would be for a month. Even with another tide as big as that, the sea level would not get back up enough to refloat her without a gale piling New York Bay against the outgoing tide from Long Island Sound.

But the little boat and her guardian gods had their own ideas. When I sighted along the mast to see if the rig had been damaged, I noticed a mobile crane moving large concrete traffic barriers on the bridge above me.

They must weigh a couple of tons; I bet that crane could shift her.

A couple of minutes later, I was talking to the crane driver and a fee was agreed. He could come on Saturday morning and we would see what we could do.

While digging the sand away from the upper side of the keel, I found the rudder buried in the sand. "Good," I thought, "At least this saves me the job of tracing shapes off other boats' rudders in the boatyard."

from the boat gods

Once stranded and condemned, she's now her salvor's Ruby Deux

by Eric Holohan

A gentle lift

Another bright and calm day dawned and the tide was as low as it gets. I pulled the strops under her hull and the crane took up the strain. "I don't know how much I can do for you," the crane driver said, as he realized that the keel was lead, and the strain gauge in the cab climbed to 4,000 pounds. But she shook herself free of the sand and, with the greatest of delicacy, she was placed in 2 inches of water alongside the pier to await the incoming tide.

The crane driver waved as he left and shouted, "I hope she floats after all that."

"Or I will be in a world of trouble," I replied under my breath.

Over the next five hours the tide filled, and finally, almost imperceptibly, she stood upright and floated free. Down below, her bilges were as dry as a bone and there still seemed to be something connected to the keel bolts. The next day, a launch from the waterfront center towed her to nearby Locust Point Marina and she was lifted for the winter.

And so the work began.

Although she was in reasonably sound condition, she was in bad need of a good overhaul. Even without the grounding, she would have needed a goodly amount of work. Having taken Don Casey's advice about softly abrading the baby blue topsides and waxing them back to life, I found that after a week I was getting nowhere. A topside paint job was in order. I did this with a two-part Interlux paint over several coats of primer. After fully degreasing and filling the surfaces, I rolled the paint on and tipped it off with a fine-bristled brush. It was my first attempt at this painting technique and I heartily recommend it, with the caveat that the preparation work *must* be 100 percent or the topsides you have will look better than what you will get.

Toiling in the cold

For those who have not experienced a boatyard in winter in New York (and I don't suggest anyone should go out of his way to do so), it is a right desolate place. Anybody with half a brain would stay at home reading boat mags and poring over the charts for next year's adventures in the warm.

I worked after classes had finished and before they began, hence avoiding the killer heat and sunstroke associated with 30°F weather. The final straw came as I was sanding the topsides with wet-and-dry sandpaper and the water froze as I applied it to the surface. The boat gods had a chuckle that day.

Some jobs could be tackled even with the inclement weather. The motor, a Danish-built Vire 5-hp, single-cylinder, gasoline engine, which looked so good, simply would not fire. I had come across these fine little motors in boats in Europe and knew they had a very good reputation. After a quick Google search, I had full diagrams of the motor's carburetor and electrical system. I bought a new 12-volt battery and charged it at home. The next day, after crushing the ice in the yard's water hose and connecting it to the water intake on the motor, I cranked the motor over and heard the faintest of kicks, then another, and away she went — not like a kitten; more like a cat coughing up a furball, but enough for me to know there was not much wrong with the motor.

A little homework

The tiny storeroom in our upstairs apartment in Hicksville became the workshop for the pulpit. I did not have any real tools of the sort I would have liked to do the job, but the $1,000

After a winter of work, the once forlorn little boat has regained her rudder, her good looks, and her dignity .

quoted to build a replacement pulpit for an "out of manufacture" boat was just too much to pay without at least giving it a go. I used standard angles, bases, and tees instead of welds to connect the parts. It was important to set all the locking screws and lock them in place with adhesive lock compound. After all, it might be me hanging off the bow screaming something about spinnakers and jibing.

The difficult part of the construction was bending the 1-inch stainless-steel tube. This I did using a length of 2-inch softwood with a 1-inch hole drilled in one end so the tube would slide through. As I bent the tube very slowly, using the wood as the lever and a door jamb as a brace, the correct shape began to appear. My wife-to-be watched, thinking, I am sure, second thoughts.

Once given away, then blown away, and now reincarnated as *Ruby Deux*, the C&C 25 has a bright, spruced-up interior, freshly painted topsides, and another chance to sail Long Island Sound.

The portlights were hazed to the point I could see nothing through them, so I bought some 7-mm acrylic and very carefully marked the shapes of the old ones on it. Without removing the protective film from the new acrylic, I cut them with a fine-tooth fretsaw, cutting through a piece of quarter-inch ply at the same time to prevent the plastic from splintering. I then drilled the holes and replaced the portlights in their frames, bedding them in high-modulus silicone mastic. This was the first time I could see something for the work, and I was glad to see it.

The Christmas break gave me some time to clean out the bilges and lockers and start on the woodwork both down below and on the deck. The handrails could be unbolted by removing push caps in the headliner. Along with the tiller (also found in the sand weeks later) I took them home and varnished them in the storeroom, where my wife-to-be pitted her asthma against, "Just another two, or maybe three, coats. Come see, they're looking great."

A boatyard springs to life

Regardless of the official date, spring comes when we have the required 50°F to dry primer and paint. And then one day, the boatyard morgue, where all winter I'd stalked between boat bodies veiled in white plastic shrouds, exploded into life with the smell of thinners, the sound of power tools, and an ever-present patter of Bronx idioms: "Yeh-yeh-yeh, and your mudda."

With the brighter evenings, work moved along at a good pace. The new pintles and transom capping went on, followed by the new stanchions and bootstripe. I removed all the old wiring to nowhere and replaced it with new wiring to somewhere. One evening, after I'd spent several hours sanding internal woodwork prior to varnishing, the VHF that I had written off crackled and then spoke. It was as if the old boat was feeling better and letting me know she was grateful.

