Good Old Boat

The sailing magazine for the rest of us!

July/August 2007
Issue 55
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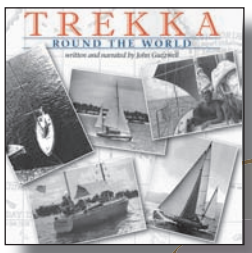

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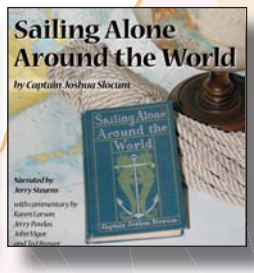

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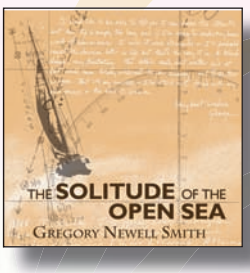

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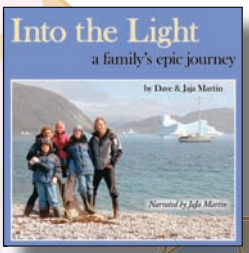

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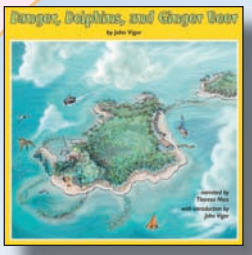
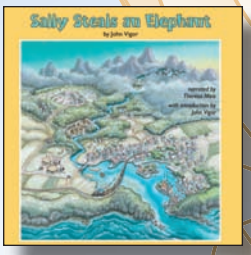


John Vigor:
Danger, Dolphins, and Ginger Beer



John Vigor:
Sally Steals an Elephant

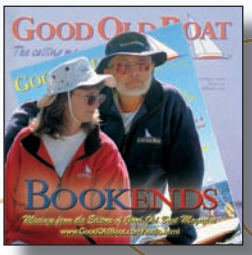
Thrills, chills, and suspense* at sea:

(*Censor's note: These books are strictly for adults only.)

Jule Miller:
A Voyage Toward Vengeance

Geoffrey Toye:
Telegram from the Palace

Quick and short musings by the editors:



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About the cover…
Mary Jane Hayes took this golden photo of Peter and Paula Koehler's *Paulie's Folly*, a Catalina 30, when the Koehlers visited Scituate, Massachusetts, in 2000.

For the love of sailboats

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Speaking seriously

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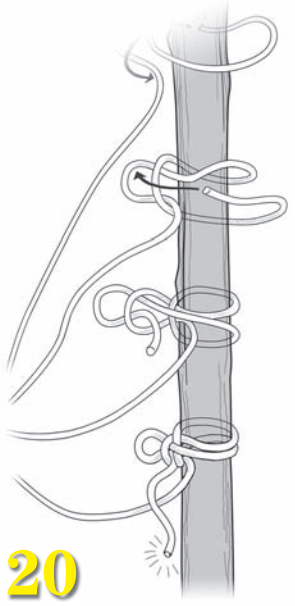

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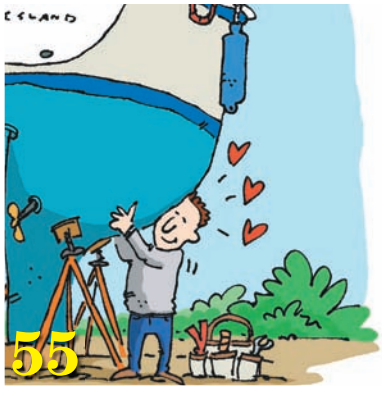


What's more

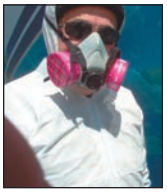
Our contributors

Gregg Nestor (*Allmand 31*, Page 6; *Engine lubrication*, Page 13; *Simple solutions: Fuel-can caddy*, Page 68; *Simple solutions: More galley space*, Page 70), a contributing editor with *Good Old Boat*, has had a life-long interest in all things aquatic. Gregg and his wife, Joyce, cruise Lake Erie aboard their Pearson 28-2 and also trailersail an O'Day 222. He has just completed his second book: *Twenty Affordable Sailboats to Take You Anywhere*.

Richard Smith (*The joy of rowing*, Page 10; *Quick and easy: Companionway vent*, Page 74) has owned and built several boats, sailing them in the Irish Sea and Puget Sound. These include an Atkin Red Onion sloop, a 30-foot Alan Pape steel cutter outfitted from a bare hull, an Atalanta 26, five dinghies, and an Ericson Cruising 31.

Dale Tanski (*Insulating the hull*, Page 15) soloed at the age of 10 in his family's Sunfish. Forty years and way too many boats later, he is refitting *Maruska*, a Pearson 365 ketch, to cruise with his wife, Sharon, and their two youngest, Alden and Morgan. Dale also races a J/22 with the oldest children, Rian and Eric, in Buffalo, New York.

Deane Holt (*Two firsts for the Tartan 34 Classic*, Page 17) has spent most of his life on, near, and under the sea. After serving in the U.S. Navy submarine fleet, he took a degree in marine biology and used it during a Peace Corps tour in Venezuela and with the Office of Naval Research and the National Science Foundation. He delights in sailing on the Chesapeake Bay with his life-mate, Grace, on their Tartan 34 C, *Aries*.



Chris Verra (*Flakes of history*, Page 19; *Allan Nye Scott*, Page 21) sails the Great Lakes along with his wife, Debbie, and their four daughters. Home port for their 1984 Endeavour 35, *Topanga*, is Belleville, Ontario. Chris runs an outdoor goods wholesale business when he isn't writing, sailing, or working on good old boats.

Geoffrey Toye (*The highwayman's cutaway knot*, Page 20) lives in a beach house near Cardigan on the west coast of Wales. He's been involved with small craft for more than 40 years. A writer and journalist, he has published several books. A couple of years ago Geoffrey published *Telegram from the Palace*, a work of sailing fiction full of conspiracy and intrigue. *Good Old Boat* has just completed an audiobook production of this novel.

Jim Shroeger (*Inexpensive cooling*, Page 25) is a retired school teacher (special education and administration). He owned and ran a residential construction business simultaneously with the school career. His special love is woodworking, which has come in handy with a series of boats to maintain. He and his wife, Barb, currently own *Sundew*, a 1978 Watkins 27, which they cruise between Traverse City, Michigan, and the Cheneaux Islands 200 miles to the north.

Beth Leonard (*The bluewater-capable yacht, Part 1*, Page 27) and Evans Starzinger headed offshore from Newport, Rhode Island, in June 1992 in search of a new way of being. As they passed under the Newport Bridge, neither Beth nor their boat had ever been offshore. By June 1995 they were once again sailing under the Newport Bridge. They spent three years ashore rebuilding the cruising kitty and building a boat capable of sailing higher latitudes. In May of 1998, they left aboard their 47-foot Van de Stadt sloop, *Hawk*. This trip is open-ended; their itinerary consists of a list of places they'd like to visit.

Don Launer (*The space-age sailor*, Page 35; *Wind Terminology 101*, Page 40), a *Good Old Boat* contributing editor, has held a U.S. Coast Guard captain's license for more than 20 years. He built his two-masted schooner, *Delphinus*, from a bare hull and sails her on Barnegat Bay in New Jersey.

Ted Tollefson (*Wind Terminology 101*, Page 40) is a graphic designer/illustrator in Brainerd, Minnesota. For 12 years Ted owned and raced scows but was always checking out cruising boats. In 1999 he found and bought a traditional 28-foot Liberty cutter. He gave it a year and a half of TLC. Since then he and his wife, Kris, have been sailing.

Charles Scott (*Solo sailing*, Page 42), a life-long sailor, has singlehanded his Westsail 32 from Michigan to Bermuda and has cruised it extensively in the Great Lakes. A freelance cameraman, he also crews worldwide on ocean-cruising yachts and recently completed his second crossing from Ecuador to Tahiti.

Jule Miller (*A Voyage Toward Vengeance*, Page 44) grew up in Milford, Connecticut, was educated and worked as an engineer, and sailed for many years on Long Island Sound. In 1991 he moved to Nevis, where he lives with his wife, Heide, writes, and sails on the Caribbean Sea. Paradise Cay published his book, *A Voyage Toward Vengeance*, in 2004.

Karen Larson (*Flirting with a Hunter 28.5*, Page 48) didn't become passionate about sailing until she met Jerry Powlas. They bought a C&C 30 soon after they were married and hope to increase their potential range with a trailerable C&C Mega 30, the infamous "project boat."

Ted Brewer (*Hunter 28.5*, Page 52) is a contributing editor with *Good Old Boat* and one of North America's best-known yacht designers, having worked on America's Cup boats, as well as boats that won the Olympics, the Gold Cup, and dozens of celebrated ocean races. He also is the man who designed scores of good old boats…the ones still sailing after all these years.

Kim Ode (*Baking aboard*, Page 53) and her husband, John Danicic, sail *Mariah*, a Cape Dory 36, on Lake Superior. Kim's new book, *Baking with the St. Paul Bread Club: Recipes, Tips & Stories* (Minnesota Historical Society Press), was selected as a finalist for a Minnesota Book Award.

Phillip Reid (*Knowing her inside and out*, Page 55), his wife, Andie, and certain other miscreants sail their 1977 Pearson 28, *Miss Bohicket*, out of Wilmington, North Carolina. They finished a five-year refit in the fall of 2005. When not sailing, writing, or boat-grubbing, Phillip teaches a college history course.

Walt Hodge (*Quick and easy: Sideways clinometer*, Page 72) began his long association with boats at the age of 10, paddling an apple crate across the Ohio River. He and his companion, Janet Perkins, restored and sail a 1977 Ranger 28, *Gilded Lily*, and a 1979 Compac 16, *Short Sheets*.

Lisa Edelsward (*Mystical boat-buying*, Page 84) was born and raised in Canada, where the sailing season is short and the ice skating season is long. Lisa and her husband, Philip Salzman, bought their first boat without ever having stepped on one. Their second boat sails the Caribbean whenever they can get away — preferably in winter.

GOOD OLD BOAT

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55 – VOLUME 10, NUMBER 4
GOOD OLD BOAT (ISSN 1099-6354; USPS 019327)

PUBLISHED BIMONTHLY BY: Partnership for Excellence, Inc.

EDITORIAL OFFICE: 7340 Niagara Ln. N.
Maple Grove, MN
55311-2655
Phone: 701-952-9433
Fax: 701-952-9434

BUSINESS OFFICE: 1501 8th Ave. N.W.
Jamestown, ND 58401
Phone: 701-952-9433
Fax: 701-952-9434
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PERIODICALS POSTAGE PAID AT OSSEO, MN 55369, AND AT ADDITIONAL MAILING OFFICES.

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Knots, the elegant solution

Goodbye to a pocketful of gizmos

by Karen Larson

Call us promiscuous. Jerry and I have been aboard an awful lot of sailboats since we started this magazine. Together, we've written three to five feature-boat articles each year for nearly 10 years. That's 30 to 50 boats!

Every one of those boats has had sail ties on the main. Most of them have been little strips of webbing. Some are elastic. Some have a loop in the end. Some have a loop and a toggle. All are easy to use and simple in concept. If we've been aboard 30 to 50 boats, I'm willing to bet that we've also seen 30 to 50 sail-tie storage bins and cubby arrangements. When the ties are not in use on the sail, they've got to be stowed somewhere aboard…somewhere ready at hand when it's time to drop the sail and head into the marina…somewhere they must be put without fail…a place known to all crewmembers because those ties are so incredibly important to the management of the sails. It has been my observation that no sailor can function efficiently without them.

If sail ties are a no-brainer sailboat accessory, why is it that we've never had sail ties aboard *Mystic*? She didn't have them aboard when we bought her and we never felt the need to add them. Look at it this way: they've never been misplaced in the wrong cubby and we've never lost any overboard. We don't have to imagine lowering our sail if we can't find or have lost even a few of our precious sail ties.

Perfect length

I'm not sure why our arrangement is different, but by the time our mainsail is down, we've got a length of reefing line left over that just happens to be the perfect length (two to three fathoms actually) for frapping down the main with a simple and elegant tying scheme that, I presume, is left over from the days of yore. This line is always available right at the sail, so we don't have to remember to grab a frapping line before lowering the sail. It's quicker to loop this one line around the entire length of sail and tie it off with a half hitch than it is to tie (and later untie) each individual little tie.

There are dozens of other gadgets and gizmos that we, as sailors, have adopted to make something easier to do aboard. Most of these help us avoid making a knot. But they require that we go around with a pocketful of gizmos and gadgets instead. There are a number of clips and snaps used to attach fenders to lifelines, for example. But you can hang a fender just about as quickly with a simple clove hitch.

I've seen widgets that substitute for bowlines, the tautline hitch, and other valuable knots. I've seen hooks and clips for managing a made-up bundle of line so it can be hung in a locker or from a lifeline. These are convenient and easy to use. But it seems to me that the truly elegant solution is to use the knot itself and to skip the widget altogether. That way you don't need a pocketful or a drawerful of things and you won't be at a loss when you don't have a widget immediately at hand or if you drop one overboard.

Call me old-fashioned. Call me traditional. I'll choose the simple and elegant solution every time.

Allmand 31

A spacious cruiser with modest sailing performance

by Gregg Nestor

The relatively small rig is easy to handle, especially with the headsail set on a roller furler. *Mistico,* Oklahoman Skip Hanson's Allmand 31, is featured in photos throughout this article.

Allmand Boats of Hialeah, Florida, introduced its first model around 1965. At that time, the company's product line consisted entirely of powerboats. While it did manufacture small, outboard-powered open and cuddy cabin boats, most of its models were 28 to 34 feet and fitted with inboard engines.

It wasn't until the OPEC oil embargo and associated energy crunch of the 1970s that Allmand, along with a handful of other powerboat builders (Rinker, Bayliner, and Reinell to name a few), began dabbling in sailboats. Eventually, Allmand discontinued production of its powerboat line, concentrating entirely on sailboats during the last few years of its existence.

While Allmand's powerboat line once was quite extensive, its sailboat offerings numbered only three: the Allmand 23, Allmand 31, and Allmand 35. Introduced in 1979 and manufactured until 1985, the Allmand 31 was, and continues to be, the most popular of these models.

The industry-wide recession of the 1980s hastened the demise of many small sailboat builders, including Allmand Boats. Though the company closed its doors in 1985, the family began building powerboats again in 1993.

Design

Walter Scott and T. R. Allmand are credited with the design of the Allmand 31. Coming from a powerboat manufacturer, the overall design was quite conservative, yet still contemporary. The sheer is flat, the bow is slightly raked with a hint of being concave, and the stern is nearly vertical. The cabin trunk is long and low, except for a slight doghouse or small half step up over the main cabin. Underwater there's a shoal-draft cruising keel and a rudder mounted on a partial skeg. According to company literature, the keel and rudder were shaped to NASA (National Aeronautics and Space Administration) airfoil number 84A010, in an effort to produce the least possible drag with the proper lift to compensate for the sideways sail force.

The boat's displacement is 12,850 pounds, giving it a displacement/length ratio of 264. Its generous beam of 11 feet 4 inches and waterline of 27 feet 11 inches result in a spacious interior. This feature alone accounted for most of the boat's popularity, especially with liveaboards. The Allmand 31's wide beam also accounts for its significant form stability.

Construction

Construction of the Allmand 31 is straightforward and fairly typical of the era. The hull is a solid hand-laid fiberglass laminate with an integral keel cavity into which the internal ballast is lowered and secured. Cast iron ballast was used for the cruising version, while a racer/cruiser model was fitted with lead. Lead is preferable to cast iron because of its corrosion resistance as well as its higher specific gravity. Once in place, the internal

ballast was fiberglassed over, resulting in a double-bottom effect. To help carry the concentration of stresses, the hull's laminate is extra thick at the keel sump and at the centerline. Also reinforcing this area are several transverse beams located just above the keel.

Like many boats, the Allmand 31 incorporates a fiberglass pan that defines the major features of the interior. Prior to the hull being removed from the mold, this full-length pan was lowered in place and tabbed to the hull with strips of fiberglass wetted out with resin. This adds additional structural integrity and insures that there is no distortion of the hull once it's extracted from the mold. Plus, it won't rot if subjected to bilge water. The downsides, compared to a wooden interior, are less thermal and acoustic insulation, greater difficulty making modifications, and more condensation on surfaces.

The deck of the Allmand 31 is cored with balsa. This construction technique reduces weight while increasing stiffness. The color of the deck's molded-in non-skid can range from light blue to white or beige. An older boat can usually be recognized by the large stylized letter A located aft on the hull. This graphic was later discontinued.

The hull-to-deck joint is an outward-facing flange. This configuration is more prone to damage from a collision or hard docking than an inward-facing flange, but a one-piece hull with an inward-facing flange cannot be extracted from a mold. The popularity of the outward-facing flange can be explained by the fact that it avoids the two-piece mold. In the case of the Allmand 31, a three-step joining process makes for both a strong and leak-proof hull-to-deck joint. During the process of mating the deck flange with the corresponding hull flange, resin is applied between the two, chemically bonding them. Self-tapping stainless-steel screws (nuts and bolts are considered better) are then drilled into the flange. Once the joint has been chemically and mechanically fastened, the entire length is fiberglassed over from the inside. A vinyl rubrail, snapped over the joint, cosmetically finishes off the joint.

All of the boat's through-hulls are fitted with bronze seacocks. These are part of the boat's electrical grounding system and are bonded with the rudder post and drive shaft.

Deck features

The Allmand 31 has a wide and long coachroof. While this enhances the interior accommodations, on deck it results in narrow, 13-inch-wide sidedecks and a small foredeck. Fortunately, the chainplates are mounted inboard and the foredeck's hardware (single cleat, pair of chocks, chain pipe, and single anchor roller) are clustered together and situated well forward. Though a little tight, there still is sufficient room to maneuver about on deck.

There are three hatches on the cabintop: one over the forward cabin, a second over the saloon, and a slightly smaller one serving the aft cabin. Other features include a molded-in sea hood, a vent over the galley, and four sections of teak handrail. The standard portlight configuration consists of seven opening ports (three per side and one facing the cockpit) and four large fixed portlights. As an option, all 11 could be opening. Even without this option, the standard package provides very good light and ventilation.

The cockpit is T-shaped and measures 94 inches long — plenty of room for a crew of six or maybe even seven. The companionway is offset to starboard and therefore allows the port cockpit seat to be L-shaped, with the short leg along the bulkhead. The starboard seat is straight and has a deep locker underneath. There also is a locker beneath the helmsman's seat. The cockpit coamings average 7 inches high, are slightly sloped and wide on top, and house four cubbies. Wheel steering is standard, as is the teak cockpit table with compass. There are three scuppers to drain water from the cockpit: two aft and one forward. There is no bridge deck.

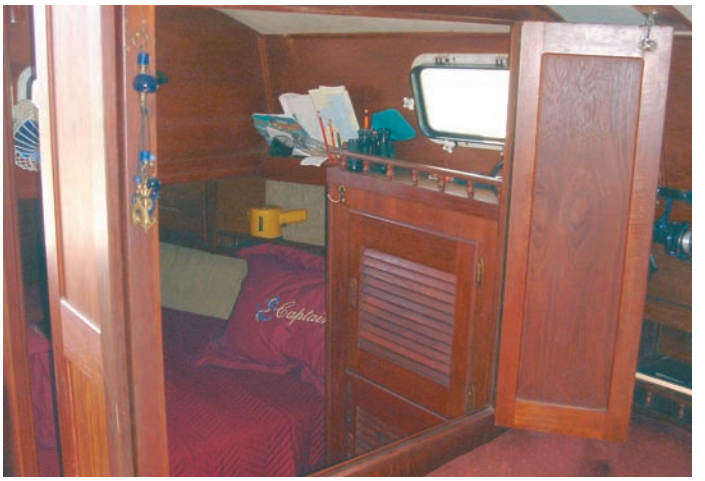
Stainless-steel bow and stern pulpits, dual lifelines with a pair of gates, and a centerline, transom-mounted swim ladder complete the deck features.

General arrangement

Most of the Allmand 31s were built with what is called the tri-cabin layout. This arrangement consists of a forward cabin with a 6-foot 4-inch V-berth, followed aft by a head compartment to port and a pair of hanging lockers to starboard. Situated beneath the V-berth are a 50-gallon potable water tank and several bureau drawers. The forward hatch and a pair of opening portlights provide the stateroom with light and air circulation.

The head amenities include pressurized water, a vanity, marine head with a 25-gallon holding tank, and two cabinets.

The T-shaped cockpit lets the helmsman move from rail to rail to see ahead and to view the headsail for proper trim. The pedestal with fold-out table leaves is fitted with cup holders as well.



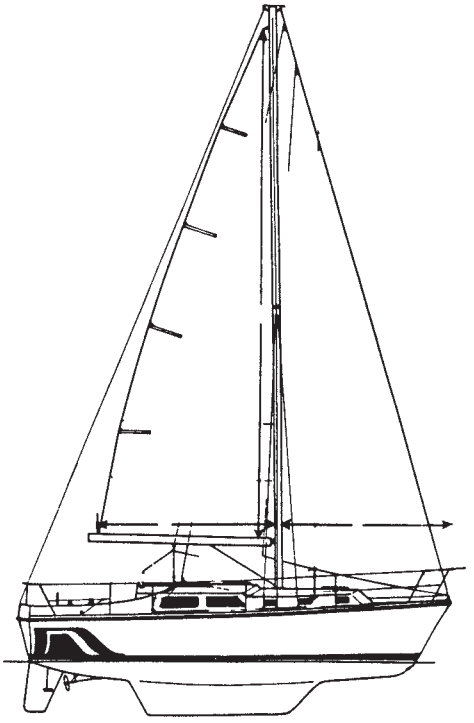
The galley, at left, has all the essentials — sink, gimbaled stove/oven, and 8-cubic-foot icebox, plus compartments for stowing pots and pans and dinnerware. The aft stateroom, at right, in the tri-cabin model is enclosed for privacy, but for anyone prone to claustrophobia, a hinged partition opens the space for improved light and ventilation. The shoal keel, shown in diagram below, is ideal for gunkholing, but compromises windward ability. Note the rudder hung on a partial skeg, the relatively high freeboard, and small rig.

The saloon consists of a U-shaped dinette to port and a straight settee/berth amidships to starboard. The 6-foot dinette comfortably seats four adults. Seating for three more adults can be gained by extending the overleaf of the pedestal table. Lowering the table converts the dinette into a double berth. There's stowage behind and underneath both of the saloon's settee/berths. An overhead hatch, a pair of opening portlights, and a large fixed portlight illuminate and ventilate the saloon.

The boat's U-shaped galley is aft of the starboard single settee/berth. It's a bit on the small side, yet quite functional. There's a large stainless-steel sink with pressurized water; a gimbaled stove; an 8-cubic-foot, top-loading icebox; and several stowage compartments for dinnerware and provisions. There's also a small hanging locker for foul weather gear adjacent to the companionway.

To port is the aft cabin, which features a double berth measuring 54 by 78 inches, a hanging locker, and a fold-down chart table. For light and air there are an overhead hatch, a large fixed portlight, and a smaller portlight in the aft bulkhead that opens to the cockpit. In the tri-cabin version, this area is made "private" by means of a door and a forward bulkhead, with a fold-away upper portion. A limited number of Allmand 31 Mark IIs were produced without this aft cabin enclosure. This opened things up and enhanced the boat's already spacious interior by eliminating a door and a couple of bulkheads. Most boats, however, are of the tri-cabin arrangement.

Almost all traces of the boat's fiberglass construction are well hidden behind teak-veneer plywood and a vinyl headliner. A few early models were touted as being "low maintenance" because they sported wood-grained laminate and a painted overhead. Headroom is a generous 6 feet 5 inches.



Allmand 31

Designer: Walter Scott and T. R. Allmand
LOA: 30 feet 9 inches
LWL: 27 feet 11 inches
Beam: 11 feet 4 inches
Draft: 4 feet 0 inches
Displacement: 12,850 pounds
Ballast: 4,300 pounds
Sail area: 461/485 square feet (cruiser, racer/cruiser)
Displ./LWL ratio: 264
SA/Displ. ratio: 13.4/14.1 (cruiser, racer/cruiser)

The rig

The Allmand 31 is a masthead sloop, whose aluminum spar is stepped on deck with a stainless-steel compression post beneath that sits directly on the boat's ballast. The cruising model's mast height is 44 feet 6 inches, while the racer/cruiser version is 2 feet taller. This equates to a sail area of 461 square feet for the cruiser and 485 for the racer/cruiser (although some reported figures vary). The sail area/displacement ratios for the two are 13.4 and 14.1, respectively. These are quite low (a coastal cruiser typically would have a number between 16 and 17). There are a single forestay, a pair of cap shrouds, fore and aft lowers, and a single backstay. While the shrouds are attached to inboard chainplates, headsail sheeting is to the toerail. Some boats produced later have inboard T-tracks to allow for closer trimming of headsails. A pair of primary winches is mounted on the cockpit coamings. Sheeting for the mainsail is mid-boom and is attached to a traveler and led to a winch mounted on the cabintop. Halyard winches are located on the mast. Jiffy reefing is standard.

The V-berth, at left, is 6 feet 4 inches long and plenty wide. Outboard of the starboard settee, at right, are shelves for books and other stuff, like the starfish and plant on our test boat. There's a U-shaped settee, below at top, to port that converts to a double berth with the lowering of the table. The head, at bottom, is a fiberglass module that is easy to wipe down and keep clean.

The most common auxiliary is the 16-hp M20 Universal diesel. The 21-hp M25 Universal diesel was available as an option. Both engines are fresh-water-cooled and both are served by a 40-gallon fuel tank. Access to the engine is average to below average.

Underway

In a breeze, the Allmand 31 accelerates quickly and carries through the slowest tack. The boat will tack through about 90 degrees without a significant reduction in speed. It is an extraordinarily stiff boat; it balances quite well and exhibits only a small amount of weather helm. For the most part, the Allmand 31 sails almost level. Its best points of sail are off the wind. Its upwind performance is hampered by the combination of its wide beam and shoal draft. The boat also tends to make noticeable leeway.

The small sail area means mediocre light-air performance. Not many Allmand 31s are raced, so PHRF numbers are few. Boats with the standard rig rate between 174 and a whopping 240, while boats with the tall rig average 184. A 1980s-era Cal 31 comes in at 168, and a full-keel Cape Dory 31 at 198. From this perspective, the Allmand doesn't seem like such a dog after all.

The standard auxiliary is adequate to maneuver the boat in most conditions. As is the case with many sailboats, maneuvering in reverse takes a bit of practice.

Resources

<http://www.allmandsail.com>

Things to check out

As you would with any boat that employs balsa as a deck-coring material, sound out the Allmand 31's deck and cockpit sole carefully to determine if any water has made its way in and caused delamination. Although small areas can usually be easily fixed, walk away from extensive and expensive delamination.

Examine the keel cavity for signs of a hard grounding, especially those boats that are fitted with cast-iron ballast. A break in the outer skin can allow water in, causing significant and costly corrosion of the cast iron.

Check out the engine and its installation. While most boats were fitted with Universal diesels, there have been some reports of Ducati and Renault engines. Availability of parts for either of these two exotic powerplants will be an issue.

Spend some time looking over the interior. While normal wear and tear can be expected, abuse and neglect is another story . . . so is inexpert customization!

Conclusion

Many Allmand 31s have been bought by liveaboard cruisers since the strongest feature of the Allmand 31 is its generous interior. Its shoal draft is great for gunkholing, its moderate rig is easily managed, and its hull form makes for level sailing. Neither version is a racer; however, the taller rig and increased sail area of the racer/cruiser model improve the boat's light-air performance. The boat's construction is solid and its looks are pretty good. Having the stigma of being built by a powerboat manufacturer probably accounts for its depressed price on the used-boat market. Expect to pay around $16,000 to $30,000 for this very roomy 31-footer.

Whether seductive and curvaceous or sensible and utilitarian, dinghies are the essence of cruising. Richard's current love is the 8-footer based on Plat Montfort's Black Fly fabric-covered boat, at left. But he's tried them all, from the inflatable and plastic models below to those on the facing page: the William Atkin Rinky Dink (top), a fendered plastic model, the Auray punt (shown under tow and with the ducks), and Danny Greene's nesting dinghy, the Chameleon.

The joy of rowing

Making a convincing case for a hard dinghy

by Richard Smith

My first cruising sailboat was an 18-foot William Atkin-designed sloop. I built her and cruised her without a tender of any kind. Since she drew less than 18 inches, I could easily take the beach to dig clams or work her up into the mouths of tidal rivers to dry out and spend the night.

One summer a friend loaned me an inflatable. Not much more than a swimming pool toy, the little bauble was the start of a life-long affair with dinghies. It taught me to enjoy early morning hours paddling through the fog with my dog. I also loved to watch her poppling along behind, trying to leap over her frothy track and take to the air, which she did once or twice.

I've had a Yugoslavian inflatable for about 20 years, and she was a veteran when I got her. Undeniably, inflatables are hearty and the most stable of tenders, extremely forgiving of awkward movements. These dinghies are a good choice for those unacquainted with or anxious around deep water. With an outboard clamped to the transom, they're speedy workhorses and can be a lot of fun, especially for electronically deprived, impatient, and easily bored teenagers.

I always carried my 2-hp engine mounted on the pushpit, but getting it off and onto the dinghy became increasingly tiresome. So was filling the tank on a shaky platform. So was finding a place to store cans of gasoline. So were hard starting and the noise and fumes.

One summer we left the engine home and rowed everywhere. We were hooked. It was an easy way to get a little exercise and to further enjoy the delights of gunkholing. We didn't miss the engine, but I began to realize how badly the little airboat rowed.

Pathetic holdovers

Oars on inflatables have become vestigial appendages, pathetic holdovers from a time before outboard motors. Whatever her advantages — and there are many — an airboat is not a rowboat. Rowing puts us in touch with the water in ways that are increasingly hard to achieve in our industrialized society. Rowing a boat easily and quietly in fresh air, dipping and skimming the oars just feet away from the head of a seal, can provide some of the happiest of times afloat. A boat that rows well is more in keeping with the idea of a sailing boat than one propelled by a motor. We enjoy rowing and sailing in similar ways and for similar reasons.

Like the good old boats that tow them, hard dinghies are found in various states of disrepair and can be acquired cheaply. When hauled into the garage for a few weeks during the winter, an 8-foot rowboat in need of tender loving care can provide the same satisfaction that upgrading the mother ship offers.

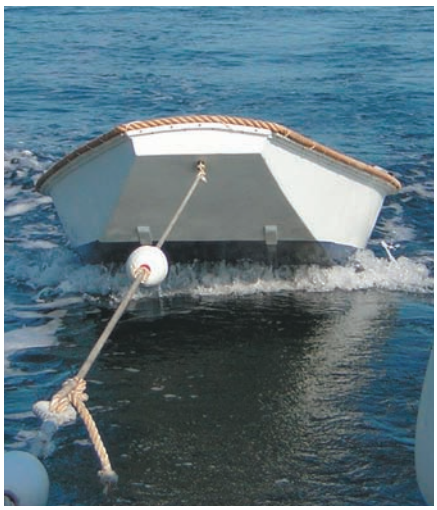
Give or take a few horsepower, inflatables tend to perform similarly and look alike. Conversely, there is great variety to be found in hard dinghies. There are pointy-bowed hulls and prams. There are dories; V-, flat-, and round-bottomed boats; and folding and nesting dinghies. There are carvel-planked, lapstrake, and strip-built skiffs. And there are fiberglass replicas of fine wooden boats. Differences in form and function characterize each type, and we can modify them still further to get the best match with our individual preferences in use and appearance.

For sale in boatyards

Hard dinghies are ubiquitous and often can't be sold for enough to make it worthwhile advertising them. They can be found for sale in boatyards and by word of mouth. We stumble upon them in garage sales or spot them in backyards or alongside the road.

A battered 6-foot fiberglass boat washed up on our beach one morning after a stormy night. The hull was badly abraded and the oarlocks were gone, but I got her home and dried her out. A quart of epoxy and some fiberglass cloth later, and she was ready for sea. But even with a properly struck waterline and a new pair of oars, she lacked whatever it is that smacks of a good old boat. She was old, to be sure, but even with lashings of TLC she wasn't very good. Beauty is not entirely in the eye of the beholder. The dead-straight sheer, her stubbiness, and a wavy deck flange didn't help. She got us to shore and back but wanted an engine badly. She made a better planting box than ship's tender.

For those lucky souls who have yet to build their own boat, I can think of no better end to a couple or three sheets of plywood. With a good set of plans, common tools, and sufficient desire, your cruising adventures can be fortified with a dinghy of your own making.



A flat-bottomed pram is a good choice for amateur boatbuilding. There are many plans available in traditional and epoxy-based building systems and drawn by some of the world's finest small boat designers. Before choosing your $30 plans, consider the little boat's carrying capacity, her width and length, flare and rocker, the rake of her transom, and shape of her stem. These and many other features should be considered in relation to the intended use and overall appearance. In the process, you'll learn quite a lot about boats, how they move through the water and what pleases the eye.

Fine tenders

Over the years, I've built two William Atkin-designed dinghies, one the 6-foot Tiny Ripple and the other a 7-foot Rinky Dink. Both were fine tenders, light and very well-behaved while being towed in the short and choppy waters of our inland sea. They handled the wakes of large and fast-moving powerboats and ferries with confidence, and their small size meant that I could get them aboard the big boat during rough weather or before long passages.

The great British yachtsman, Claude Worth, in his classic book, *Yacht Cruising* (now out of print), described the French Auray fisherman's punt. I thought she would make a good tender. I liked the decidedly pugnacious nature of this little boat, with her long bow overhang that I could imagine would allow me to step, dry-footed, on a sandy beach.

More recently the prominent American small boat designer, Philip Bolger, drew a replica Auray punt in modern

Richard built Phil Bolger's Auray punt design, at left, but found that she was too heavy to be hauled aboard easily. He is currently making peace with his Black Fly dinghy, at right, whose good looks, he figures, help make up for her somewhat cranky nature.

taped-seam form. I ordered a set of plans from Dynamite Payson and spent several pleasurable weeks putting her together.

We towed her for several weeks last summer and, except for the fact that she is too big for us to haul aboard easily, she makes an excellent and highly personal tender. The punt's added length and two oarlock positions allow her to balance quite handily even with two large adults and a dog. In fact, with the narrow bow, old Scout has less latitude to move about and upset the trim.

Good flare

Like the Atkin prams, the 9-foot 9-inch Auray punt has good flare and, with her long bow overhang, she seems to slide about among the waves taking to heavy wakes and tide rips like a duck. The absence of a skeg may prevent her from tripping over waves, and her waddling about seems to settle her in just the right way. This same feature, however, requires some acquired skill to keep her to a straight course under oars.

Resources

Atkin Designs
P.O. Box 3005A
Noroton, CT 06820
<http://www.atkinboatplans.com>

H. H. "Dynamite" Payson
Auray punt and others
207-594-7587
sales2@instantboats.com
<http://www.instantboats.com>

Chameleon plans
Danny Greene
P.O. Box GE 213
St. George's, Bermuda GEBX

I once towed an 8-foot plastic boat with simulated lapstrake sides that came with a Thunderbird sloop. I reinforced the oarlock mounts and fitted a rope fender. Being very light, she panted a little but held together as long as I had her. I would fault her only in that her appearance clashed with the clean and purposeful lines of a Thunderbird.

Friends of ours built a Danny Greene Chameleon nesting dinghy to serve as tender to their Mason 33, now cruising in Ecuador. The Chameleon design is a little over 10 feet long, but when broken in two and nested, she takes up just a little over 5 feet of deck space. They reduced the overall length to 8 feet, however, keeping the same beam and freeboard, so she would fit comfortably abaft the mast. By doing this, the weight was also reduced from the original 100 to about 60 pounds.

Our friends report that she is "light, rugged, extremely serviceable . . . and easily repaired while cruising." They've mounted a 3.3-hp outboard on the transom but also find the Chameleon rows and tows very well.

Another friend, with whom I sail in tandem every summer, owns a full-sized nesting Chameleon, but he happily tows her almost exclusively. She carries two large adults, bags of groceries, and a large dog.