Just a year before, I was living aboard my 40-foot steel gaff cutter in the balmy south of Spain before beginning studies for a degree in naval architecture. My beautiful home afloat was called *Rubicon*, affectionately known as *Ruby*, so subliminally the new boat was being called *Ruby* also. When it came time to name her it seemed only right to call her *Ruby Deux* and so her transom was anointed with this name.

"... as we made sail, there came that sublime moment when the sails start to pull and the motor falls silent."

Registration frustration

A situation I had not foreseen was the boat's registration status. Although she had been donated to the college, she did not carry papers. Either she had not been registered or someone had lost the papers. A two month-long back-and-forth with the previous owner finally yielded the necessary bill of sale and a very straightforward trip to the DMV.

"Just bring a rubbing of the HIN number from the transom, and a photograph of the boat, and the HIN number," they said. We got away without having to bring the actual boat. This was a real request at one stage, I kid you not.

In hindsight, registering the boat should have been my very first job, as the previous owner would have been liable for the costs of removing her from the beach and would have been happy to sign her over at that stage — a lesson learned the hard way.

Having secured a mooring in the perfect harbor of Oyster Bay, and after making sure all the rigging was sound, it was time to see if *Ruby Deux* would swim. She sat happily with the slings of the travel lift under her as I checked the through-hull fittings for leaks. Then I started the engine. It revved and ran. Then, after a mighty whoosh of steam burst from the cockpit locker, I switched it off. The rubber tube between the raw-water pump and block decided to split and spray salt water over the exhaust, hence the steam. It took the rest of the day to replace it as it was (as is typical) almost completely inaccessible. Point noted, I thought.

The next day was a perfect early-summer day and *Ruby Deux* motored down the cut and out under the Throgs Neck Bridge. A light breeze wafted from the Connecticut shore and, as we made sail, there came that sublime moment when the sails start to pull and the motor falls silent. It felt like heaven. She was lighter than I had thought and she picked up speed well, even under her well-used canvas and her hand-me-down asymmetric cruising chute.

Since then, I have added an inner staysail stay 3 feet aft of the stemhead that allows me to set a smaller sail to balance the reefed main. My now wife (yes, even after all that) and I re-covered the cushions with Sunbrella material, which makes her interior feel much better. I constantly update the safety equipment and I even carry a parachute anchor because you just never know when the boat gods might decide to have a little fun.

Eric Holohan is a Westlawn graduate, naval architect, yacht designer, a Lloyds-accredited marine surveyor, and an ABYC master technician. You can contact him at <http://www.holohanmarine.com>.

Simple hatch screens

Creating a bug-free zone down below

by Chris Ferro

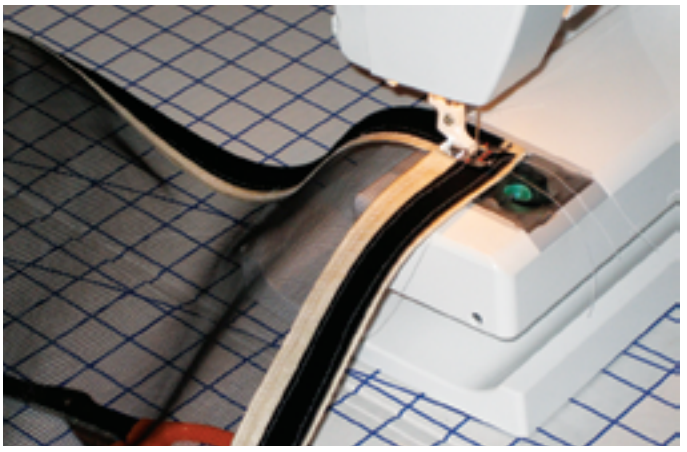
When you're anchored in a marshy cove, it's important to keep the bugs from invading the confined space belowdecks. Even if they aren't the kind that bite or sting, once they get in they may have some trouble getting out, becoming annoying captives whose incessant buzzing can ruin a quiet meal or a night's sleep. A sailboat's hatches allow air to flow below, but if they don't have screens, they are also an open invitation to bugs. To solve this problem, I decided to make screens for the two hatches in my 30-foot sailboat. To keep the project simple, I planned to attach the screens with Velcro.

After measuring the hatches, which are different sizes, I cut two pieces of fiberglass screen, along with eight 3-inch strips of fabric for trim — four per screen. I folded the frayed cut edges of the strips inward to hide them, then folded the strips

A Velcro tab holds the rolled-up screen at the ready but out of the way until it's needed to keep out invading insects.

A sewing machine, simple tools, and readily available materials are all it took to make a pair of hatch screens.

After cutting the fabric strips, Chris folded the cut edges inward, then ironed the folds to set them.



Chris sewed the fabric strips to enclose the edges of the screen material, then sewed the Velcro to the fabric.

The finished screen, attached to Velcro glued to the hatch surround, lets in light and air but denies entry to bugs.

in half, so the screen would be sandwiched inside, and ironed all the folds to set them.

Using a sewing machine provided by my sister-in-law, I sewed each strip of fabric onto the screen, creating about a 1-inch trim around the perimeter. I then cut the Velcro and sewed a strip onto each of the four edges. Since no nearby store had enough one-sided Velcro, I used the more expensive double-sided kind. Don't try sewing the "sticky-back" kind; you'll gum up the needle and make it difficult to sew.

There were already thin strips of Velcro glued around the insides of the hatches on my boat, left there from screens that had long since disappeared (the boat is 25 years old), so once I had the screens completed, I just stuck them into place. On one of the screens, I added two Velcro tabs that can be used to secure the screen when it's rolled up.

Overall, this was a remarkably fast and easy project that cost me about $30 in materials and a couple of hours at the sewing machine.

Chris Ferro and his wife, Shannon, explore Chesapeake Bay aboard Vita Brevis, *their 1983 Seidelmann 30T. The boat was a "fixer-upper" when they bought her, but now, after four years of work . . . she still is.*

Precision drilling

A better way to mount deck hardware

by Jerry Powlas

Jerry makes a simple punch by turning a machine screw with a screwdriver while grinding its tip, above. Pressure from the vise holds the screw firmly in a split nut, left.

No doubt the builders who installed the original deck hardware on your boat took the easy way, and later owners who added further hardware probably did the same. I have not spent a lot of time on really high-end boats, but I've observed that on the average good old boat, the methods employed were often too simple and the quality of workmanship was dismal.

It would take a chapter in a book to explain how to do a really high-quality job of mounting deck hardware, but it all begins with a pattern of holes. If you can transfer that pattern exactly from the item of hardware to the deck where it's to be installed, you're off to a good start.

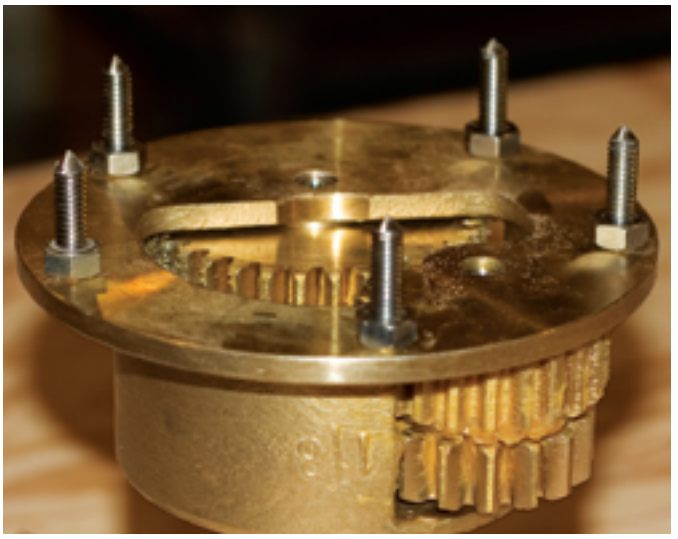
Any fitting with more than two mounting holes may already have a problem built into it, and seemingly identical parts may not be interchangeable. We expect that any wheel on our car can be put on any corner of the car and can be mounted in five or six different positions relative to the studs. Furthermore, those same wheels can be likewise mounted on a few million other cars with equal success. This kind of standardization has made us accustomed to interchangeability in our lives, and we assume it exists in most places. Be careful here. Interchangeability does not come with all deck hardware.

Winches illustrate this point well. Some winches are interchangeable, but many are not. Many cannot even be rotated around seemingly symmetrical hole patterns because the patterns only *appear* to be symmetrical. This lack of symmetry and interchangeability makes it necessary, when removing deck hardware, to label each item as to its original location and also as to its orientation on its mounting holes.

This is not a problem rooted in the past. Two brand-new Lewmar 30s on my workbench are not interchangeable in any respect. The one smaller Anderson 18 seems to be symmetrical about its six mounting holes and comes with a paper pattern for drilling the holes, so maybe these winches are interchangeable. Until you prove otherwise, however, assume that *no* piece of deck hardware is either symmetrical or interchangeable with its apparent twin. Each hole pattern will be unique.

A recipe for drilling errors

The typical method for installing deck hardware is to place the part on the deck and use the holes on the part as a guide for drilling the mounting holes in the deck. This never works very well, although the technique can be



Jerry's five punches are secured into the base of the winch in guaranteed alignment with the holes in the winch base, far left. With the winch in position, Jerry raps each punch with a nail set to transfer the drilling pattern to the backing block, left.

salvaged by drilling excessively large holes to compensate for the errors it introduces.

First, the drill point is ground at an angle, so the drill is not constrained by the part until the hole is already started. Further, the fitting often has oversized holes that are countersunk for flathead screws, so it makes a very poor drill guide anyway. Drill five or six holes in this manner for mounting a winch and they will need to be grossly oversized if all the screws are to fit.

A better way is to make a set of punches that will allow you to center-punch the deck with precision. The base of my winch was drilled for five fasteners, so I needed five punches.

Precision with punches

Take ordinary flathead machine screws, the same diameter as the fasteners you will need for the part you're installing, and make punches out of them by grinding the end of each one to a point. To ensure the punch center is at the screw's axis, mount the screw in a nut held in a vise and rotate the screw with a power screwdriver while you grind the end.

If you are working with a long screw, you can use two nuts in the vise to keep the screw centered. If the screw is short, you can use a split nut — a nut cut halfway through lengthways — and tighten it with the vise to grip the screw more tightly.

Make the split nut by flattening a point of the nut with a file and, with a hacksaw, sawing through that flat. The reason for not sawing through an existing flat on the nut is that you want the cut to be parallel to the flats you clamp in the vice. You will appreciate having a collection of split nuts for other purposes, such as chasing threads after you cut off a screw or bolt to a shorter length.

When you grind these points, try to make each pointed screw the same length. Start with screws of the same length and grind until you've formed a point. The points need not be pin sharp; you want to make a center punch, not a needle.

Mount the pointed screws on the hardware item and lock them tight with nuts underneath. Both the countersink and nut-bearing surfaces should be clean. Position the hardware on the deck in the exact location you want to install it and use a fine-tipped punch like a nail set to punch each screw point into the deck. Take care that the part does not move as you continue around the bolt circle.

A center drill provides a nice way to enlarge the hole concentric with the center punch, but a brad-point drill will work as well or, in many cases, better. Always start with a small drill and increase the hole size in at least two steps. If you have access to a drill press, make some drill guides out of wood or plastic to help you keep the drill perpendicular to the deck's surface.

There you have it: a hole pattern that actually fits the part. This method is so precise that you can mount hardware that has five or six holes and actually tap threads into the base material and all will fit up very well.

There is much more to mounting deck hardware. The deck must be strengthened and sealed against water entry and the backing block below must spread the load. Grist for another article.