Strip-planked pram

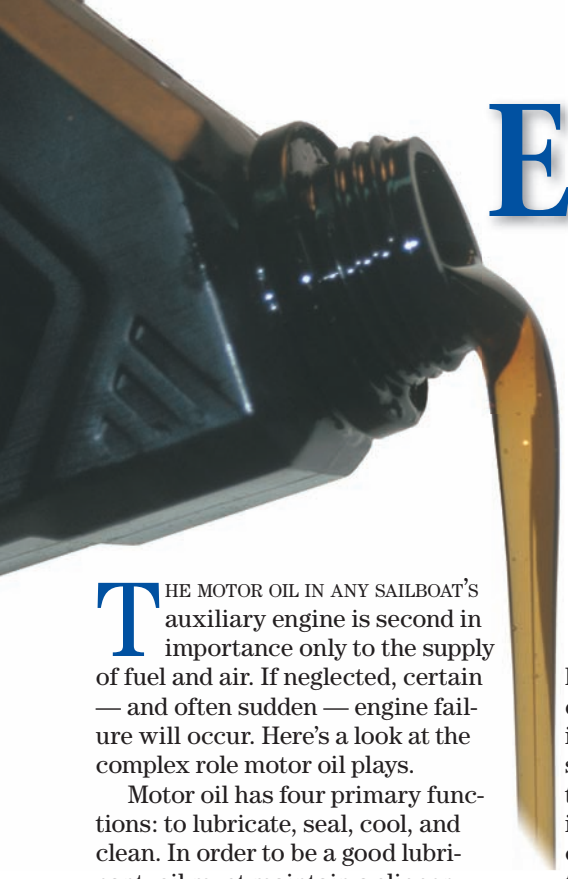
In recent years, I've cruised with one of my all-time favorite dinghies. She's a round-bottomed, strip-planked pram that I built of ¼-inch Western red cedar planks encapsulated between layers of fiberglass cloth and resin. She's based on the lines of an 8-foot Plat Montfort Black Fly fabric-covered boat that I couldn't quite resolve with our gravel and barnacled beaches. She's a little lighter than a plywood boat of similar size and a lot lighter than fiberglass. I can get her up on deck by dropping the lower lifeline up at the bow and pulling her up and over the gunwale. I turn her upside down and wriggle her around into transom chocks.

The little round-bottom pram is, quite simply, a joy to look at — not just by me but by many who like her looks and say so. I think this is because she is well-designed but also because she's unique and built by hand, features appreciated by many in an increasingly off-the-shelf world.

In any event, these good looks make the dinghy's small size, somewhat cranky nature, and ample foam pillow under tow quite acceptable. I keep fiddling with the seats and oarlock height and move the towing ring up and down to tweak performance. All this also gives me an excuse to mess about with her. I like this dinghy a lot.

Dinghies are not entirely about performance and cost. A terrific deal doesn't always make for the best boat on the water. The appearance of a good tender complements the mother ship as much as a carefully drawn sheer line or fine paint and varnish. In fact, the way our tender looks says as much about our seamanship as the way we reduce sail in a blow or how we anchor.

Besides all that, there is something seductive about a handsome dinghy tugging on her painter behind a small boat. Something about her small size and practical nature reminds us of simpler times and, perhaps, the essence of cruising.



Engine lubrication

What you need to know about oil

by Gregg Nestor

THE MOTOR OIL IN ANY SAILBOAT'S auxiliary engine is second in importance only to the supply of fuel and air. If neglected, certain — and often sudden — engine failure will occur. Here's a look at the complex role motor oil plays.

Motor oil has four primary functions: to lubricate, seal, cool, and clean. In order to be a good lubricant, oil must maintain a slippery surface between moving parts. The oil film must tenaciously adhere to the engine's metal surfaces and resist being pushed off, regardless of temperature or pressure.

During combustion, gases are formed under high pressure. This pressure, acting against the piston head, is what is converted into working horsepower. Therefore, it is necessary to prevent these gases from leaking past the pistons. Oil acts as the sealant.

The cooling system (water) removes the bulk of unwanted heat from the engine. However, oil assists the cooling system by removing heat from some critical areas, such as the bearings. In doing so, it frequently becomes much hotter than the cooling water.

Waste materials are formed as the byproduct of combustion. The type of fuel, gasoline, or diesel influences the nature and quantity of these waste materials. A few of the most common and troublesome include water, soot, carbon, and acids. The motor oil maintains these contaminants in a state of dispersion so they can be removed with routine oil changes rather than forming harmful deposits.

Major challenges

Some of the major chemical and physical factors that make the job of engine lubrication challenging include temperature extremes, oxidation, corrosion, contaminants, and foaming.

Motor oils encounter both high and low temperatures. When cool, motor oil becomes viscous and resists flowing. In cold weather, oil may become so thick that it will not circulate freely throughout the engine. This can result in excessive engine wear. In extreme cases, the oil can become so thick that the engine cannot be started. On the other hand, when it is hot, oil thins out. If it becomes too thin, high oil consumption and engine wear will occur.

When oxygen in the air comes in contact with the oil, a chemical reaction called oxidation begins to take place. As long as the oil is cold, oxidation occurs very slowly. However, heat speeds up the reaction. In addition to the products of oxidation, such as deposits and acids, motor oil becomes more viscous as it oxidizes.

Two types of corrosion commonly occur in a sailboat's auxiliary engine: atmospheric corrosion and acid corrosion. While atmospheric corrosion is caused by water or moisture in the air, acids are a byproduct of the combustion process. Both water and acids are routinely formed in quantities significant enough to cause engine damage in a short time.

Most sailors are under the false impression that their motor oil requires changing because it has broken down or worn out. Not so. The oil needs to be removed because it has accumulated contaminants in the course of performing its job. These contaminants include water, soot, carbon, acids, metallic particles, and dirt. If allowed to remain in the engine, they can combine and form sludge.

Small air bubbles

Foaming can take place when oil and air are beaten together in the crankcase. It is the result of small air bubbles being trapped in an oil film. Foaming reduces lubrication effectiveness and can result in the malfunctioning of such engine components as the oil pump and hydraulic valve lifters.

Viscosity is the physical property that determines the oil's ability to flow. Oils that are thick offer great resistance to flow and possess a high viscosity. Those that flow easily possess a low viscosity and are often described as non-viscous.

> "…always change the oil before seasonal layup. And be sure to change the filter with every oil change."

Oil viscosity controls the ease of engine starting in cold weather. To put it another way, it determines the temperature below which an engine cannot be started.

Viscosity determines the thickness of an oil film in an engine. A viscous oil leaves a thicker film, under any set of conditions, than a non-viscous oil. This fact influences engine wear.

Oil viscosity also explains the reason for most oil consumption, inasmuch as consumption increases as oil

viscosity decreases. Oil can be too heavy. If so, it can fail to uniformly lubricate or remove excess heat.

For many years, the naturally occurring chemical and physical characteristics of motor oil were adequate. However, there have been major developments since World War II. Varying compression ratios, higher temperatures, greater power-to-weight ratios, and emission controls have made it necessary to incorporate a number of additional agents in the oil. These additives, including detergents, anti-oxidants, corrosion inhibitors, and anti-foaming agents, are designed to enhance the oil's performance.

Routine changes needed

For the most part, these additives are expendable. They can be depleted if the oil is used for too long a time. Routine oil changes not only insure that these additives will be replenished, along with fresh oil, but also that destructive contaminants will be removed.

Synthetic motor oils have been commercially available since the early 1930s and were used primarily for military applications. During World War II, they were used to prevent the oil from freezing in army tanks during the winter months. Synthetic oils are often made from a mineral-oil base stock, which may be partially disassembled and reconstructed to meet a set of specific performance requirements. Synthetic motor oils are generally more expensive than conventional motor oils.

The combination of letters and numbers on each container of oil was created by the combined efforts of the American Petroleum Institute (API) in conjunction with the American Society for Testing and Materials (ASTM) and the Society of Automotive Engineers (SAE). It is the motor oil's service classification and identifies in which type of engine and under what conditions the oil can be used.

The API Engine Service Category S indicates that the oil is designed to provide service in a gasoline (spark) engine. The letter immediately following the S suggests the type of additive package the oil contains. For example, SD indicates use in gasoline engines 1968 through 1970, while SG is for gasoline engines beginning with the 1989 model year.

The API Engine Service Category C indicates that the oil is designed for use in diesel (compression) engines. As is the case with category S oils, the letter immediately following the C also defines the oil's use. CA oils were widely used in diesel engines in the late 1940s and early 1950s. Diesel engines manufactured since 1983 require oils with an API Engine Service Category of CE.

"Backward compatible"

The second letter in the API Engine Service Category is issued in alphabetical order. The oldest and least complex oils are SA and CA. The most current are SL and CF. In most instances, higher API Engine Service Category oils are "backward compatible." In other words, they may be used in place of earlier recommendations.

The SAE viscosity numbers constitute a classification of crankcase lubricating oils in terms of viscosity. These SAE grade recommendations are linked directly to temperature. The lower the number, such as SAE 5, the thinner or less viscous the oil. The higher the number, such as SAE 40, the thicker or more viscous the oil. Thin oils meet SAE low-temperature requirements, while more viscous oils meet high-temperature requirements. A multi-SAE or viscosity-graded oil, such as SAE 10W-30, is one that, at low temperature, meets the SAE requirements of a lower-grade number and also meets the high-temperature requirements of the heavier-grade oil.

While today's modern motor oils are amazingly effective, they are not magic. They have an operating life and need to be replaced periodically. Follow the engine manufacturer's recommendations regarding the proper API Engine Service Category, the SAE viscosity, and change frequency.

Before changing the oil, bring your engine up to operating temperature. This ensures that any damaging contaminants are in suspension and can be pumped out with the old oil. In addition to periodic oil changes based on hours and conditions of usage, always change the oil before seasonal layup. And be sure to change the filter with every oil change.

From top: a typical multi-weight oil for gasoline service, synthetic motor oil for gasoline and diesel applications, and straight weight oil for diesel service.

Insulating the hull

Maintaining a toasty cabin in freezing weather

by Dale Tanski

Winter weather couldn't keep me separated from my project boat. I spent a couple of working weekends on *Maruska*, my Pearson 365, in January and February. One of the projects that I took on when the weather outside was frightful was the insulation of the hull, since so much of the main cabin hull was exposed at that point in my refit.

I figured this step would thermally insulate the boat, allowing for an extended sailing season. It would help reduce the Espar heater's fuel consumption and make the boat somewhat cooler during the summer. Because Pearson 365 hulls were solid layups, insulating would reduce interior condensation and damp the noise below while sailing.

I had several priorities for the insulation material I selected. It would have to be relatively inexpensive, easy to install, and durable. It could not absorb water and must be fire-retardant. I considered spray-on foams, which typically do not absorb water and have excellent thermal insulating values. The drawback was that I could not install the foam myself, greatly increasing the cost of the project. I also feared that the spray-on method would not yield a neat end result.

Next I considered fiberglass batt insulation. It has great thermal numbers but retains water like a sponge and would be difficult to attach to the hull. Next I discarded as impractical rigid foam boards since they're inflexible.

Foams wouldn't bend

None of the foams I researched would bend to meet *Maruska's* hull shape without breaking. The only way to achieve a suitable bend was to add kerf cuts or slots to allow the rigid sheet to bend, similar to what is done with hull-coring materials. Kerf notches would be time-consuming to install and create voids.

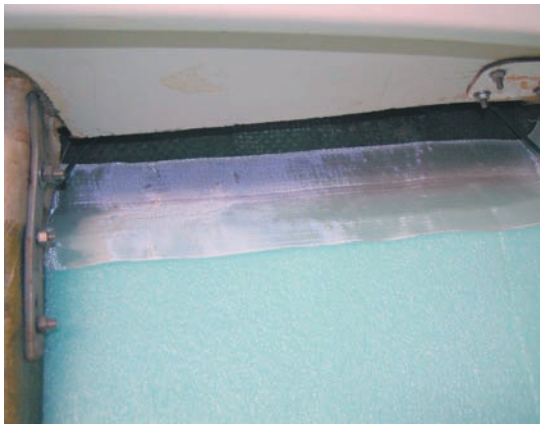
I discovered a polyethylene sheet that would bend nicely, had adequate thermal insulation qualities, would not absorb water, was lightweight, and had excellent fire-resistance properties. It was also available in any thickness in ½-inch increments and provided an attractive and durable finished surface. This product, called Stratocell, is typically used as a packing material for shipping applications, due to its resilient properties and its relatively inexpensive cost. Stratocell weighs 1.2 pounds per cubic foot and is a polyethylene foam board manufactured by Sealed Air Corporation.

Because I was very concerned about fire resistance, I tried to light a sample using a propane torch. When I did so, the Stratocell simply shrank away and gave off a pleasant crayon-like smell. Thermal Foams of Buffalo, New York, provided the material in 48-inch by 108-inch sheets, 1½ inches thick, for $46 each. Thermal Foams was able to slice the sheets lengthwise so they'd fit inside my vehicle for transportation to the boat and then down the companionway once I got there.

Contact cement

I tested several methods for affixing the foam to the hull and settled on contact cement. This cement is typically used to glue high-pressure laminates, such as Formica, to your kitchen countertop. I also tested and considered using vinyl floor tile cement, but had concerns about the drying time in the cold weather. Even though the interior of the boat was shirt-sleeve warm, the

Dale chose Stratocell, easily cut with woodworking tools, as his insulation material.



He pre-cut panels and beveled the tops to divert any leaks from the deck joint or toerail.

All panels were carefully fitted before Dale considered touching the contact cement can.

The flexibility of the material allowed it to bend to the hull and to be sprung into place.

Since contact cement is unforgiving, Dale marked each piece with a name and an arrow.

He made custom cuts using just a hacksaw blade and, for big cuts, an electric jigsaw.

Once the custom fitting was done, he tested each piece once more before gluing.

The rest of the plumbing was hooked up after the Stratocell installation was completed.

interior surface of the hull was only a few degrees above the cold outside temperatures. My tests showed that both adhesives provided a one-shot, super-sticky, permanent bond that did not attack the foam.

An advantage of the flooring adhesive was that I only had to apply it to one surface, allow it to dry, and press to stick the foam into place. It also created a lot less smell and was not flammable. Contact cement must be applied to both surfaces, is very flammable before it dries, and in a small space like a boat, is a respirator-only product. For my application, however, the advantages of contact cement outweighed the off-chance that the floor glue wouldn't set up in time during my short work weekend. I have used floor adhesive in the past for its intended purpose and have waited for hours for it to properly dry at room temperature. If I were doing this installation during warm weather, I would have gone with the floor goo. Both adhesives are available at big-box home-improvement stores.

Stratocell proved to be excellent to work with. It cuts like Styrofoam with simple woodworking tools or a sharp utility knife, but it does not flake, break, chunk out, or rip. For the majority of the big cuts, I used an electric jigsaw. For little adjustments I hand held a hacksaw blade. Both methods made smooth, fast, and accurate cuts.

Pre-cut sheets

I dry-fitted everything in each section before opening the glue can. The sheets had been pre-cut to 24 inches wide. I cut the tops of each panel on a 45-degree bevel where the hull met the deck. I kept it shy of the deck by about an inch, since I hoped that the bevel would direct any water that might come from a leak at the deck joint or rail fitting down the front of the insulation sheet, instead of finding its way behind it. I spread 6-inch fiberglass cloth tape over the foam's top bevel and on the hull to provide a waterproof cap. I wetted this tape cap with epoxy, pleased to see that it did not attack the foam at all.

One word of caution: label every foam panel on the back side with a permanent marker and identify its corresponding location on the hull. While you're at it, do not forget to show an "up arrow." I even marked the location of each foam joint on the hull by simply drawing a line along each panel as I dry-fitted it. Because contact cement is a very sticky one-shot adhesive, it is impossible to rotate a panel or slide it over an inch or so once it has come into contact with the hull. Therefore, the labels on the back side become very important. Because the foam is compressible and resilient, similar to the spongy feel of a school gym mat, I made each piece a bit larger and "sprung" it into place for a nice tight fit to the bulkheads and the next corresponding foam piece.

Hour to complete

Cutting and fitting the foam on the port side of the main cabin took me approximately an hour to complete. I completed the dry-fit on the port side, applied the glue to the back side of the foam and hull surface, took off my respirator, slid open the hatch, and took a walk around the marina for about 15 minutes while allowing the glue to dry. When I returned to the boat, I pressed the foam panels into place in less than five minutes. Total material for the port side was 1¼ full-sized sheets. The result was a safe and cleanable surface that greatly enhanced the thermal insulation properties of the hull.

After I had completed both sides of the main cabin, I compared the surface temperatures between the uninsulated bare hull and the surface of the foam using a hand-held infrared digital pyrometer. The temperature differential averaged 17° F between the surface of the foam and the surface of the bare hull, with an inside cabin temperature of 71° F, an outside temperature of 26° F, in about 10 knots of wind.

Now, even on the coldest days, the Espar heater throttles back and maintaines the interior temperature with ease. I would recommend this project to anyone with access to the boat's hull surface. The only cold part of the boat's interior now is the cabin sole. If I could figure out a way to slither under the sole to insulate it, I gladly would.

Resources

Sealed Air Corporation, manufacturers of Stratocell, Bubble Wrap, and Jiffy Mailers; 866-795-3028; <http://www.sealedair.com/products/protective/pe_foam/fabrication_foams.html>

Two firsts for the Tartan 34 Classic

Hull number one is shipped to Germany

by Deane Holt

***Rubicon*, a Tartan 34 Classic, now shows her sweet lines to Germans, the first of her kind in Europe.**

Being first in anything is exciting. *Rubicon*, hull number one of the Tartan 34 Classic design, recently crossed the Atlantic to become the first of her model in Europe. As the first of the line and with a unique history, *Rubicon* serves beautifully as the Tartan 34 C Association's "poster boat."

The Tartan 34 C is celebrating a 40-year anniversary this year. (Visit <http://www.tca34.org> for event information.) In 1967, the builders of the successful Tartan 27, Charles Britton and the Douglas & McLeod Company, commissioned a 34-foot, high-performance, offshore cruising and racing boat. They asked Olin Stephens of Sparkman & Stephens, who at the time was designing the racing yachts *America* and *Intrepid*, to design the Tartan 34. His design resulted in a 10-year production run of 525 boats, the majority of which are still sailing today.

Launched in December 1967, the first hull in this series was immediately taken south, where she won her class in the 1968 Southern Ocean Racing Conference. As we celebrate the 40th anniversary of this classic design, we might wonder, "Where is she now?" Her new owner, Jürgen Mohrmann, tells how this boat, now named *Rubicon*, wound up in Hamburg, Germany, as the first Tartan 34 Classic in Europe.

"Distance means nothing when you are looking for the boat of your dreams and finally find her on the other side of the Atlantic Ocean," Jürgen explains.

"Everything started at the beginning of the sailing season 2004, when we made up our minds to sell our beautiful 1920 Norwegian sailing boat, *Nordstern*, and look for a classic racer/cruiser. This was not an easy decision for us. We had lovingly restored our traditional wooden boat and sailed her for the past 12 years over thousands of miles on the Baltic Sea and the Elbe River. In addition, the little old Norwegian was a gift from my parents, who had owned her since the late 1950s and had taken me out on her for my first sailing trip when I was only 6 weeks old.

Sometimes too small

"But after years of good times, we had to admit that a 27-footer is sometimes too small for longer cruising trips, and the sailing abilities of vessels of that era were completely different from those of more modern yacht designs. Sailing her in strong winds and the choppy waves of our northern waters was sometimes more than hard work. Once our decision was made, *Nordstern* quickly found a new owner.

"Since we have been secretly in love with the incredibly great designs of Sparkman & Stephens, my wife, Susanna, and I started looking among the S&S designs for the new boat of our dreams. Among these production beauties, one special design seemed to be exactly what we were looking for: the Tartan 34 C.

"Unfortunately, not even one of these beautiful boats existed anywhere in Europe. From this moment, we entered a completely new dimension of boat buying. Thanks to the Tartan 34 Classic Association, our dream became reality. With the great support of Deane Holt, founder of the association, who helped us like a real friend, we considered a couple of interesting offers from around the U.S. East Coast and finally found the perfect boat: *Rubicon*, Tartan 34 C, hull number one.

"From her description, *Rubicon*

> **"We are so proud to sail the first Tartan 34 C ever built and to be the first T 34 C owners in Europe."**

***Rubicon's* arrival in Amsterdam creates interest.**

seemed to have everything we were looking for: sound hull, decks, and rigging, and a beautifully upgraded teak interior and cabin sole, along with a very new Yanmar 3GM 30-F diesel. She was different from almost every other T 34 C, in that she came with a fractional rig and running backstays.

"We sent a message to the seller. When we received a very friendly reply, we began to feel certain that this really could be our new boat. Only a few days later the surveyor said, 'Go for it!'

Hurricane season

"The next step for me was a flight from Hamburg, Germany, to Miami, Florida. It was the middle of the chaotic 2004 hurricane season, between hurricanes Frances and Ivan, so the weather did not allow much more than a two-day trip for this final examination. I had no time to lose, but that's the way real challenges are.

"Except for a few minor cosmetic necessities, I found *Rubicon* to be well cared for and in great basic condition to be shipped across the Atlantic. In preparation, the sails had to be taken off and smaller items had to be stowed under berths and in lockers. Some electrical equipment, including the newly installed shorepower, had to be removed, due to the different electrical power system in Europe.

"There were, of course, some questions about European Union import regulations. The mysterious CE certification turned out to be unnecessary, but there was no way to escape 17.7 percent EU tax and import fees on top of the purchase price and shipping.

"The remaining preparations had to be done by local companies. While Susanna and I watched the whole project from afar, a transportation cradle was built, the decommissioning was completed, and a truck was arranged to take *Rubicon* 500 miles from Miami to Jacksonville Seaport. Meanwhile a shipping broker in Hamburg scheduled the ocean transportation by ferry.

"After some major delays, *Rubicon* left her old home port for Amsterdam in the Netherlands. There she was shifted to yet another ferry to Hamburg. She arrived safely in late November, on Thanksgiving Day. A large crane lifted her off the trailer and carefully launched her into the water.

"Finally on the last leg of her journey, *Rubicon* reported to the customs dock on the Elbe and then two hours later, just after sunset, to her new home marina. The next morning, although the marina was closed for winter, the manager and two members of his crew appeared to haul her out for winter storage.

"We are so proud to sail the first Tartan 34 C ever built and to be the first T 34 C owners in Europe," Jürgen sums up. "We would be neither without the incredibly great help and support of our friends in America."

Home marina

Although active regional clubs for racing and cruising have been around for years, the new international dimension made possible by the Internet allowed Jürgen's story to have a happy ending. It provides the medium for an active exchange of questions and answers via email lists that include more than 500 Tartan owners from all over the world. Another even newer and more robust source of support comes from Tartan clubs that have set up and maintain lively sites online. Here sailors can find graphics, photos, historic texts, and current events that bring a whole new virtual dimension to sailing.

Speaking from his own successful experience with the Internet and the Tartan 34 Classic Association website, Jürgen says it best: "Distance means nothing…"


Susanna and Jürgen Mohrmann celebrated when *Rubicon* was launched the following spring.

Resources

Tartan 34 Classic Association
Deane Holt
aries524@comcast.net
<http://www.tca34.org>

Flakes of history

Scraping off 22 years of fond memories

by Chris Verra

I had been waiting all winter for an excuse to spend some time with my boat. The ice in the Bay of Quinte had started to recede, and a trip over the bay bridge showed that most of the water had softened and had taken on the darker hue it wears all summer. I needed the exercise anyway. Five months' worth of winter fat needed to come off. I could think of no better place to exercise than under *R-Sequel*, our 1984 Endeavour 35. She could stand to lose some weight as well. We had been dragging a 22-year accumulation of antifouling paint around Lake Ontario with us. The buildup of her accumulated annual treatments was starting to fall off in spots. The added weight was not a big problem. We never raced and frankly couldn't care less if we cut a few hours off of our trips, but her spotty bottom looked bad.

When the crane lifted her out of the water last fall, patches of gelcoat showed through the lumpy blue mass. It was time to give her underside a little attention. I left my wife sleeping warm in our bed, loaded up the tools, and headed out on a nippy Saturday morning in March. The forecast called for a balmy 30° F. The southwesterly coming over the lake brought that down to 20.

I donned a white spacesuit over my winter woolies and started at it. I dragged my scraper over half of the boat in a few hours, with the old layers coming off easily. The simple repetitive labor gave me time to dream. With only the rasp of my blade on the gelcoat and the sound of my breath entering and exiting my face mask filters to accompany me, my mind wandered.

The chips of blue paint fell at my feet, a sad end to a product that had served our boat well. Thousands of miles had passed under *R-Sequel's* keel and over this protective layer. The waters of Long Island Sound had been her home. Each piece of antifouling she shed today had a story to tell. She had pushed through the aqua blues of Sandy Hook. Rubbed a rock or two along the coast of Maine. This hull had battled with Hell Gate on numerous occasions. She had wintered in the Caribbean, tracing a path through the Intracoastal Waterway and crossing the Gulf Stream, bulldogging the chop created by the powerful current. Bits of the material now at my feet had left a trail of crumbs along the entire Eastern Seaboard.

New home

She had made her way to a new home in fresh water during the summer of 2005. Up the mighty Hudson, through the Erie Canal, and across Lake Ontario. A blue smear was left on the bottom of Schoolhouse Bay at Main Duck Island that summer. A few chips found a home on a rock in a little bay we visited at the Thousand Islands in the St. Lawrence River. For the most part, though, this paint had hung on for the ride. It had done its job for more than two decades and done it well.

It seemed to me that with each stroke I was removing a little piece of history. An important record of this vessel's travels was being lost, falling to the ground only to be collected and disposed of. Between the atoms of this pile of flakes lay genetic material from all of the places she had been, places I hoped someday to visit again with her. On a microscopic level, *R-Sequel* carried the sands of most of the areas that define sailing in North America. From Halifax Harbor to Grenada, this paint had repelled the advances of trillions of organisms looking for a free ride. This constant battling has left it tired though. The tenacious grip it had on my hull had loosened over the years. The last few stubborn bits would succumb to the sander.

By spring when we splashed her, she was dressed in six barrier coats and a fresh sacrificial coat of blue. We changed her name at the same time (see *Good Old Boat*, March 2007). *Topanga* entered the water as a new entity…her memory erased, her scars healed, her youth restored. Perhaps she will repay our labor with years of good service. Perhaps, one day, another younger sailor will be repeating the job I did, creating a new canvas on which he will record his adventures with this lovely vessel.

The highwayman's cutaway knot

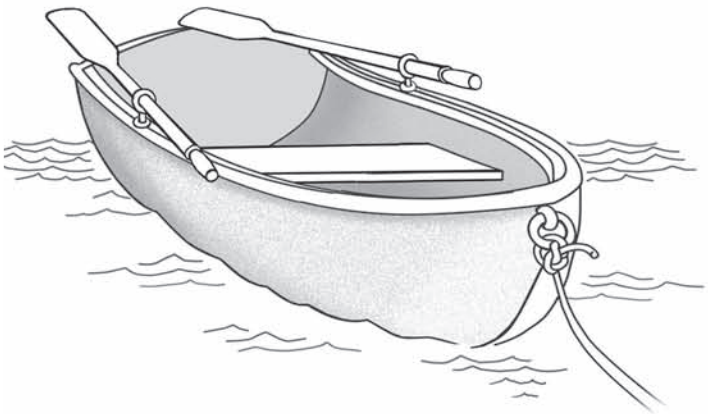
It's not secure, but it releases easily

by Geoffrey Toye

The highwayman's cutaway knot (also called the highwayman's cut) is said to derive its popularity from gentlemen in that profession who needed to untie a horse quickly. The knot is a slip hitch with a difference from all the others I have seen, in that it does not have a permanent bight of rope on the other side of the post or rail to which it is tied. Thus, when it is untied or slipped, the entire knot drops away cleanly at the front of the rail and no loose end has to be pulled around the rail.

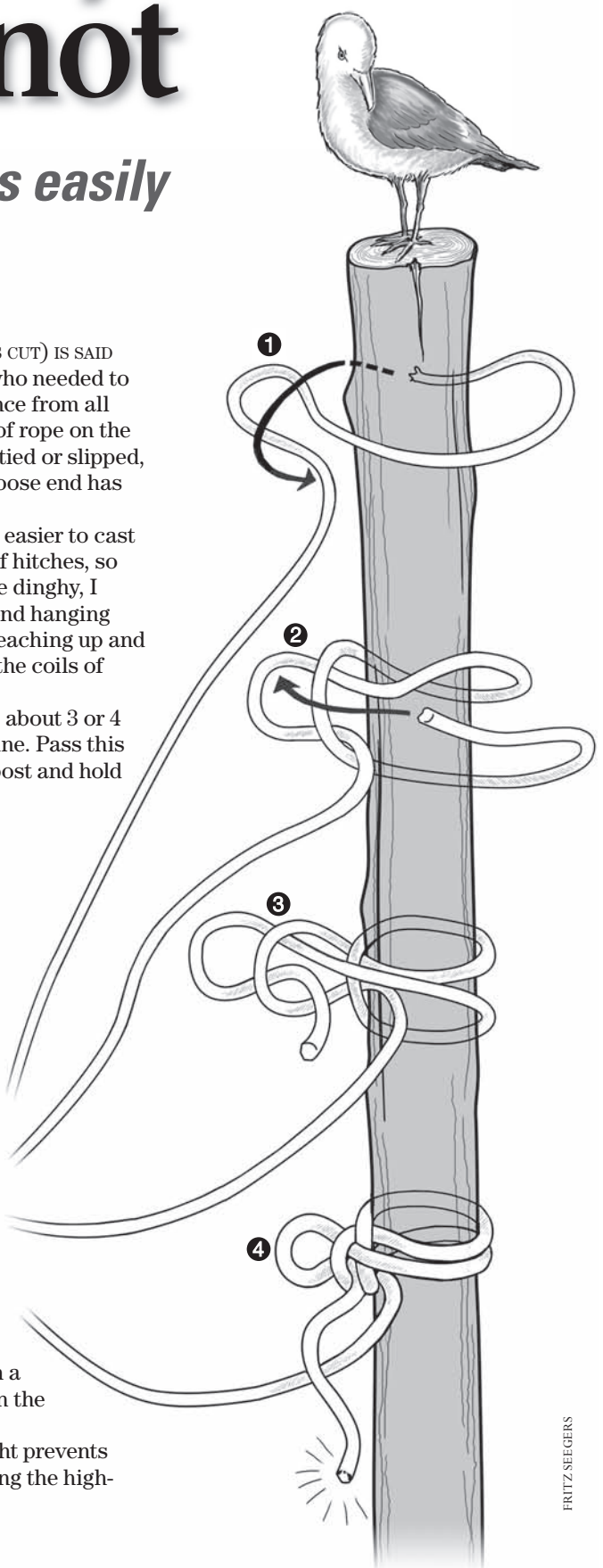
It is not the most secure way to tie up the tender, but it is much easier to cast off. I hitch the dinghy with a conventional round turn and two half hitches, so it is properly secured until it is time to go. Before climbing into the dinghy, I replace the solid hitch with the highwayman's cutaway, with the end hanging down into the dinghy. When we are ready to cast off, there is no reaching up and no kinks of painter catching in deck or pontoon fittings. Instead, the coils of rope magically detach themselves and drop into the tender.

It is easy to tie. (1) Take a bight of the painter in your left hand, about 3 or 4 feet from the end not attached to the tender; I'll call this the end line. Pass this one-third of the circumference around the left side of a mooring post and hold



it there. (2) With the right hand, grasp the end line where it emerges from your left hand, pass that around the right side of the post, and loop it over the bight of the boat line, which is held in position by your left hand. Grasp that too, against the post, with your left hand. Slide your right hand along the end line, back around the post (clockwise if viewed from above) and across the front of the post. (3) Keep going until you can push a bight of this line through the original bight in the boat line. Pull on the boat line to tighten the hitch. (4) To release, tug on the end line.

The way it works is the third bight pushed through the first bight prevents the first one from slipping back through the second bight. Releasing the highwayman's cutaway is like pulling out a cross-bolt.

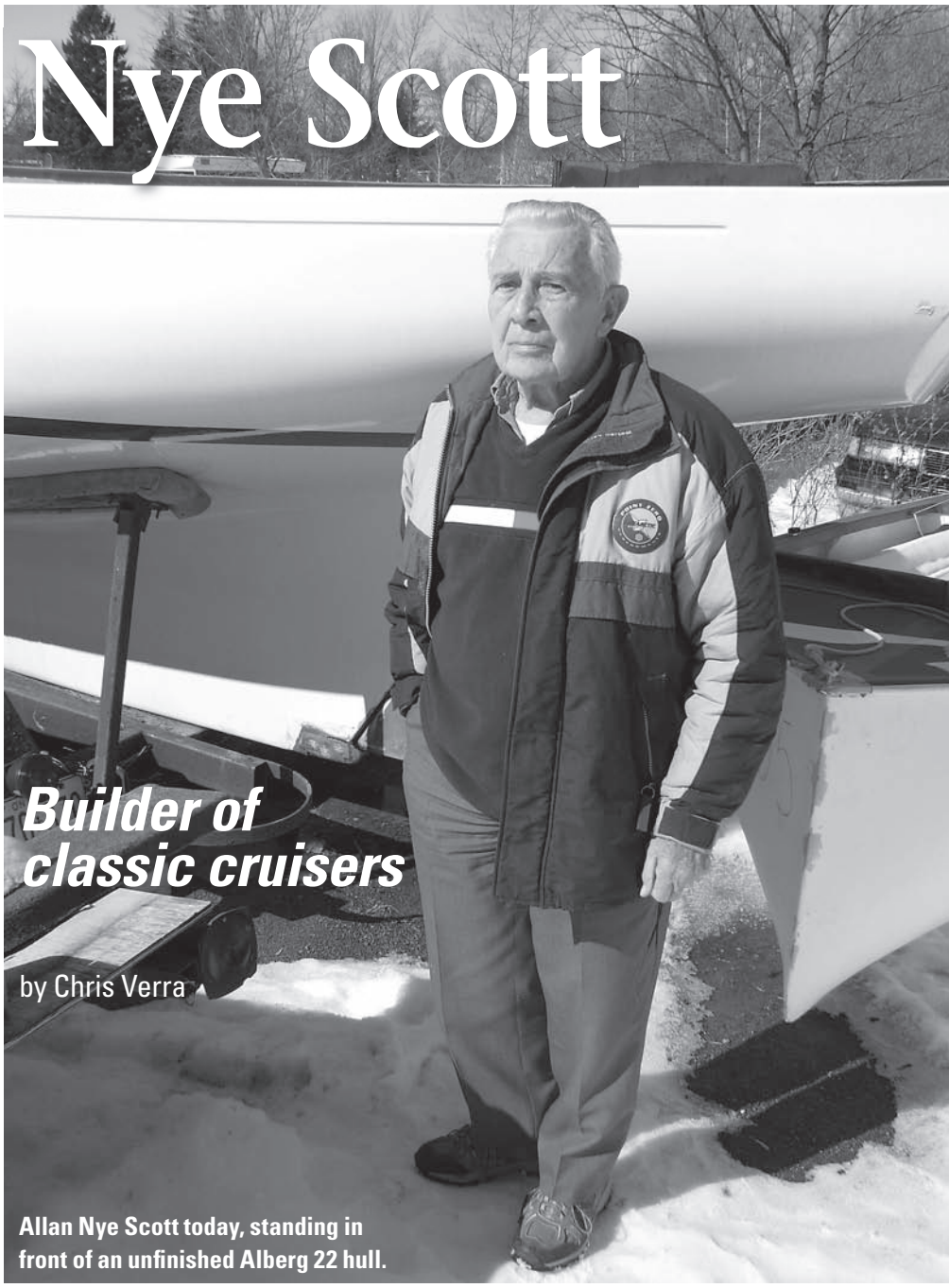


FRITZ SEEGERS

Allan Nye Scott

Builder of classic cruisers

by Chris Verra



Allan Nye Scott today, standing in front of an unfinished Alberg 22 hull.

JUST ABOUT ANY WEEKDAY MORNING after 10 you can find Allan Nye Scott behind his desk at the offices of Nye Boat Works in Foxboro, Ontario. Long past the normal retirement age, Allan no longer owns the business. He has taken on a consultant role. Despite the fact that he is in his 82nd year, he mirrors the tenacity, dependability, and endurance of the vessels he helped create, vessels such as the Contessas and several Albergs. The list of boats he built reads like the Who's Who of "small boats to choose for an ocean crossing."

First boats

Allan was born August 15, 1924, in Montréal, Québec. He was introduced to boats early in life at Boy Scout camp. Later, during World War II, he served as an Able Seaman doing radar control aboard the cruiser H.M.C.S. *Prince Robert* of the Royal Canadian Navy on convoy duty in the South Pacific. The ship was present for the handover of Hong Kong after the Japanese surrender in 1945, the final military action of the war.

After the war Allan returned to Montréal to study chemistry at McGill University. He loved to sail and, as an undergraduate student, purchased his first sailboat, a 16-foot daysailer.

Shortly after graduation he was hired by Union Carbide, a chemical company in Montréal. While there he was involved in the development of epoxy coatings. When he wasn't working, he often could be found at the Royal St. Lawrence Yacht Club. Little did he know that working with epoxy coatings all day and messing with boats all weekend were good preparation for what was to come.