Jerry Powlas brags that he has cruised halfway around the world twice (same half each time) courtesy of Uncle Sam's Navy. Later he discovered sailboat racing and got into Flying Scots in a big way. He didn't discover cruising sailboats until he met and married Karen Larson. Together, these two founded Good Old Boat *magazine in 1997.*

Adjustable bracing

Simple, sturdy props for those tricky jobs

by John Cochran

Because some of her previous owners had made a habit of not sealing holes they drilled in the deck, I replaced the plywood under the deck of my 1966 Coronado 25. I needed sturdy battens to push deck and new plywood into position and hold them in place while epoxy cured.

I was following instructions: "Brace in position with a batten until the adhesive cures." Hah! Easier said than done inside a boat when many pieces need to be braced. Each batten has to be cut to the right length. Then, after a few uses, there will be plenty of sawdust and lots of short lengths of batten.

My local big-box lumber store did not have the 2 x 2-inch stock I wanted, so I ended up with 2 x 3-inch studs that I cut to length. These were *very* sturdy but, when I tried to use them for the second time, they were *not* the right length. My attempts to reuse too-long or too-short battens resulted in fallen props and iffy epoxy adhesion. To get the job done, I needed a seemingly infinite number of lengths.

While I usually do things the hard way, sometimes (rarely) a good idea pops into my head.

A ripping plan

I used my table saw to rip the 2 x 3s in half along their length, making 2 x 1½s. Using self-tapping screws to fasten two (sometimes three) pieces together, I could adjust the length as needed to fit the bracing space. By using only one screw for each piece of wood, I had a prop I could easily and quickly adjust.

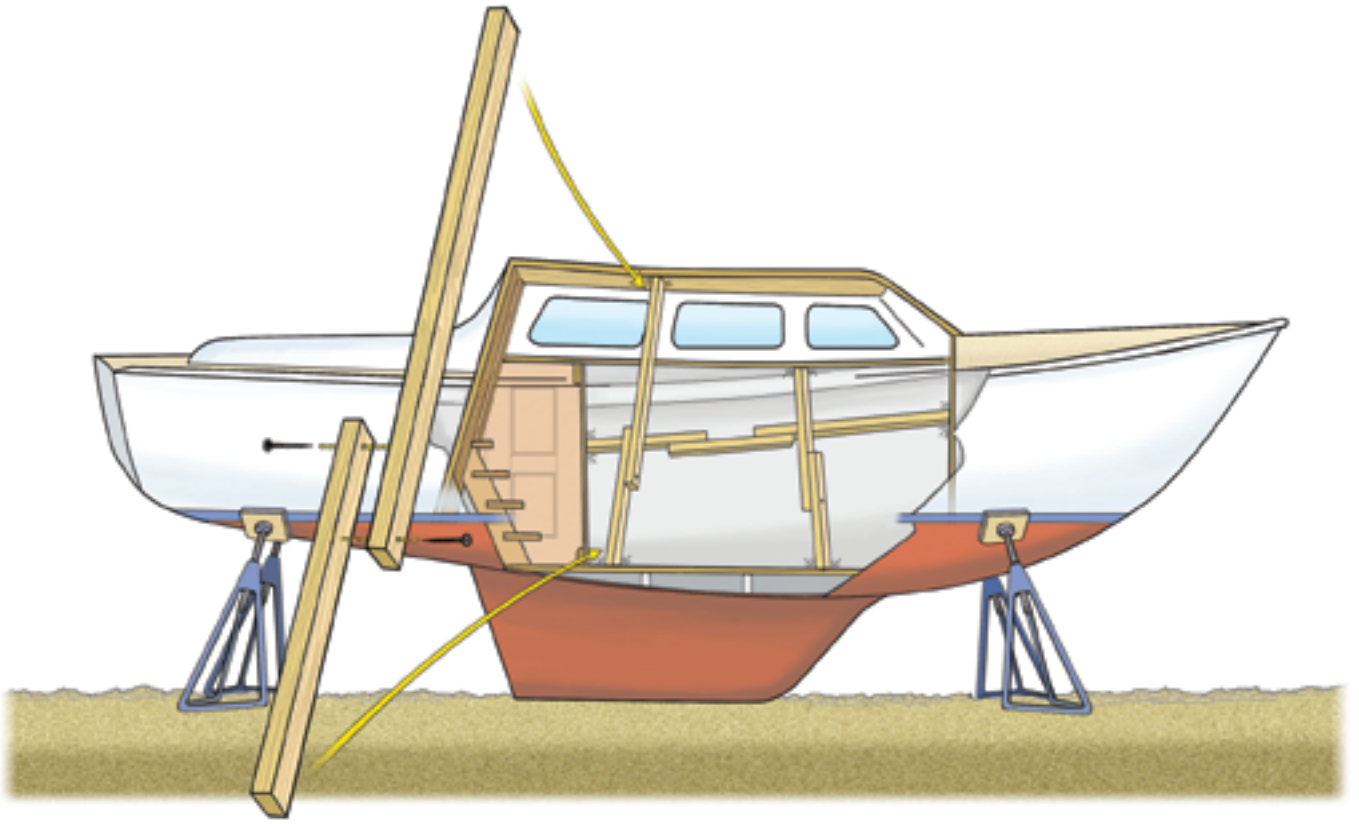
The wood to use is governed by cost, availability, and the amount of flex you need or can tolerate for the task. Select an appropriate size and type of wood. A 2 x 3 stud of soft pine was adequate for my maximum lengths between 2 feet and 5 feet. These studs were strong for forcing plywood into place, there was little flex, and the screws didn't split them easily. If you need less sturdy battens, you could probably use 1 x 1 trim stock for shorter lengths; I fear wood smaller than that may split too easily.

Select a sharp, self-tapping screw like a drywall screw. I prefer Phillips-head screws. The screw needs to be long enough to pass through one piece of wood and penetrate about half to three-quarters through the second piece of wood.

You should also have a reversing cordless drill with a drill bit slightly smaller than the screw-thread diameter. A Phillips-head screwdriver bit makes child's play of assembly and adjustments.

It's all in the overlap

Measure the longest length you need to span and add the overlap you think is appropriate given the batten material you're using. Assume your maximum distance to span is 4 feet and that you need a 1 foot overlap. Any combination of wood pieces 5 feet or more in length can be used: a 3-foot piece and a 2-foot piece or two 3-foot pieces (just increase the overlap). Through one end of each piece, about an inch from the end, bore a hole that will be a snug fit for the screws; you want the screws to be able to give a bit when they're tightened into the other piece of wood but not so loose that they will fall out. Tighter is better than too loose. The purpose of drilling the



FRITZ SEEGERS

hole is to prevent the screw from splitting the wood.

Position two pieces of batten so the two ends with the screws will overlap and the screws can be run through both battens. Hold the two pieces together and extend them so the length is just right (you can use clamps while you're doing the test fitting). Within a couple of tries, you'll know what lengths you need for the job and how much to overlap them.

Screw the two pieces together, and your adjustable batten is ready to use. Wedge it into position to hold the work in place. To reuse the stud pieces, unscrew, reposition, swap for other lengths, and screw them back together for a new-length batten.

"To reuse the stud pieces, unscrew, reposition, swap for other lengths, and screw them back together for a new-length batten."

Now you know why I named my boat *An Education* — she taught me a lot.

John Cochran has sailed Chesapeake Bay from time to time over the past 20 years. Several years ago, the presenter at a pre-retirement seminar John attended, said, "Don't forget your dreams." John listened and is now looking forward to more sailing aboard his retirement project, a good old 1966 Coronado 25 that is in need of extensive renovation.

Boats

Albin Vega 27
1973. Bristol! Complete restoration and refit '03-'05. Beta Marine 13.5-hp diesel engine installed '05 w/25 hrs. All sails new or lightly used; 2 mains w/reefs, Furlex RF, working jib, jiffy reefing. All new headliner, battery charger, lockers, stove, interior and cockpit cushions, 110 panel wiring, and radio/CD player. Seakindly and seaworthy yacht built to sail the world. Draft 3'10", beam 8'1", displ 5,070 lb. Harbor Island Marina, Solomons, MD. $12,500 firm.

SOLD!

Allen Whiteside
awcpamba@verizon.net
540-898-5198

Soverel 28
1962 classic yawl. Wonderful, comfortable sailing boat. Everything new or updated. 20-hp Westerbeke diesel, new mainsail, sailcovers, and cockpit cushions last year. Sleeps 4. Head, galley, good headroom in cabin. Lots of sails. On Lake Champlain. $12,500.

Nancy Brogden
nancybrogden@vermontel.net
802-436-2785

Allmand 35
1982. New set bluewater sails only 3 years old, almost unused. 24-hp Universal diesel runs well. Extremely solid hull and deck, middleweight cruiser-type boat w/5'2" draft, 15,000 lb. Bought boat to retire knowing I would need to replace interior. Removed most of interior and unable to finish project. Boat was rebuilt 5 years ago with some new electronics and A/C that has never been used. $11,000.

Greg Greer
ggreer4@carolina.rr.com
901-734-9387

Yankee 30
1973 S&S design. 3,000 hrs and more than $35,000 spent in total restoration. 21-hp Universal diesel, new sails, all new hardware. If you like the reissued dayboats, you'll fit right in for hundreds of thousands of dollars less and a little more in accommodations. Insured for $65,000, survey replacement at $150,000. Turnkey. Stored inside. Must see. Best offer over $38,000.

Jason
516-660-7392
631-421-4473

Kaiser 26
1972 full-keel sloop. LOA 27'6", LOD 26', beam 7'10", draft 4', displ 6,200 lb, ballast 2,700 lb. Sleeps 4 w/6' headroom. Boat and sails good cond. Solidly built by John Kaiser, Sr., of Wilmington, DE. Lovely, quick, and comfortable sailer. In Brookville, ME. $10,000.

Dorie Meltreder
207-326-9676

C&C 38 Mk III
1986 racer/cruiser sloop. Classic C&C design. Original sails, extra jib and gennaker. Completely refurbished interior. DuPont Imron plus clear-coat protection on hull. B&G instruments. Upgraded electrical, high amperage alternator and inverter. Electrically operated head, hand-held shower. Galley with Hillerange propane stove, refrig/freezer, double sinks, plenty of storage. Excellent liveaboard and/or racing boat. On Little River, SC. $59,900 OBO.

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

Pearson 33
1986. Always freshwater. Beautifully maintained. Yanmar 18-hp, 1500-watt inverter/charger w/ Heart interface, new type 31 batteries '08, AC/heat. Teak hatch screens, new A/B refrig '08, Garmin 492 GPS '07. Head replaced '04. Bottom coated w/ Interprotect '94. Full winter canvas cover. Steel cradle, much more. In Sandusky, OH. $44,000.

David Dickmeyer
deendave33@msn.com
260-415-7474
260-485-2002

Tripp Lentsch 29
1963. Hull #7. Rare Bill Tripp-designed classic (see article Nov. '06). Built in fiberglass by De-Vries Lentsch. Well maintained and upgraded. Awlgrip red hull. Awlgrip/polyurethane deck. 4 berths. D/S, radar, Autohelm, new VHF. ST winches, RF jib. All sails, including drifter and spinnaker w/pole. Holding tank, Atomic 4. Very able and attractive cruiser. In CT. $20,500.

Ed Holahan
203-367-3598

Tartan 27
1975. Venerable Sparkman & Stephens design. Sailaway cond. We've upgraded to a larger vessel. Well-loved and maintained w/numerous recent upgrades. Since '01: new North Sails main, RF, lifelines, gas tank, centerboard cable, ports, running and standing rigging, and more. Cruised extensively around Cape Cod. $10,500.