Allan was described in a 1970 *Toronto Life Magazine* article as having a "nomadic, just-give-me-a-place-to-hang-my-hat attitude." His work took him from Montréal to Toronto many times during the decade after the war. Perhaps it was inevitable that he would one day join the National Yacht Club (NYC) in Toronto. That day came in 1951. While there he served on the board and as rear commodore and moved up through the racing ranks. In 1962 his romance with the R-class boat *Diana* began. At that time, there was a fleet of six R-boats at NYC. With *Diana* he honed his sailing skills, winning practically every cup around the lake. This wooden Universal Rule boat remains one of his favorites to this day.

Allan's ownership of *Diana* is tied to the beginning of his relationship with the late Swedish yacht designer, Carl Alberg. Allan and four other sailors asked Carl to design for them a seaworthy boat similar to his Triton design being built by Pearson Yachts. Carl agreed and for $100 the Alberg 30 was born (see *Good Old Boat*, March 2006). Kurt Hansen of Whitby Boat Works, builder of the Great Lakes Folkboat, was commissioned to build the first five. Before production began, however, Allan decided to pass on the deal and instead bought *Diana*.

In 1967, Allan again made a tentative advance into boatbuilding when he and four other sailors from the NYC contacted Olin Stephens of Sparkman & Stephens to design a boat. In Allan's words, "We wanted a boat we couldn't afford." The Hughes 38 was the result. Howard Hughes (no, not *that* Howard Hughes) of Hughes Boat Works was contracted to build it. (For a bit of Hughes history, see

the Hughes 25 article, *Good Old Boat*, July 2006.) Many hulls and decks were delivered to sailors' backyards. Some were completed at the factory. Allan had his delivered to the yacht club and finished it there.

This boat, named *Diana of York*, went on to prove her mettle on the racecourse, although Allan tells the story of his disappointing first race: "Jack Currie of National Yacht Club had purchased the original *Diana* from me. At the start of the race Jack sailed up behind me and passed us on the leeward side. As he went by Jack yelled over, 'Good looking boat!' and sailed on." The Hughes 38 went on to be one of the great success stories of the boatbuilding world and continues to be a respected and capable vessel. *Wild Card*, one of the better known Hughes 38s, is sailed today by cruising writer and sailing broadcaster Cap'n Fatty Goodlander.

J. J. Taylor & Sons

Evenings and weekends were spent building the systems and interior of the new *Diana*. Allan was working on his new Hughes in the yard at NYC the spring of 1968 when he was visited by Jack Martin, owner of a Toronto auto plant. Jack was interested in buying a boat company — J. J. Taylor & Sons — and asked Allan to negotiate its purchase and then manage it. J. J. Taylor & Sons had been building boats in Toronto since 1904 and had been kept busy during the war with military contracts. After the war, the firm built vessels for the Canadian Coast Guard, Royal Canadian Mounted Police, and anyone else it could get to sign a contract. In its heyday J. J. Taylor & Sons built boats from 10 to 134 feet. Working primarily in wood, the company was ready for a change. Under the leadership of Allan Nye Scott and Jack Martin, the company looked to fiberglass sailboat production.

At the age of 45, Allan put down roots in Toronto, due in no small part to the fact that he had gotten himself engaged to Evelyn Jonas, a young English teacher from Toronto and former lieutenant in the Royal Canadian Naval Reserve. His temporary address, as of November 1969: S/V *Diana of York*.

Over the course of his first year with J. J. Taylor & Sons, Allan searched for the right boat to take into production. The wrong decision at this critical juncture could bury a small business. He sought a sturdy little pocket cruiser and found it in the Contessa 26. A company called Rogers and Sadler had been building the 26 in Lymington, United Kingdom, since 1966. Allan had a hull and deck shipped to Toronto to make the molds and began production. The boat was a success: more than 350 hulls were laid up in the first three years. By the time J. J. Taylor & Sons closed in 1990, more than 400 had left the plant.

The Contessa 26, and later the Taylor 26, are considered by many to be the ultimate big-water pocket cruisers. Tania Aebi, the youngest woman to solo circumnavigate, did so in a Contessa 26 named *Varuna*. She was 20 when she finished her voyage. Tania told her story eloquently in her book, *Maiden Voyage*, which further promoted this capable little boat.

Because of the success of the 26, Allan returned to Lymington where Jeremy Rogers was building the big fin-keel sister of the 26, the Contessa 32. Again a hull and deck were shipped to Toronto in order to have molds made. Canadian production began in 1973. The design proved itself in the deadly 1979 Fastnet Race, in which it was the smallest boat in the fleet to finish. In 1996, long after Allan had left the company, 20-year-old B. J. Caldwell completed a solo circumnavigation on a Contessa 32, officially becoming the youngest person to do so. By 1990 when the plant closed, 87 Contessa 32s had been built.

Allan (at her helm, above) finished a Hughes 38 named *Diana of York,* but his heart still belonged to an R-class boat named simply *Diana.* Allan (aft of the mast without shirt on, at left) aboard his beloved *Diana*.

New ventures

In 1974, one year after acquiring the Contessa 32 rights for J. J. Taylor & Sons, Allan left to strike out on his own. He set his sights on Belleville, Ontario, a small town on the shore of the Bay of Quinte at the east end of Lake Ontario. Belleville is home to the oldest continually run yacht club in North America, the Bay of Quinte Yacht Club. What better place to build sailboats?

Belleville also had the advantage of being the former production center for the venerable 31-foot Cuthbertson & Cassian-designed Corvette. Allan set up his new company, Nye Yachts, in the old building where Ian Morch's Belleville Marine Yard (one of the founding four partners of C&C Yachts profiled in *Good Old Boat*, September 2002) had produced the Corvette. For his next boat Allan turned to Carl Alberg. A seaworthy pocket cruiser had worked for him in the past; perhaps he would hit gold again. Nye Yachts began production of the Alberg 22 in 1974. The molds came from Douglas Marine of Port Stanley, Ontario. Douglas had been producing the 22 under the name Douglas 22 because it never had the rights to use the Alberg name. After Douglas declared bankruptcy, Nye Yachts managed to get both the molds and permission to use the Alberg moniker.

By 1977 Nye Yachts was looking to add to its line. The first was the Carl Alberg-designed Alberg 29, of which around 70 where built. It remains one of Allan's favorites. "Those were our best years," he says. "The 29s were great vessels to sail." The design was a more modern approach to the classic Alberg designs. Though it has a full keel and keel-hung rudder, the beam is wider and carried farther aft. And it was one of the first boats of this size to have propane lockers as standard equipment. Imagine, propane on a boat?!

The 29 was followed by the Alberg 34 in 1979, but only six were built. Things were looking up for the young company. As was the case with so many boatbuilders at that time, optimism was rampant. In 1982 Allan moved the company to a larger facility in Bloomfield, Ontario. The new 20,000-square-foot plant would give the company room to grow.

From 1983 until 1984 Allan had 22 workers completing one boat almost every seven days. But in the mid-1980s the boat market went soft. Builders all over North America were closing their doors. Allan managed to get an order to build 10 26-foot Dragonfly trimarans. The customer who commissioned the boats had the molds shipped from Denmark where the boat first had been built by Quorning Boats. Nye Yachts immediately began production on the new multihull. Two were completed before Allan was informed that the buyer could not take the order. He had more than $50,000 invested in the project, more than his company could afford to lose in a slow year. Nye Yachts closed its doors for good.

Not to be dissuaded, Allan returned to Belleville, where he set up Nye Boat Works. As is the case with most forward thinkers, Allan was able to see opportunity in the shrinking new boat market. He began doing repairs and restorations on used boats. The glut of vessels that had sunk the new boat market would provide him opportunity for years to come.

Allan, tending *Diana's* mainsheet.

In 1968, Allan took over management of J. J. Taylor & Sons, which was moving into fiberglass yacht construction. Its first model was the Contessa 26. The boat later was made famous by Tania Aebi, who made a solo circumnavigation in her *Varuna*.

Retirement

Today Nye Boat Works is thriving in the village of Foxboro, north of Belleville. The new owner, Nathan Bresett, says the company continues to do repair and restoration work: "We are capable of doing any repair on boats up to 40 feet, but we specialize in Albergs and Contessas." Allan can be found there most mornings, coffee in hand, a fresh smile on his face. "All I do is have a desk here," he says. It is easy to suspect he does a lot more.

Allan and Evelyn currently live near Belleville, Ontario. Their only child (also Allan) is a professor of civil engineering in Fredericton, New Brunswick. Allan Sr. spends many of his summer evenings on his boat in the Bay of Quinte. *Diana of Hastings*, a fiberglass replica of his original R-boat, is a contender under his command in the Bay of Quinte racing fleet.

Looking at Allan's life makes one think he might just be the Forrest Gump of the sailing world. Like the movie character, he was fortunate to move through an era of change, playing a behind-the-scenes role in each event that defined that era, all the while oblivious to how significant those events would become. To steal a phrase from the movie, "Life is like a box of chocolates; you never know what you are going to get." It's likely Allan Nye Scott still has a few bonbons up his sleeve. The sailing world can only hope so.

***Diana*, at left, shows a turn of speed reaching on Lake Ontario. Allan actively raced her during his years of ownership in the 1960s. In 1974 Allan founded his own company, Nye Yachts in Belleville, Ontario, to build the Alberg 34, shown below, only a few of which were sold. As a young man Allan spent much of his time around marinas and yacht clubs, working on his boat and others, at right above.**

Darren Shroeger, at left, shows that it's not impossible to share the companionway opening with a small air-conditioning unit. The unit is shown below with a view from inside and outside as it is installed in his father's Watkins 27.

Inexpensive cooling

Air-condition your boat for less than $100

by Jim Shroeger

"IT MUST BE 104 DEGREES OUT HERE!" YOU THINK TO YOURself as you walk down the dock toward your boat. It's been just moments since you parked your car and you are dripping. As you pass the new 47-foot Beneteau, you can hear the faint humming of the air-conditioning system. You know the folks on board are comfortable, while the rest of the marina is baking in the August heat wave.

Farther down the dock, you step aboard your own boat (mine is a 1978 Watkins 27), slide back the companionway hatch, and step down into the main cabin … which, happily, is also cool and comfortable. That's my scenario anyway, and it could be yours.

A 1978 sailboat with dockside air conditioning? It must have cost a ton of money! Our boat's air-conditioning system cost less than $100, and installation was easier than you might think.

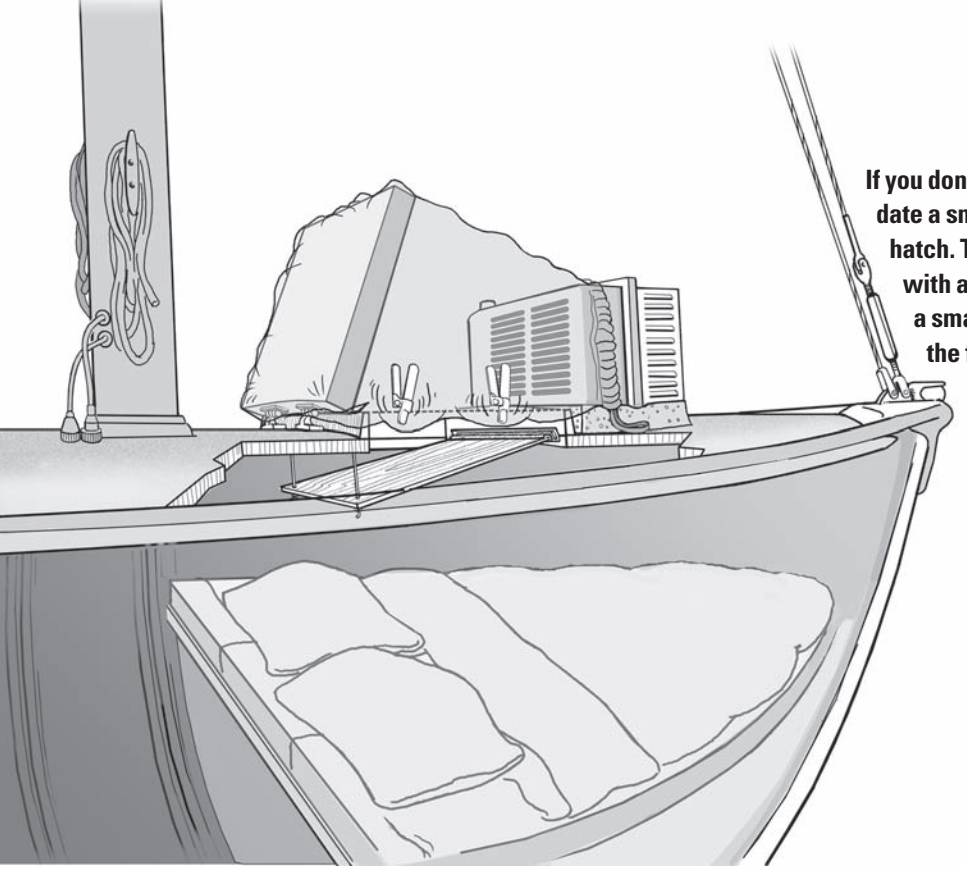
The first step is to go to one of the big-box stores, such as Home Depot or Wal-Mart, and purchase a 5,000-Btu/hr single-room air conditioner. We bought GE Model AGR05L with a 5,150-Btu/hr output for only $79. The important consideration for this portion of the project is to select the smallest size for the optimum output. The smaller the unit, the fewer problems will be encountered during the installation process. The unit I used was 12 inches high, 17 inches wide, and 12 inches deep.

The second step is to determine the best place to install your air-conditioning unit. The two best installation options are the main cabin companionway and the foredeck hatch. If you can make it work there, the companionway is a far better location, as it can cool the main cabin directly.

Spacer block

There are two approaches to installing the unit in the companionway. If you have a bridge deck, your installation will proceed much like mine. First, you need a spacer block (we used a piece of closed-cell foam) under the unit to bring it up to the level of the bottom of the companionway. It's important to have the unit tilt slightly back toward the cockpit to allow for condensation drainage.

Place the spacer block on the bridge deck and locate the unit on the block so the retainer bar on top aligns with your hatchboard slot. (If you do not have a bridge deck, you'll



FRITZ SEEGERS

If you don't have room at the companionway to accommodate a small air-conditioning unit, consider the forward hatch. The unit sits on the bow, forward of the hatch, with a thick plastic bag to create the wind tunnel and a small shield to deflect the majority of the flow from the faces of those sleeping in the V-berth.

have to create two legs to support the unit where it extends into the cockpit.) Now measure the space from the bottom of the unit on the inside to the top of the counter directly below the unit. Cut a support leg (we used an old turnbuckle boot) to fit under the unit. At this point you should have the unit in position and relatively stable. To ensure stability, we used foam-rubber pads on either end of the leg.

To complete the installation, make cardboard patterns of the spaces on either side of the unit. Using these patterns, make filler hatchboard pieces for each side of the unit. We used a piece of luan underlayment for this job. It is thin and has hardwood surfaces that can be stained to match your existing hatchboards.

In our case, the height of the air-conditioning unit was exactly equal to the height of two hatchboards. If your situation is otherwise, you will have to make up a filler hatchboard to fit over the top of the unit. This piece will fill the gap between the top of the unit and the next hatchboard or the companionway slide.

After all the parts have been fitted, sanded, stained, and installed, just plug the unit into your shorepower outlet, turn it on, and sit back in cool comfort. Ain't life grand!

An important consideration when mounting your unit is how you will get into and out of the cabin through the companionway. Do not create a situation that will make exiting the cabin difficult. If your companionway is not wide enough at the bottom to allow you to pass around the unit, consider a forehatch installation.

A note about power consumption: most 5,000-Btu/hr units are rated at 11 to 12 amps. Most marina circuits are set up for 30 amps, while some older marinas are equipped with 20-amp service. So just plug your new unit in and turn it on.

Forehatch installation

If your companionway is too narrow to accommodate an air-conditioning unit, the installation for a forehatch is a bit more complicated. Position the unit on the deck in front of the hatch. The first step is to create a pad of closed-cell foam equal in thickness to the height of the hatch coaming. The size of the pad should be equal to the size of the unit's base (in the case of our GE unit, that would be 12 inches by 17 inches). Use a large contractor-style, 4-mil trash bag with a drawstring closure. Place the open end of the bag completely around the front of the unit and use the drawstring to secure the open end of the bag to the unit. (A piece or two of duct tape will ensure a snug attachment.)

Next, make an I-shaped cut in the bottom of the bag. Align the cut so that when the unit is placed on its pad directly in front of the hatch, the bag can be slid over the raised hatch. In this position the bag should fit over the open hatch so the longer cut is directly in line with the hatch opening. You can use medium-sized spring clamps to hold the sides of the bag to the sides of the hatch. When this is all set up, you will have created a wind tunnel that will direct cool air directly through the hatch opening.

More secure

If you are planning to leave the unit set up for an extended period of time, you can use duct tape to make a more secure attachment of the wind tunnel to the hatch coamings.

There is one problem with using the forehatch as your air-conditioning port. A person sleeping in the V-berth will soon complain that the cold air blowing directly on him or her is too chilly. This problem can be avoided by making a deflector from a piece of rigid lightweight material (luan underlayment is excellent for this application).

Place an adhesive Velcro strip along one edge of the deflector and the corresponding piece of Velcro on the inside of the forward side of the hatch opening. Secure two short pieces of ⅛-inch line to the two opposite corners of the deflector. Place 1-inch self-adhesive Velcro dots on the free end of these lines and the corresponding Velcro dots on the two aft corners of the hatch opening. When in use, the deflector is attached to the forward side of the hatch opening while the after end is suspended from the two ⅛-inch lines. When positioned properly, the deflector will blow cool air into the cabin area but will not freeze out anyone sleeping in the V-berth.

There you have it. The total cost of our installation was $79 for the unit, $5 for the closed-cell foam, and $7 for a half sheet of luan underlayment. The stain and varnish were already on board as part of our ship's stores. The total cost was $91. Can you beat that for a cool deal?

A bluewater-capable yacht

Jim and Sue Corenman completed a circumnavigation on their Carl Schumacher-designed, custom Concordia 50, *Heart of Gold*.

JIM CORENMAN

Narrowing the field

by Beth Leonard

This excerpt from Beth Leonard's new book, The Voyager's Handbook, *second edition, is the first of a three-part series on selecting the right sailboat for extensive passagemaking. Adapted with permission from International Marine.*

PART ONE

Marine books and magazines devote thousands of pages and millions of words to describing the "perfect" offshore yacht. Yet very few of us can afford the new boats reviewed in the pages of the marine magazines. Those of us with finite resources and a desire to do more than dream have all had to compromise to find a capable, seaworthy boat that fits our budget. As much as most cruisers love their boats, we've never met a crew who claimed their boat was perfect.