Sue Haley
withal@comcast.net
508-255-8569

Chappiquiddick 25 catboat
1979 Ted Brewer-designed GRP Cape Cod catboat. Ready to cruise. 6' headroom, new Oceanus tan gaff main and 3GM30 Yanmar diesel. Includes 200' of chain and CQR anchor, bow and cabintop windlass, galley, 2-burner stove w/oven and sink, cockpit mounted Garmin GPS and compass, Fathometer, enclosed head w/Lavac WC. Dodger, Sunbrella cockpit and saloon cushions. Mattapoisett, MA. $35,900 or will consider trade for trailerable 18'-20' GRP catboat w/tabernacle (hinged) mast.

Cal Perkins
508-758-4740

Vancouver 25
1983. Taiwan-built pocket world cruiser w/beautiful lines. Good functional cond. 7,400-lb, full keel, Yanmar 2GM, Bruce and CQR anchors on twin bow roller, tiller, good sails, Profurl, full standing headroom in cabin,

enclosed head, pressure water, cabin heater, comfortable double berth plus 2 singles, 6 opening bronze ports, Autohelm, boom gallows. Recent standing rigging. Set up for singlehanding. In Deale, MD. $18,000. www.zzzdocs.com/Boats/Dolphin.aspx

Giles Morris
Giles.Morris@gmail.com
703-470-3180

Tidewater Weekender 25
1969 Sparkman & Stephens-designed fixed-keel sloop (3.5' draft). A rarely seen full-cabin version of the highly regarded Rainbow sloop.Very user-friendly; practically sails itself. New red drifter, almost-new 4-stroke OB, new stereo, AP, AGM batteries, solar vents, gallon of bottom paint, new bronze winches, covers, boomkicker, genoa, jib, mainsail in good cond. No trailer. Carlyle, IL. $2,900.

Charles Nye
cnyemd@yahoo.com
618-281-8953

Ericson 30
1981. Strong, sturdy boat, always ready to sail. 4' draft, WS, RF, 16-hp diesel, spinnaker and pole, updated interior, electric head. We like it so much we're moving up to another Ericson. In Baltimore, MD area. $17,500.

Kathy Lindner
k.lind@verizon.net
301-643-8853
301-622-5463

Islander 32
1977. Beautifully maintained Robert Perry design cruiser/racer. On Great Lakes entire life. North main w/Dutchman, 155 and 130 RF genoas. New upholstery, Raymarine SeaTalk system chart plotter/radar/GPS/ST60 Wind/Pathfinder Smart Heading System, refrig, Atomic 4 engine upgrades, and Flex-o-Fold prop, all in '05-'08. Marquette, MI. $34,200.

Paul Essinger
pessinger@tds.net
906-892-8238

Rhodes New Weekender 39
1946 wooden hull, sheathed epoxy/fiberglass, aluminum mast and boom, diesel engine, head, pressure water, furling jib and main, sleeps 4. Hull good cond. Seakindly. In Staten Island, NY. $35,000.

Mary Jorgenson
m.jorgenson@verizon.net
718-967-9147

Lazyjack 32
1980 Ted Hermann. 596 hrs on new Volvo 20/20, AC heat pump/AC, refrig/freezer, H/C pressure water, RF genoa, clubfooted staysail, new foresail, mainsail, new sailcovers, '08 Bimini, much more. Sister ship to Don Launer's *Delphinus* in *Good Old Boat* Jan. '06. In Lanoka Harbor, NJ. $35,000.

Hank Toft
hctoft@comcast.net
609-693-0468

Captiva 27
1987. Sloop-rigged, two owners. Exc sailing boat, good cond. 18-hp Yanmar IB diesel, tandem-axle trailer, 3'7" draft, 6 opening ports, 6'2" headroom, 155 genoa new '02. Bought larger boat, motivated to sell. Pengilly, MN. $16,500.

Gary Miller
smiller7616@yahoo.com
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Pearson Triton 28.5
1966. Hull #411. Total restoration, inside and out. Strong Atomic 4. Very good sails: main, jib, genoa, spinnaker. Hood furling, Harken traveler, Lewmar 2-speed winches, Garhauer vang. AC refrigeration, always freshwater sailed. Nicest Triton you will see. In Chicago. $12,500.

Larry Dalsin
ldalsin@sbcglobal.net
708-707-1666

Tartan 30
1977. Sailaway cond in the Apostle Islands on Lake Superior. Major upgrades '06: skeg-hung rudder, wiring and panels, tiller w/Simrad AP, Sobstad main. In '08: new custom dodger. Refrig, cradle, winter cover. This freshwater boat deserves a good home. Bayfield, WI. $21,000. http://webpages.charter.net/shenanigans

Bill Schmitzer
schmitzer@charter.net
715-651-5889
715-491-7442

Rhodes Ranger 29
1961. Pretty and well-cared-for classic that really performs. Easy to sail single-handed. Original bronze deck hardware. Standing headroom in bright cabin, sleeps 4. Spruce spars, good sails including '05 genoa. Has safely taken us on extended cruises along the Maine coast and is ready for many more. In Lamoine, ME. $10,000.

Nicholas Brown
npbrown@adelphia.net
207-422-9096

Flicka 20
1981 Pacific Seacraft. Bronze and teak classic. 8-hp OB. Extensive upgrades, hard dinghy, and cradle. Bottom painted, teak bare. Two-boat owner. Datasheet, photos avail. In Long Island, NY. $17,000.

Ken Deering
ltkd@aol.com
516-376-8888

Lafitte 44
1980. Strongly built seaworthy bluewater cruising cutter, Robert Perry designed. Good sails: main w/Harken batt cars, 2 genoas, cruising spinnaker in sock, storm sails. Yanmar w/low hours, Balmar alt, Max Prop. Good tank capacity fuel and water. Many upgrades and much refit work done (some ongoing). New: S/S ports, cushions. Decks, standing and running rigging refurbished. Dinghy, motor. Bottom just painted. By owner. Long Island, NY. Very good deal at $105,000.

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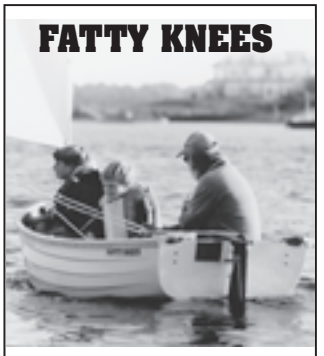

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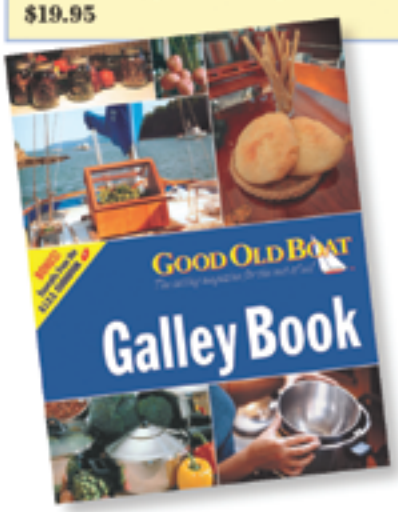

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This charming binnacle houses a hybrid compass showing points (arrows) as well as a 360˚ card. More typically, in the era of points, cards were expressed in four 90-degree segments.

Boxing the compass

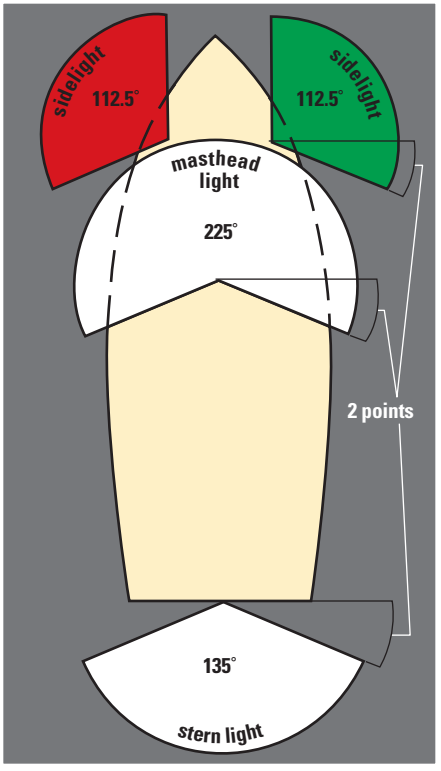
The logic behind the old-time card markings

by Alan Lucas

Boxing the compass was once a very important element of the seaman's art. Before the colorful and geometric compass rose gave way to the bland, plain-white 360-degree card, around the middle of the last century, calling off the 32 points — clockwise and counterclockwise — was something of a sailor's mantra.

Even now, the 32 points of the compass have not entirely disappeared from use; their legacy still resides in the International Rules for the Prevention of Collision at Sea, where they are invoked to describe required arcs of visibility for navigation lights. Red and green sidelights, for example, must be visible from straight ahead to 22½ degrees abaft the beam. But *why* that extra half degree?

Before compass cards were marked with degrees, they were divided into 32 points. One point is therefore 11¼ degrees (11˚ 15' or its decimal equivalent, 11.25˚). Sidelights have to be visible two points abaft the beam, that's 22˚ 30' aft of the beam. Thus, the total visible arc of each sidelight from straight ahead to two points abaft the beam is 10 points, or 112˚ 30' (or, in decimal, 112.5˚). Because a masthead light scans the arc of both sidelight arcs, it is visible through 20 points, or 225˚.



The visible arcs of navigation lights were originally expressed in points, with residual half-degrees being their legacy. For example, side and masthead lights must be visible 22.5 degrees abaft abeam — that is 2 points aft of the beam, each point being 11.25 degrees.

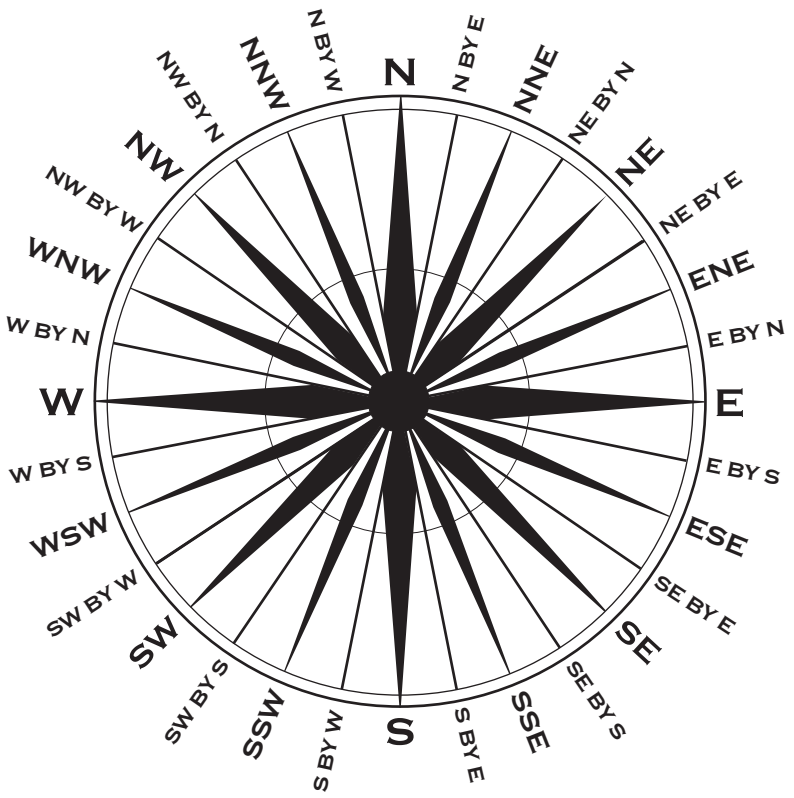
The stern light's arc of visibility is also based on points, this being from 2 points abaft the beam on both sides, thus scanning a total arc across the stern of 12 points, or 135˚. This completes the full 360˚ circle of light.