When it comes to boats, the opinions of experienced bluewater voyagers are often difficult to reconcile and sometimes even completely contradictory. Should you buy a 30-foot, heavy-displacement, full-keel design like Lin and Larry Pardey's *Taleisin*; a 78-foot, light-displacement, fin-keel design like Linda and Steve Dashew's *Beowulf*; or one of the thousands of designs in between? Or should you consider one of the many production cruising multihulls now on the market? Where do you start when figuring out what boat will be right for you?

The first and most important step is determining how much boat you can afford. The amount you can spend will reduce the galaxy of available boats to a mere solar system.

You will be able to narrow the options even further when you decide what type and size of boat best suits your needs and what age of boat best fits your budget. From there, it's a matter of legwork and perseverance. You'll need to evaluate individual boats against the requirements for a competent offshore voyager until you find the right boat for you — one you can afford that not only meets your requirements for comfort and safety but also touches your heart and captures your imagination.

Go to a place like Papeete in Tahiti or Las Palmas in the Canaries at the height of the cruising season, and you will find every conceivable combination of design, hull material, keel configuration, rig, age, and size. Older, smaller, less expensive boats allow people without much money to live their dreams and keep company with those who can afford the newest, biggest, and most modern bluewater voyagers.

What type of boat do you want?

Even a cursory look at the variety of "expert" opinions out there makes it clear that reasonable people can come to very different conclusions when picking a boat for cruising. One key to finding a boat you will be happy with, one you will trust and enjoy living aboard, is understanding how your needs match up against the strengths and weaknesses of the various types of cruising boats. Offshore monohull design has produced four major cruising boat types; the three most popular are shown in the table on Page 29. Each new type has incorporated proven innovations in design and materials from offshore racing yachts into offshore cruising boats. These types are not discrete — they lie along a continuum, and many boats straddle the borders between them. But they differ markedly along all the major design parameters and make different trade-offs between comfort and speed.

Over the last century, production yachts designed for offshore sailing and bluewater cruising have become lighter, more powerful, and more manageable. Boats at the

Lin and Larry Pardey's *Taleisin*, at left, has circled the globe and doubled the Horn. Scott and Kitty Kuhner's Valiant 40, *Tamure*, below, has sailed more than 100,000 nautical miles, completing a circumnavigation and competing in numerous demanding offshore races.

cutting edge have always pushed the limits of durability and comfort, and sometimes of safety. Each stage of yacht design includes seaworthy, livable vessels that can make excellent long-term bluewater voyagers as well as boats that lack the stability or durability to live up to the sea's exacting standards.

Traditional voyagers – Early offshore cruising boats were made from wood and incorporated the knowledge gained over generations to create strong, safe, seaworthy boats. The lines were taken from small vessels meant to brave the meanest of seas, such as coastal trading and fishing boats, whaleboats, and Scandinavian double-enders originally designed as pilot boats and rescue craft. Spars were constructed from wood; sails were made from canvas; line was made from hemp. These materials limited design innovation. The traditional voyager that resulted had been taken to the highest level of design possible, given the strengths and weaknesses of the materials available.

When fiberglass began to replace wood as the material of choice for boatbuilding in the late 1950s and early 1960s, many boatbuilders took proven wooden designs and built them in the new material. Thus, most of the earliest traditional voyagers have long full keels, often with transom-hung rudders; most are relatively shallow for their length, and many are double-enders. Examples include the Bristol Channel Cutters, the Colin Archer designs, and the Westsail 32. These are the types of boats that sailing authors Lin and Larry Pardey advocate for offshore cruising. A few production boatbuilders — such as Cape George and until recently Sam L. Morse — produce such boats. Other builders — such as Pacific Seacraft, Cabo Rico, and Malö — build modified fin-keel boats with skeg-hung rudders whose ratios put them in the traditional voyager category. Sailing author Nigel Calder prefers these boats, which combine some elements of modern design with the strength and comfort of traditional voyagers.

As the table shows, traditional voyagers can be characterized as slow but safe and comfortable. By modern standards, they displace a lot and don't carry much sail area for their displacement. They will rarely reach hull speed and will exceed it only if caught by a 40-knot squall while running downwind under full sail. The large keel area and heavy displacement damp motion in a seaway, allowing the crew to move around safely and sleep comfortably.

Traditional voyagers take care of their crews and are comfortable even in a blow. They are easy to heave-to and to control when running off in anything but extreme breaking seas, and they can manage just about any conditions as long as they have sea room. But their shallow keels and low ballast ratios make for disappointing performance to windward. They are sluggish under power, difficult to maneuver in a marina, and all but impossible to back up in a straight line. They'll get even inexperienced crews safely to port, but they may take a few days longer to do it than more modern designs.

Performance cruisers – In 1973, Bob Perry drew the lines for the Valiant 40, which married a skeg-hung rudder and a modified fin keel to the balsa-cored fiberglass decks and larger rig becoming prevalent in the offshore racing fleets. With a displacement to length ratio (DLR) around 250 and a sail area to displacement (SA/D) ratio around 17, the Valiant 40 had more in common with the racy Cal 40 than the offshore cruising boats of the time. The term "performance cruiser" was coined to describe this groundbreaking example of a new genre of bluewater cruising boats.

Over the last three decades, dozens of production boats have been built incorporating many of the elements of the Valiant design philosophy. A number of these are still being manufactured today and are considered by many to represent the perfect marriage between performance and comfort. These include the current range of Hallberg-Rassys, all but the newest Swan and Oyster designs, Calibers, Passports, Shannons, Tayanas, Taswells, and, of course, the Valiants, to name just a few. Some older designs with modern underbodies originally intended for coastal cruising or offshore racing — such as the Ericson, Cal, Tartan, and International Offshore Rule (IOR) One-Ton designs — have also joined the ranks of offshore voyagers.

When we began our first circumnavigation in 1992, most new charter and coastal boats carried fin keels and spade rudders, but these had been incorporated into only a few offshore production cruising boats. By the time we left on our second voyage in 1999, more than a quarter of the production boats being built for offshore cruising had fin keels and spade rudders. Today it's hard to find a newly introduced bluewater design with a full skeg or relatively

BILLY BLACK

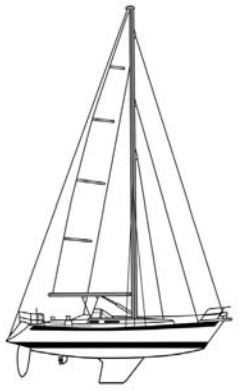
long keel. In practice, this means that new boats maneuver much more easily under power, but it also means the occasional rudder failure as new materials such as carbon fiber are adapted to this high-load purpose.

The vast majority of cruising boats sailing the world's oceans fall within the performance cruiser category. They run the gamut from the Island Packets with their cutaway full keels to middle-aged Swans with their fin keels and spade rudders. Over the course of three decades, new materials such as foam cores, S glass, and more recently Kevlar and carbon fiber have been incorporated into the next-generation hulls. Each time lessons have had to be learned about the shortcomings and limitations of the new materials, and some production designs suffered from osmotic blistering, core failures, and delamination. Over time, boatbuilders have learned how to address these issues to create lighter, stronger boats.

A number of well-known sailing writers have made voyages in boats whose ratios put them into the performance cruiser category, including Liza Copeland, John Neal and Amanda Swan-Neal, Webb Chiles, and John Gore-Grimes. Both of our boats have been performance cruisers, though at opposite ends of the spectrum. Our Shannon 37, *Silk*, fell near the border with traditional voyagers, while our Van de Stadt 47, *Hawk*, lies near the border with racer/cruisers. Their quite distinct sailing characteristics help clarify the differences between the various categories.

As the table below shows, although the performance cruisers are still heavy enough to carry cruising loads without sacrificing performance, they are large enough, light enough, and have enough sail area to average an extra 10 to 15 miles per day on long passages. Their moderate keel areas and displacements keep motion comfortable even in large seas, while more efficient ballasting provides greater stability (and therefore sail-carrying ability) than many traditional designs. Depending on keel configuration, these boats range from easy to all-but-impossible to heave-to, but their greater stability means they need to heave-to infrequently, if at all, in trade wind conditions. Most run off very well, although those capable of surfing may require some active manage-

Different monohull design types

	Traditional voyagers	Performance cruisers	Racer/cruisers
	 full keel	 modified fin keel	 fin keel, round sections
Examples	Bermuda 40, Bowman 36, Westsail 32, Mason 43, Nicholson 40, Trintella 45	Valiant 40, Swan 46, Oyster 43, Island Packet 38, Baltic 38, Norseman 447	X-402, Swan 45, J/160, Beneteau 50
Ratios:			
Displacement to length ratio (DLR)[1]	>300	200-300	100-200
Sail area to wetted surface area ratio (SA/WSA)[1]	2.3-2.5	2.3-2.6	2.6-2.9
Sail area to displacement ratio (SA/D)[1]	15-17	17-19	23-26
Length to beam ratio (L/B)[1]	2.8-3	3-3.2	3.3-4.0
Ballast ratio[2]	33-35%	36-39%	38-42%
Motion comfort ratio	35-45	25-35	20-25
Rated speed to theoretical hull speed[1]	67-72%	70-74%	73-78%
Profile of an "average" boat:			
Length overall (LOA) (ft)	40	40	44
IMS displacement (lb)	24,300	21,650	20,425
Length at waterline (LWL) (ft)	31	33.5	38.4
Beam (ft)	11.6	12.5	13
Draft (ft)	5.5	6.4	7.7
Wetted surface area (sq ft)	350	350	380
Working sail area (sq ft)	850	858	1,100
Estimate of average miles per day on passage	120-125	130-135	140-145

[1]Calculated using data from USSA's *Performance Characteristics Profile of the North American IMS Fleet* (2004 edition).
[2]Manufacturer's ballast/displacement in IMS trim. IMS = International Measurement System.

ILLUSTRATIONS BY FRITZ SEEGERS

Janet and Ken Slagle have cruised aboard their Santa Cruz 52, *Aquila*, for seven years and 30,000 miles.

ment (such as trailing a drogue) to remain in control. Performance cruisers sail much better to windward than traditional voyagers and are reasonably agile under power.

The performance cruisers also have more interior volume than traditional voyagers and are almost as comfortable and as hard to get into trouble with. In the most extreme conditions, however, they are slightly less forgiving and demand slightly more from their crews.

Racer/cruisers – New, lighter, stronger materials — including carbon fiber for hulls and spars, Kevlar for hulls and line, and Spectra for line and sails — have been developed for use on sailboats. In some cases they failed initially, but eventually they proved their usefulness aboard round-the-world racing boats. These materials, along with aspects of high-performance boat design, have slowly been adapted to offshore cruising boats.

When the materials became light and strong enough to build a durable, offshore-capable boat with a DLR of less than 200, the bluewater racer/cruiser was born. Many of these, such as the J/40 and J/120, were intended for racing first and foremost; others, like many of the Beneteaus and Jeanneaus, were designed for the burgeoning charter market. As these designs have grown dated, boats like the Beneteau First 40.7 and the larger Js have found their way into the offshore cruising fleet. Others, such as the J/160 and Farr Pilot House designs, were introduced as high-performance offshore cruising boats capable of sailing 200-mile days.

Like the boats at the performance end of the performance cruiser spectrum, racer/cruisers all have fin keels and spade rudders. But their keels and rudders tend to be deeper, and their hulls have flatter sections, have finer entries, and carry their beam farther aft. Keel and rudder foils have improved in both hydrodynamic efficiency and balance. Ballast is often concentrated in a bulb end plate attached to the bottom of the keel, which increases the righting moment created by a given weight of ballast. Their lighter displacements allow them to carry less sail area than a similarly sized traditional or performance cruiser design, easing sail handling for a shorthanded crew. In International Measurement System (IMS) trim, these boats sail faster on every point of sail, point higher, and surf far more easily than performance cruisers.

However, the current racer/cruisers have some drawbacks as long-distance offshore voyagers when compared with their heavier counterparts. Their flatter, fatter hull shapes surf well and create spacious accommodations, but their shallow bilges offer little in the way of stowage and don't keep bilge water confined to the sump. To maintain their performance edge, these boats need to be kept reasonably light, which means they can't carry the same payload as heavier boats. While modern sail-handling techniques have made large sail plans manageable for a shorthanded crew, racer/cruisers can be unforgiving if caught with too much sail up in a 40-knot squall. The speeds these boats are capable of reaching can lead to pounding in big seas. Many crews we've met on racer/cruisers slow the boats down in stronger winds to improve the motion, which reduces their performance advantage.

Running downwind in heavy weather and large waves, these boats will surf at exhilarating speeds even under bare poles. Although most remain under control if hand steered, some will not look after themselves under self-steering unless slowed down. The forces generated when a boat falls off a wave at 15 or 18 knots instead of 6 or 7 puts huge shock loads on sails, rig, rudder, and hull; as a result, these boats need to be significantly stronger than heavier boats, in large part because they can sail faster. At the same time, some extra material here and there to add strength makes little difference in a heavy boat, but a light boat has to be engineered and built exceptionally well to stand up to more than a few years of offshore cruising.

The difficulties of building strong, lightweight production boats have led to a number of problems, including broken rigs and rudders, bulkheads separating from hulls, keels cracking, keel bolts breaking, and hulls flexing and sagging. Boats marketed as offshore cruisers from their inception are more likely to stand up to the rigors of long-distance bluewater cruising than those originally designed and built for racing and chartering.

As the table shows, racer/cruisers deliver, on average, 10 to 15 miles more each day than performance cruisers and 20-plus miles more than traditional voyagers. To realize that potential, however, a boat must be kept light, which normally means not taking along many gadgets and goodies. It also means not carrying as much in the way of stores, fuel, or water, which translates into less self-sufficiency and a more limited cruising range. And although passages may be faster, they're likely to be more uncomfortable in boisterous conditions. The boat will need to be actively managed instead of left to her own devices running before strong winds and big seas.

On the other hand, even when slowed down, these boats can easily and comfortably average 6 knots over the course of a long offshore passage, more than respectable for any cruising boat. Racer/cruisers sail extremely well on any point of sail, so they will be able to sail themselves out of just about any situation. They are agile and efficient under power and easy to maneuver in a marina. These boats need an experienced crew to keep them out of trouble, but they'll often be the first boats into port, and their crews will be relaxing on deck drinking margaritas when the rest of the fleet makes its way in.

Cruising sleds – In the last decade, materials and building techniques have improved to the point that the fastest monohulls in the world now have DLRs of less than 100 and SA/D ratios well over 30. Sometimes called ultralight-displacement boats (ULDBs), these include maxi racers such

as *Skandia*, the 2004 winner of the Sydney-to-Hobart race, and the Open 60s used in the Vendée Globe nonstop, round-the-world race. It was only a matter of time before someone translated this thinking to production cruising boats, and today there are a few examples of what have been dubbed "cruising sleds," most notably the Santa Cruz 52.

All the attributes of racer/cruisers apply even more so to cruising sleds. The boats can be very fast, and they do manage 200-mile days, but they must be kept very light. Hal Roth completed two BOC races in his Santa Cruz 50, *American Flag*, which proves that at least some of these boats can withstand Southern Ocean-style punishment. However, production cruising sleds are too new to have a proven cruising track record, so their long-term durability remains to be demonstrated.

Many design innovations are occurring in this category as naval architects try to adapt aspects of the maxi, Vendée Globe, and Volvo raceboats to cruising boats. Designers have been experimenting with ways to reduce keel depth, and the current approach uses hydraulically lifting keels. These are complex and take up a lot of space in the interior, but several newer cruising boat designs have incorporated them. Other innovations from racing boats, such as water ballast to make a boat sail flatter and faster and twin rudders to prevent rudder stalling and cavitation, have made their way into some of these cruising designs.

Whether racer/cruisers and cruising sleds ever come to dominate offshore cruising as performance cruisers have done in the last two decades will depend upon how durable and comfortable they prove to be. No matter what the majority decides, there will always be people willing to sacrifice comfort and cruising luxuries for sailing performance, just as there will always be people willing to sacrifice sailing performance for comfort and manageability.

Cruising multihulls – Monohulls still make up the vast majority of the offshore cruising fleet, but multihulls, particularly catamarans, represent a small but growing percentage. In 2003, 9 percent of the boats participating in the Atlantic Rally for Cruisers (ARC) were multihulls, and that percentage is likely to continue to increase.

Most of the performance ratios used to evaluate monohulls cannot be applied to multihulls, nor do multihulls sort themselves into convenient groupings that can then be compared. But multihulls sail and cruise differently from monohulls. To decide if a multihull makes sense for you, you'll need to weigh the advantages against the disadvantages, just as when trying to choose among different types of monohulls.

We have met dozens of crews cruising in multihulls, and we interviewed a half dozen of those who have cruised catamarans for a long period of time and through a wide variety of conditions. We have never met anyone living aboard and cruising a trimaran. Even 50-foot trimarans are too limited in space and weight-carrying ability to function as comfortable, long-term homes. The following comments, therefore, focus on modern cruising catamarans.

When most sailors think of catamarans they think of speed, but speed is not one of the first advantages cited by most experienced catamaran cruisers. Other things — such as space, shoal draft, and sailing flat — usually get mentioned first. When the discussion turns to speed and

Steve and Dorothy Darden's 52-foot Morrelli & Melvin-designed catamaran, *Adagio*, averaged 190 to 200 miles per day while crossing the Pacific the "wrong way."

sailing performance, many of the comments mirror what we hear from those aboard racer/cruisers or cruising sleds.

If kept light, multihulls surf much more easily than any monohull. But in practice, very few of those we know aboard cruising catamarans under 45 feet in length manage to keep them light. Weight in the bows can be a particular problem, as the bows will bury going downwind, limiting the cat's ability to surf. On average, over long passages, an overweight cruising cat won't outperform a monohull with a similar waterline length, and we've met many cruisers who have been disappointed with their cat's performance in the real world.

On the other hand, like Steve Dashew's hybrids, bigger cats with enough waterline to absorb some payload do manage to sail significantly faster than monohulls with similar waterline lengths. Steve and Dorothy Darden on *Adagio*, a 52-foot Morrelli & Melvin-designed catamaran, have averaged between 190 and 200 miles per day on a half dozen passages, including the slantwise run from New Zealand to Alaska across all the weather zones of the Pacific. The fastest cruising cat we've encountered was a 55-footer designed in Australia. The first 12 feet of each bow consisted of sealed, watertight buoyancy compartments. This greatly reduced interior space but kept the boat light and the bows from burying in waves. The family of four still had more room aboard than most cruisers have on a 60-foot monohull, and they averaged 190 to 200 miles per day.

But large cruising cats, like large cruising sleds, are often not sailed to their full potential. Under certain conditions, most catamarans will suffer *wing slams*, waves that come up under the bottom of the boat and crash into the bridge deck or into one of the hulls. The two conditions that cause this, either alone or in combination, are sailing at high speeds, when the bow waves interfere with one another, and sailing in confused seas. If this "thunder down under" gets too violent, the crew will often slow the cat down. Extra bridge deck clearance helps reduce slamming, but at the expense of increased windage. Multihulls have the advantage over similar-sized monohulls only when sailing off the wind in light to moderate air, when their speed helps bring the apparent wind forward and their limited underbody profile minimizes drag.

So although speed may play a part in the choice of a catamaran, in all but the biggest cats it often turns out to be less important in practice than in theory. Most multihull cruisers we've interviewed rate space as the number one advantage

of catamarans over monohulls. When cruising with children or guests, the separate hulls offer a degree of privacy virtually unobtainable in a monohull less than 60 feet long. Mechanical and electrical equipment can be completely isolated from living areas, eliminating noise, vibration, and unpleasant odors. Most catamarans 40 feet and over have plenty of room for a dedicated workshop or a dedicated office, and often for both.

> **"Sailing flat comes as a revelation to anyone who has always sailed on a slant. You can leave the dock without stowing the tomatoes…"**

Shoal draft probably ranks second among the considerations for picking a catamaran. Even relatively heavy cats in the 50- to 60-foot range will have a draft of only 4½ or 5 feet, a foot or more less than fixed-keel monohulls of similar size. If the hull is designed properly, a cat can be safely beached in order to paint the bottom or repair damage.

Several other advantages become clear only after you've spent some time aboard. The first time we entered *Adagio's* main saloon, Steve Darden greeted us with, "Catamaran advantage number one — visibility." We were treated to a 360-degree view of the cliffs of 4,000-foot-high Mount Wellington towering over the city of Hobart in Tasmania. In addition to its aesthetic advantages, 360-degree visibility from a dry watchkeeping station increases safety on passage.

Many experienced sailors value the redundancy a catamaran provides. Dual rudders, dual autopilots, dual engines, and dual tankage offer an added margin of safety when things go wrong. The twin engines make a catamaran significantly more maneuverable than a monohull without a bow thruster. They also provide redundancy in power generation. Having two engines makes catamarans excellent "powerboats," especially if the engine rooms are isolated from the living quarters. Of course, all that redundancy also translates into higher costs and more maintenance — nothing comes for free!

Sailing flat comes as a revelation to anyone who has always sailed on a slant. You can leave the dock without stowing the tomatoes sitting on the counter or the computer on the nav table. You can head off on passage without putting up leecloths and move around the boat without having a hand firmly on a handhold. When other boats are rolling gunwale to gunwale in an anchorage, a catamaran will do little more than sway a bit from side to side.

Catamarans do have their disadvantages, but these are not as obvious as they might appear. The motion, which most people see as an advantage, can be a problem for some. When the U.S. Navy was testing hull forms for use on troop ships, the multihull form proved to be more fatiguing than comparable monoholls. Anybody who has sailed a monohull knows that the body learns to anticipate what will happen next and compensate for it. But the two hulls on a multihull often move to two different waves, with no discernible pattern. When conditions really deteriorate, some crewmembers may feel "like a golf ball teed off in a bathroom," as one experienced offshore multihull sailor put it.

If you're like most sailors, you know how you react to the motion from strong winds and big waves on a monohull but have never experienced such conditions on a multihull. If you're considering purchasing a multihull and have never sailed one, charter a catamaran with your crew for a few weeks and make sure to take it out in some moderate waves to see how everybody reacts.

Many people are put off by the fact that, with a catamaran, what goes down doesn't necessarily come back up. Monohulls depend upon weight in the keel for stability; catamarans depend on their beam and overall size to stay upright. If a well-designed monohull capsizes, its keel will help bring it back upright. But when a catamaran capsizes, it won't right itself. On the other hand, monohulls sink, which properly designed catamarans shouldn't do. In the end, a large, well-built multihull is about as likely to capsize as a large, well-built monohull is likely to sink. Both events are rare. In our decade of offshore voyaging, we know firsthand of one case of a monohull sinking and none of multihulls capsizing.

One serious disadvantage of a multihull can be finding a place to "park." In some cruising areas, few marinas have slips large enough to accommodate the beam of a catamaran over 40 feet in length. Where space is available, marinas may charge for two slips or by the square meter, doubling marina costs. On the plus side, a cat can easily carry a large dinghy with outboard motor on davits, making anchoring and dinghying to town more convenient than on many monohulls. Still, finding places to take on fuel and water can be problematic in parts of the North Atlantic, South Africa, Japan, and South America, where marinas were built to cater to 35-foot monohulls. Like racer/cruisers and cruising sleds, cats need to be built strong enough to withstand the forces they generate. When a monohull heels, it dissipates much of the force of the wind in the sails. Multihulls don't heel, so their rigging and sails must be significantly stronger than on a similar-sized monohull.

As with racer/cruisers and cruising sleds, building a strong, light, durable boat is much more difficult and expensive than building a strong, heavy one. Cruising cat design is still in its early stages compared with monohull design. Catamarans now 15 to 20 years old were built very early in the design evolution, when many structural issues had yet to be resolved. Rudder loads can be quite high on a catamaran, and this is a common area of failure in older cats. This is where duality makes a big difference — a cat that has lost one rudder can still be steered with little difficulty until the rudder can be fixed.

Ten years ago, new catamarans could easily be double the price of a new monohull of similar overall

Catamaran prices[1]

Age	35-39 feet	40-44 feet	45-50 feet	50-54 feet
>20 years	$100,000	N/A[2]	N/A	N/A
10-20 years	$150,000	$185,000	$265,000	$420,000
<10 years	$190,000	$290,000	$410,000	$550,000

[1]Average prices for a random sample of 81 name-brand offshore catamarans by age and size (U.S. dollars). Average price is 90 percent of asking price.
[2]Too few boats available in size/age range to allow a meaningful average.

length. Very few of the catamarans available are more than 15 years old, which means there aren't many inexpensive ones around. Prices are slowly coming more in line with monohulls and are now almost comparable in the 40- to 50-foot range for 10- to 20-year-old cats. Given that a 40-foot catamaran has at least as much space as a 45- to 50-foot monohull, it can be argued that catamarans cost less than comparable monohulls. The table on the facing page summarizes average prices for 81 offshore catamarans listed in national sailing magazines in the same month.

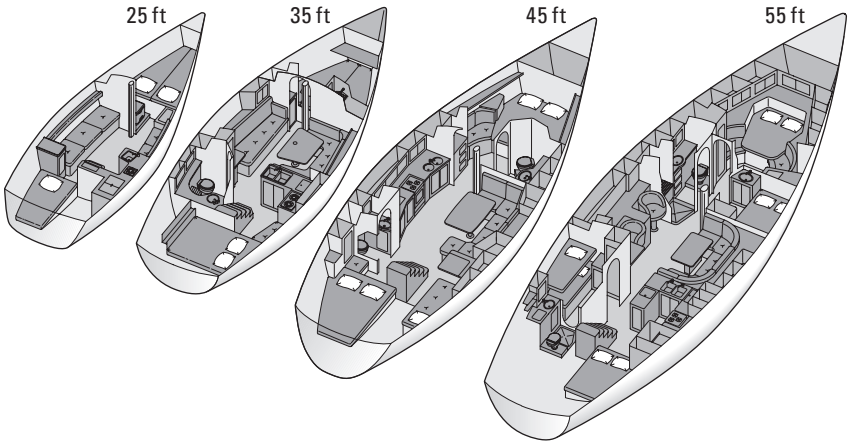
Many of these catamarans have worked the charter trade; these will have many hours of use on mechanical equipment and may have suffered groundings. After five years in charter, many cats will have 3,000 hours or more on their engines. Engines, transmission, refrigeration, and charging systems may all need to be replaced. Bottom repairs will be the most difficult to spot, since they are often covered well with fiberglass and bottom-paint. Yet there are more good-quality catamarans available now than ever before, and prices should continue to come down as more cats leave charter fleets and find homes with voyaging crews.

As with the different types of monohulls, catamarans suit the needs of a specific set of sailors. If your plans call for a large crew (four or more), a catamaran will be the least expensive way to get a boat with comfortable accommodation for everyone. If you plan to sail in areas with light winds, shallow waters, and good anchorages, a catamaran will offer significant advantages over most monohulls. But you'll need to buy a strong, structurally sound catamaran, and you may need to reinforce key structural areas like the rudders and the rigging.

What size boat?

An overly large boat can ruin a voyage. For each 10-foot increase in boat length, the hours spent on maintenance double and boat-related costs triple. Unless you can afford full-time crew, cruising a monohull over 55 feet or a catamaran over 50 feet will likely force you to pick up extra crew for passagemaking. In many places, a large boat will limit the choice of marinas and make it harder to get fuel and water.

Production offshore boat size and cost



Boat length	25.0 ft	35.0 ft	45.0 ft	55.0 ft
LWL at 0.8 LOA	20.0 ft	28.0 ft	36.0 ft	44.0 ft
Beam	8.5 ft	11.5 ft	14.0 ft	15.5 ft
Displacement[1]	5,400 lb	12,000 lb	24,000 lb	42,000 lb
Length/beam ratio	2.94	3.04	3.21	3.55
Displacement/length ratio	301	244	230	220
Cabin area[2]	120 sq ft	240 sq ft	360 sq ft	480 sq ft
Stowage volume[3]	120 cu ft	360 cu ft	720 cu ft	1,200 cu ft
Berths (singles, doubles)	3, 1	2, 2	2, 2	2, 3
Heads, separate shower	1, 0	1, 0	2, 0	2, 1
Tankage (fuel, water)	20, 40 gal	40, 80 gal	150, 100 gal	200, 200 gal
Engine size[4]	14 hp	30 hp	60 hp	105 hp
House battery bank	100 Ah[8]	200 Ah	400 Ah	800 Ah
Sail area/displacement ratio	17.15	18.31	19.23	19.86
Sail area (main and 130% genoa)	330 sq ft	600 sq ft	1,000 sq ft	1,500 sq ft
Mainsail area	132 sq ft	240 sq ft	400 sq ft	600 sq ft
Genoa area	198 sq ft	360 sq ft	600 sq ft	900 sq ft
Primary winch rating	16	40	53	66
Acquisition price for boat without additional equipment:				
Price (15-year-old used boat)[5]	$25,000	$90,000	$230,000	$365,000
Minimum refit costs[6]	$3,750	$13,500	$34,500	$54,750
Sail costs (main and genoa)	$2,000	$5,000	$8,000	$12,000
	$30,750	$108,500	$272,500	$431,750
Estimated annual boat expenses:				
Insurance	$308	$1,085	$2,725	$4,318
Annual maintenance[7]	$1,538	$5,425	$13,625	$21,588
	$1,845	$6,510	$16,350	$25,905

[1]Averages of published values for stock cruising boats.
[2]Cabin area varies in proportion to length × beam.
[3]Space available for stowage and optional systems; actual values depend upon hull shape and can be significantly lower than shown.
[4]Sized at 2.5 hp per 1,000-pound displacement.
[5]Average prices for quality offshore production boats.
[6]Costs to upgrade basic boat structure for offshore, estimated at 15 percent of purchase price.
[7]Average annual expenditure for voyage of five years calculated at 5 percent of boat value per year.
[8]Ah = amp-hours.
Illustration courtesy *SAIL* magazine and Kim Downing.

The larger the boat, the more likely it is to sit for long periods of time once it has arrived somewhere. Very few people take a boat over 55 feet out for a daysail. All of that means more work and less pleasure.

But an overly small boat can cause just as many problems. A boat under 30 feet will be uncomfortable and wet in anything but idyllic conditions. Limited space makes it difficult to have friends aboard for more than a day or so, or to take along the personal items and the comforts and conveniences the crew might want. The lack of stowage space can result in a monotonous diet, and the boat won't be able to carry much in the way of water, tools, or spares. Self-sufficiency and cruising range will be more limited than on a larger boat. The lack of privacy can turn minor annoyances into irreconcilable differences.

Everything aboard a cruising boat is a trade-off, and size is no exception. During our circumnavigation aboard 37-foot *Silk*, she was about average in size for an offshore cruising boat. At that time, the conventional wisdom was to buy the biggest boat you could afford, and almost everyone we met wanted a bigger boat. Those we know who went cruising a second time all went up 10 feet in length, from an average of 33 feet to an average of 43 feet. We wanted a boat around 42 feet, but we couldn't find one that met our requirements and included a well-integrated hard dodger. At 47 feet, *Hawk* is just a bit above the average among today's offshore boats. Now most of the long-term cruisers we meet do not want a boat larger than the one they are on. Instead of the biggest boat you can afford, I would say that you should buy the smallest boat on which you can live comfortably.

Advantages of a larger boat

Our experiences in moving from *Silk* to *Hawk* help clarify the trade-offs between different sizes. By going up 10 feet in boat size, we have gained stability, speed, and space, but the benefits of these gains, while real, have not always been exactly what we expected.

Stability – Size does matter when it comes to stability, but smaller boats can be perfectly safe as long as their limits are respected. In conditions where *Hawk* will happily keep sailing, we would have hove-to on *Silk*. We might not have been making miles toward our destination, but we would still have been perfectly safe. *Hawk's* stability and her ability to sail well to windward keep us sailing in a lot of conditions where she's far happier than we are. But we have depended upon that stability to keep us upright several times in our five years of high-latitude cruising, particularly on the 9,000-nautical-mile Southern Ocean passage eastabout from Cape Horn to Fremantle, Australia.

Speed – We've averaged 148 nautical miles per day on *Hawk* compared with 117 on *Silk*, with part of that increase coming from *Hawk's* stability; that is, her ability to keep going in heavy weather instead of heaving-to. Yet what does that speed really buy us? On a 1,500-nautical-mile passage it means we spend 10 days at sea instead of 13. That may sound like a lot, but after the first week, once we get into the rhythm of a passage, a few days doesn't make any real difference to us. We still cannot outrun fast-moving low-pressure systems.

Our increased hull speed benefits us most where we least expected it, by extending our coastal cruising range during daylight hours. We can now sail some 30 percent farther between ports during the day, which has greatly reduced the need to sail at night in reef-, rock-, or iceberg-infested waters.

Space – Most of *Hawk's* 10 feet of extra length have been devoted to watertight compartments in the bow and stern and a large sail locker forward. As a result, we don't have much more usable interior length than we did on *Silk*, but we do have much more space. *Hawk's* 3 feet of extra beam translate into a tremendous amount of interior volume (see the table on Page 33). Most of that space is devoted to stowage: twice as much water and fuel tankage as *Silk* carried, three times as much clothing storage, twice as many large compartments dedicated to food, four times as many bookshelves, and five times as many toolboxes. This, in turn, translates into much greater self-sufficiency. Our extended cruising range has allowed us to spend up to three months in isoluated and uninhabited areas like the Chilean channels.

Disadvantages of a larger boat

We knew there would be downsides to a larger boat, though for our higher-latitude, liveaboard agenda, we didn't think they would begin to outweigh the benefits, and indeed they have not. None of what follows should have surprised us, but as with the advantages we envisioned, the reality hasn't always matched the theory.

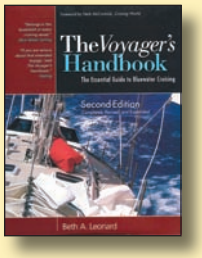
Cost – Costs to maintain a boat at least triple with every 10-foot increase in size. We averaged about $5,000 per year in boat-related expenses for *Silk*, but we've averaged over $15,000 per year for *Hawk*. Both numbers are pretty typical for moderately complex boats of their respective sizes insured at least part of the time. The initial expenditure to buy and outfit the boat also tends to triple with a 10-foot increase in boat length.

Seamanship – Though *Hawk* is much more stable than *Silk* and therefore much "safer" in extreme conditions, *Silk* was much more forgiving. If we misjudged a squall and didn't get the chute off in time, we could wrestle the sock down over it and manhandle it to the deck. If we wrapped the jib during a jibe, we could unwrap it by hand in light air and with a winch in windy conditions. But brute force gets us nowhere aboard *Hawk*. She requires much greater forethought, because the

Continued on Page 58

For further reading . . .

The Voyager's Handbook: The Essential Guide to Bluewater Cruising, second edition, by Beth Leonard, is one of the best resources available for those contemplating bluewater passages. This excerpt is a small part of a thorough reference tool. If you want more, the book is available at <http://www.goodoldboat.com/bookshelf.html> or by calling 701-952-9433.



The space-age sailor

COURTESY OF LOCKHEED MARTIN

Understanding satellites and their benefits

by Don Launer

TODAY ABOUT 2,700 MAN-MADE SATellites circle the Earth, but our satellite age had very humble beginnings. In October 1957, 12 years after the end of World War II, Sputnik, the first man-made satellite, was thrust into orbit around the Earth by the U.S.S.R. In an effort to learn as much about Sputnik as possible, the U.S. monitored the beeping signal it transmitted and was able to track it through the Doppler effect. This was the genesis of using man-made satellites to determine navigational information. But it wasn't until the 1970s when satellite-based navigation, as we now know it, began to take shape. And in recent years satellite technology has created a number of services for today's sailors: entertainment, communication, weather, search and rescue, and navigational information.

Shooting for the stars

Because of limited booster-rocket technology, the early satellites had to have a low-weight payload and a low orbit. In fact, the early satellites were just on the outer edge of the Earth's atmosphere, in what we call a Low Earth Orbit (LEO). For all satellites, both man-made and natural, their height above the Earth determines their orbital (angular) speed. The early LEO satellites had Earth orbits of two hours or less. The elliptical path of Sputnik, with a maximum altitude of about 560 miles, caused the 183-pound device to circle the Earth every 96 minutes. By contrast, we have a satellite that's over a quarter-million miles away from the Earth and takes 28 days to complete an orbit: our moon.

As booster rockets increased in size, larger satellites could be launched into higher orbits. Finally, a satellite was put into an orbit 22,236 statute miles above mean sea level at the equator, in an orbit rotating in the same direction as the Earth. This height was a magical number. In 1945, when man-made satellites were still considered a fantasy, science-fiction writer Arthur C. Clarke proposed that if a satellite could be put into orbit above the equator at this altitude, its angular orbital speed would be the same as that of the Earth and it would appear to be motionless in the sky.