Easier steering

Steering by points was relatively easy because every 45-degree arc was divided into four parts, each obvious with its bold colored arrow or elongated diamond projecting from the compass card's center. The 32 points were the total of four cardinal points indicating North, East, South, and West; four half cardinals showing NE, SE, SW, and NW; eight intermediate points, NNE, ENE, ESE, and so on, plus 16 by-points, so named because the word "by" always preceded them, as in N by E.

The points compass card almost certainly evolved from a wind rose associated with the Phoenicians who navigated, we believe, by their ability to recognize the individual characters of the eight prevailing winds of the Mediterranean Sea. These were then related to star positions according to season. Though static, a wind rose would have been an important navigational tool in those days, and it's easy to see how a simple eight-part illustration evolved into a dynamic magnetic compass card with points multiplied four times to increase the precision to which a course could be steered.

Most commercial and recreational vessels still carry a magnetic steering compass as a vital backup tool for when the electronics crash and hand-steering



One point is 11° 15' (or, in decimal terms, 11.25°) and 32 points total 360°. Compass cards with points clearly arrowed are much easier to read when hand-steering in poor light. The points were also called "rhumbs," and the naming of all points in sequence is known as "boxing the compass." Sailors worth their salt could box a compass clockwise and counter-clockwise starting at any given point.

becomes obligatory. This is the moment when we mourn the scarcity of the old colored compass rose whose bold points were so much easier to see in poor light than today's bland white 360-degree card.

Toward east and west

Prior to all compasses being rationalized to 360 degrees, in some navies its four 90-degree segments were graded from 1 to 90 degrees toward east and west from north and south. In those days, bearings were clumsily stated, such as "south 10 degrees east" (today's 170°) or "north 50 degrees west" (today's 310°). For the average merchant seaman, courses were easier to follow when expressed in points of the compass, as in, "steer east-northeast" (ENE) or "steer west-southwest" (WSW).

As well as being kept alive in the arcs of navigation lights, points also remain embedded in the mariner's spoken language, often without our realizing it. For instance, when you boast that your boat "points high" (or lament that it doesn't "point" at all), you are comparing its performance to others using a forgotten nomenclature. An old world sailor might have said his ship sails "six points to the wind." Today, we expect to sail at "four points to the wind," or at an angle of 45 degrees to it.

As the magnetic compass disappears into small electronic boxes, I suspect the word "point" will stay with us, even if it does seems utterly pointless. But I, for one, would welcome a return to the colorful 32-point rose, not out of teary sentiment but rather for its card, which can be seen so easily on a dark and battery-less night.

Alan Lucas, an Australian from New South Wales, has been cruising for 40 years, primarily south of the equator. He's authored several Australian cruising guides.

Celestial confusion

An astronomical illiterate seeks a star to steer by — any star

by Michael Kilday

ALYSON KILDAY

I've been a sailor all my life. One of the fundamental skills that sailors are supposed to possess is a knowledge of the stars. I am apparently the exception to that rule. For me, stars have always been little bits of light in the night sky that I futilely wish upon. This was a particular shortcoming when I began bluewater sailing because we had only celestial navigation to guide us from one place to another.

I remember taking a celestial navigation class in the 1970s. The instructor stood in front of the class pointing to a large chart of the night sky that showed all the constellations and their key stars that we were supposed to use for taking star sights. He could just as well have been pointing to the stains on the carpet for all the good his chart and explanation did me. I spent the entire four-week class trying to make a gaggle of stars look like twins, a scorpion, or a lion. The truth was I could have made anything I wanted out of those stars. Want a bunny? A seashell? A naked woman? Admittedly, the last took some doing but the class was really boring.

Instead, I sailed across the Pacific Ocean using the only objects in the heavens I could identify: the sun and the moon. And I shot the moon before dark so I never did need to identify a "navigational star." It's a good thing. Otherwise I would probably have missed Asia.

Elusive Big Dipper

I spent most of my night watches trying to find the Big Dipper, because if I did I could then identify the Little Dipper and the North Star: a trisect giveaway. Venus didn't count, since it always appeared over our bow and, until full dark, it was like following a street lamp.

Night after night, my star illiteracy haunted me. On any given night, I found a hundred candidates for the Big Dipper. And later, I learned that the North Star is not actually due north. What? Did they mention that in my class? Maybe while I was conjuring up the naked lady.

Now, many years and sea miles later, my wife, Donna, and I are serenely anchored aboard our little cutter in a lovely bay in Grenada, West Indies. Above us every night is a plethora of stars. While we have a sextant aboard, we navigate these days with GPS plotters and computers. For us, the stars have become what they have always actually been for me: another pleasant after-dark diversion.

Each evening, I sit in the cockpit and look up at the stars and identify the various constellations for Donna. Since she has no idea and little interest in which stars make which constellation, and since she also has nearly blind trust in my judgment (otherwise she would *never* have gone offshore with me in the first place), I blithely point out various clusters of light and tell her the "name" of that constellation.

Rum and astronomy

Since I once heard that Orion's Belt is near the equator, I always choose two or three stars in a straight line in the southern sky and tell Donna that they are Orion's Belt. For the Big Dipper, well, that depends on how close we are to finishing our nightly single ration of rum-and-Coke. If the big jelly glasses are nearly empty, I just point to the sky and announce firmly, "There, can't you see it?" If we are just getting started, I look at our compass, find the North Star (almost any star in the north works great for this exercise), look off at an angle and find something that looks like a bucket. And *voilà*! We have the Big Dipper. When she asks for the Little Dipper, I tell her it's not visible in this hemisphere.

Naturally, Donna knows I'm making all this up. But she doesn't spoil it because she likes the Bunny and she knows how much I look forward to finding the Naked Lady.

Michael Kilday *and his wife, Donna, are currently circumnavigating the Caribbean on their 36-foot steel cutter. Michael has been sailing for 30 years in the Pacific, Atlantic, and Caribbean . . . never with much help from the stars above.*

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