In the 1960s, satellites could finally be placed in orbits that high. This type of satellite is called geostationary. The terminology of satellite orbits is complex, but suffice to say that a close cousin of the geostationary orbit is the geosynchronous. Such an orbit is canted to the equator and/or elliptical, and while the satellite appears more or less stationary (if you could see it), it actually "moves" slightly in the sky. Whether geostationary or geosynchronous in their orbits, such satellites are ideal for providing constant communications with the surface over which they are positioned.

A satellite's footprint

Early satellites employed omni-directional antennas, which sent most of the satellite's transmitted energy into outer space. It wasn't long before the limited powers of the satellites' transmitters were concentrated onto a relatively small portion of the Earth's surface, directed at specific subscribers. The pattern of this concentrated beam was termed the satellite's footprint. As the distance from the center of this footprint increases, the received signal drops off to lower limits of intensity. A satellite whose audience is in the continental U.S. will have a footprint covering just that area and not extending very far beyond.

Footprint maps are available for individual satellites. Contour lines show where the intensity of the signal decreases from beam-center values. Each contour line has a defined signal strength expressed in dBW, referenced to 1 watt of power. These foot-

prints may be global, reaching over 42.4 percent of the Earth's surface (such as that of an individual GPS satellite), or they may be hemispheric, country, or spot footprints.

Satellites for sailors

Navigation – When most sailors think about boating-related satellites, the NAVSTAR Global Positioning System (GPS) comes to mind. It is a satellite navigation system that began with experimental satellites in 1978 and was fully operational by 1995. It was designed for and is operated by the U.S. Air Force, but its signals are freely available and used by millions of civilians worldwide. The basic space segment of this system, known as the GPS Operational Constellation, consists of at least 24 satellites (see illustration on Page 39). There are often more than 24 in space, as new ones are placed in orbit to replace those whose fuel is nearly exhausted.

The GPS constellation has six satellite orbits, with four or more satellites traveling in each orbital plane. These orbits are spaced around the equator 60 degrees apart with the orbital planes canted about 55 degrees to the equatorial plane. With the orbits about 12,000 miles above the Earth, each satellite orbits the Earth about twice a day. This GPS constellation configuration provides the user at any point on Earth with five or more visible satellites at any time. With access to just three satellites, a two-dimensional fix (latitude and longitude) can be determined. With four satellites, GPS receivers can compute a location in three dimensions. This makes the system ideal for aircraft, boats, ground transportation, and hikers.

Each GPS satellite contains an atomic clock and, by measuring the time interval between the transmission and reception of a satellite signal, a spherical line-of-position (LOP) is created around each satellite. The intersections of these spherical lines-of-position determine your location.

The GPS satellites transmit in the microwave spectrum. At these frequencies, the wavelength is very short and the receiving antenna can consequently be very small. One of the problems with these frequencies is that they do not easily pass through things like house roofs, cabintops, or people. If you're holding a hand-held GPS at waist height, the receiver has difficulty acquiring a satellite from the other side of your body.

When initially put into service, the GPS system was so accurate, the Department of Defense deliberately

Our ellipsoidal Earth

In 300 B.C. the Greeks proposed that the Earth was a sphere. But it's not a sphere after all. Due to its rotation, it bulges at the equator and is flattened at the poles. If your GPS receiver believed the Earth were a sphere and if you were sailing near the equator and took an altitude measurement from your GPS, it would report that you were 25 miles high, since you'd be on top of the equatorial bulge. Not only altitude is affected, however; this bulge also stretches the lines of latitude and longitude.

The shape of the Earth is more like an ellipsoid. Ellipsoids come in all types of mathematical shapes. The first ellipsoid to represent the Earth was promulgated in 1866 and was known as the Clarke Ellipsoid.

By the 20th century we knew the Clarke Ellipsoid was not very accurate, and in North America, we developed the North American Datum Ellipsoid of 1927, or the NAD-27 ellipsoid. Although this ellipsoid was fairly accurate for North America, it wasn't for the rest of the world, and the World Geodetic Survey developed a new mathematical model in 1966. It was called the World Geodetic Survey Ellipsoid of 1966, or WGS-66. The mathematical models continued to be refined, with WGS-72 following until, finally, WGS-84 was developed. In North America a new ellipsoid was also proposed, the NAD-83. The NAD-83 and the WGS-84 are, for all practical purposes, identical.

Any specific location on the face of the Earth can be defined by different latitudes and longitudes, depending on the chart datum used to make the measurement. Hundreds of charts do not coincide with WGS-84/NAD-83. Your GPS receiver can be programmed for many different chart datums, but nearly all GPS receivers now sold have a default that puts them on the WGS-84/NAD-83 ellipsoid model.

Nevertheless, **it's very important that the latitude and longitude lines on the chart you are using (the chart datum) make use of the same measuring system as your GPS receiver.** All U.S. charts now use latitude and longitude lines based on the WGS-84/NAD-83 ellipsoid, but charts outside of the United States may be using a different model. If so, that chart datum model is generally printed on the chart. When using that chart and navigating with GPS, reset your GPS for that datum. Most modern GPS receivers have a hundred or more worldwide chart datums available. These can be accessed by entering the Menu, System, and Units tabs.

The geoid

It may look as if ellipsoids have made up for the fact that Earth is not spherical, but not so. The actual shape of the Earth is a geoid. The geoid is the sea-level surface of the Earth. This sea-level geoid varies widely from the theoretical WGS-84/NAD-83 ellipsoid. But programming a GPS receiver for a geoid takes a large amount of memory, since the true shape of the Earth, the geoid, doesn't follow any simple mathematical formula.

If you have an older GPS and you look at your altitude when sitting in your boat off the coast of New Jersey, you'll see that your elevation is about 70 feet above sea level. But if you have a relatively modern, expensive GPS receiver, with the geoid irregularities entered into its memory, it will compensate for the fact that this section of the East Coast is on one of the Earth's geoidal bulges.

GPS vulnerability

There's no doubt that GPS is a fantastic navigational tool, but don't throw away your Loran receiver yet. Loran and GPS offer complementary technologies and are not prone to the same modes of failure, which makes them ideal backups for each other. Whereas GPS is a satellite system that receives

introduced an error into the civilian GPS system to maintain an accuracy advantage over potential enemies. Selective Availability (SA) manipulated, or "dithered," the atomic clock output of GPS satellites, degrading the accuracy of the position signals available to civilians up to 100 meters.

However, this deliberate error posed a potential hazard to users. If a boat were coming through a narrow inlet in a fog, the error margin could put it on the rocks. In North America, the Canadian and U.S. Coast Guards established low-frequency AM ground stations along the coast. Accessing the data from one of these Coast Guard stations would counter the SA error and improve position accuracy to about 10 meters. This augmentative service, Differential GPS (DGPS), requires a separate antenna system and receiver, which is frequently more expensive than the GPS receiver itself. Finally, in May 2000, the SA error was discontinued (officially, the SA value was set to zero); overnight, GPS users worldwide had a dramatically more accurate system.

There were still potential errors in the system, such as clock errors, ionospheric and tropospheric delays as the signal travels from the satellites to earth, earth reflections, satellite orbital drifts, and control errors. But DGPS ground stations could reduce most of these errors. Unfortunately, those ground stations not only required the separate receiver and antenna, but also had limited range and were subject to noise and fading. So geostationary satellites, operating in the same frequency band as the GPS satellites, were put in orbit. These new satellites provide corrections that can be received directly on a GPS antenna without the need of a separate receiver and antenna system. This improved correction system is known as the Wide Area Augmentation System (WAAS).

No matter how accurate the system may be, bear in mind that your charts may have been created in a day in which this level of accuracy was not available. The accuracy of GPS has challenged hydrographic services around the world to improve their cartography before releasing official digital versions that can be used in concert with GPS.

Satellite weather – Satellite weather is available on a subscription basis and can provide the sailor with weather maps that can be directly overlaid on multifunction displays (MFDs) or printouts. In addition to seeing weather in your vicinity and along your pro-

very small amounts of radio-frequency power from orbiting satellites and operates at extremely high frequency, Loran is a land-based system that sends out a very high-powered radio wave and operates on an extremely low frequency. The very fact that GPS operates on an unbelievably small amount of received power makes it very susceptible to jammers or hackers. For anyone with a good knowledge of electronics and about $100, the weak GPS signals received from orbiting satellites can be disrupted over a wide area. Conversely, it would take a huge antenna array and very large and high-powered equipment to create a similar problem for Loran.

Today, the U.S., Canada, and Russia operate a Loran-C network that is accurate to within 400 meters, but can give positions as accurate as 50 meters in what is known as "time difference repeatable mode." In the U.S. there has been a move to phase out Loran, since GPS is so much more accurate and practical. Most other countries that operate their own Loran systems have never favored the idea of making a complete changeover to GPS and have actually been increasing their Loran coverage.

Nations around the world were alerted to the vulnerability of the GPS system when, at the 1997 Moscow Air Show, a jammer disabled the GPS signals over a 150-mile radius. The implication was that a backup system should remain in place. On occasion, the U.S. Federal Government conducts GPS interference tests, exercises, and training activities that involve jamming of GPS receivers. These events go through a lengthy coordination process involving the Federal Aviation Administration, the U.S. Coast Guard, the Department of Defense, and other government agencies. A list of the times and locations of these jamming tests is available on the USCG's navigation website. Nevertheless, **many of us have noted that our GPS navigation system becomes useless when near naval maneuvers.**

The need for a reliable backup system on board was dramatically illustrated on Sunday, July 17, 2004, when all the Icom WP360 GPS chart plotters crashed simultaneously. Engineers at the parent company were stumped, and it took a month before the problem was solved. All of these units then had to be returned for an upgrade, so boaters with this particular chart plotter were required to go back to basics temporarily.

Recently the Chinese demonstrated that satellites were vulnerable to attack from ground-based missiles. Even though they publicly announced that this was just a test, the implications and potentials are clear. In January 2007, Congress approved funding for Loran for another year. The Canadian Coast Guard says Canada's part of the Loran-C network in North America "will be in operation until further notice."

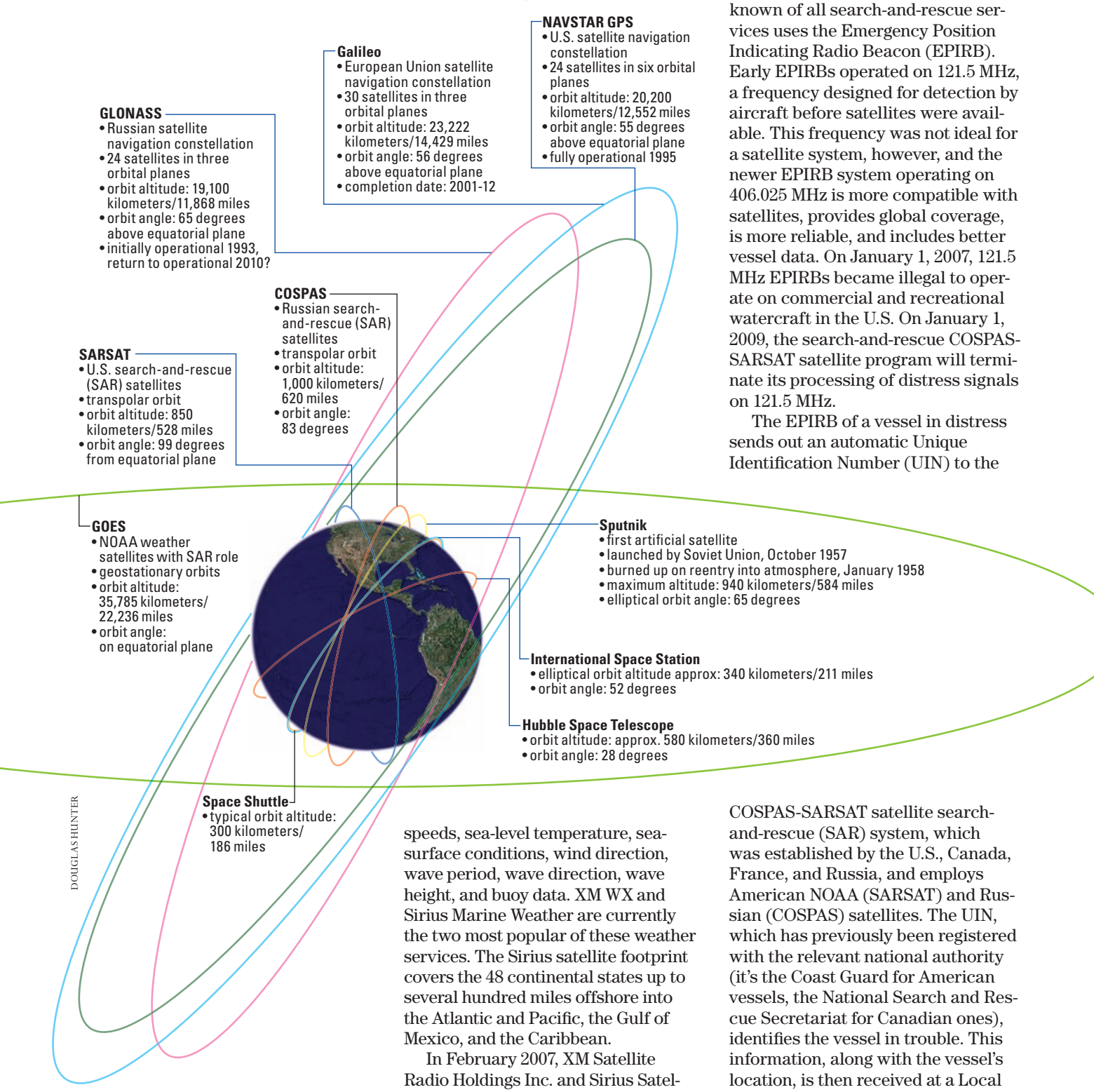
Other systems

Nearly all of the rest of the world uses the U.S. GPS system for navigation. But since this system was developed and is controlled by the U.S. military, it is looked upon with suspicion outside this country. In addition, the geostationary Wide Area Augmentation System (WAAS) satellites that were launched by the U.S. have a footprint that provides only for North American correctional coverage. Thus, Japan has launched a separate WAAS satellite, the MSAS, while Europe uses EGNOS.

Overseas, countries are developing their own global positioning systems. Russia pronounced GLONASS (Global Navigation Satellite System) operational in 1993, but the system fell into disrepair and is being rebuilt. Information from the Russian Space Agency indicates that 12 of 24 orbital planes were filled in 2006. The Galileo Positioning System (called Galileo) is being developed for the European Union and the European Space Agency by a private consortium; China and Ukraine have also joined in. It is supposed to be in operation by 2011 or 2012. Interoperable with NAVSTAR GPS and GLONASS, Galileo is expected to anchor a new global navigation satellite system that is under civilian control.

What's up there

essential satellites for sailors (and skywatchers)



DOUGLAS HUNTER

jected path, the service provides current conditions, surface analysis of the high- and low-pressure centers, marine forecasts and warnings, tropical storm tracks, lightning information, hurricane tracks, visibility forecasts, wind speeds, sea-level temperature, sea-surface conditions, wind direction, wave period, wave direction, wave height, and buoy data. XM WX and Sirius Marine Weather are currently the two most popular of these weather services. The Sirius satellite footprint covers the 48 continental states up to several hundred miles offshore into the Atlantic and Pacific, the Gulf of Mexico, and the Caribbean.

In February 2007, XM Satellite Radio Holdings Inc. and Sirius Satellite Radio Inc. agreed to merge. This merger faces regulatory hurdles in Washington with the Federal Communications Commission and will need anti-trust approval from the Department of Justice. At this writing, the merger was not yet consummated.

Search and rescue – The best known of all search-and-rescue services uses the Emergency Position Indicating Radio Beacon (EPIRB). Early EPIRBs operated on 121.5 MHz, a frequency designed for detection by aircraft before satellites were available. This frequency was not ideal for a satellite system, however, and the newer EPIRB system operating on 406.025 MHz is more compatible with satellites, provides global coverage, is more reliable, and includes better vessel data. On January 1, 2007, 121.5 MHz EPIRBs became illegal to operate on commercial and recreational watercraft in the U.S. On January 1, 2009, the search-and-rescue COSPAS-SARSAT satellite program will terminate its processing of distress signals on 121.5 MHz.

The EPIRB of a vessel in distress sends out an automatic Unique Identification Number (UIN) to the COSPAS-SARSAT satellite search-and-rescue (SAR) system, which was established by the U.S., Canada, France, and Russia, and employs American NOAA (SARSAT) and Russian (COSPAS) satellites. The UIN, which has previously been registered with the relevant national authority (it's the Coast Guard for American vessels, the National Search and Rescue Secretariat for Canadian ones), identifies the vessel in trouble. This information, along with the vessel's location, is then received at a Local User Terminal (LUT), which is a satellite ground station. The information goes to a Mission Control Center (MCC) and then to a Rescue Coordination Center (RCC), from which rescue operations are deployed. The position of a 406-MHz EPIRB is

determined by using a LEO satellite employing Doppler shift, which takes time for an accurate fix to be acquired.

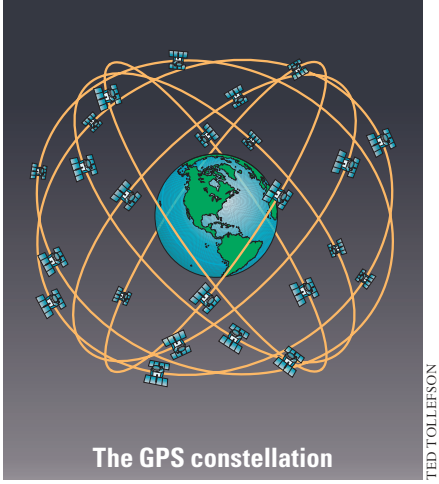
The weakness of the EPIRB system is the use of satellites that follow transpolar orbits. Because they are constantly orbiting, there can be a lag of hours from the time an EPIRB sends out a distress signal to the moment that a COSPAS-SARSAT satellite is in a position to receive it. The system is augmented by the use of geostationary weather satellites, which can promptly detect an EPIRB signal. Because they're geostationary, they can't use Doppler shift to pinpoint the location, but they are important in getting a search and rescue under way.

For instantaneous positioning of a distress signal, there is GPIRB, which is an EPIRB with an internal GPS that transmits an accurate fix without the Doppler-shift location delay.

In addition to the EPIRB, which is tied to a specific vessel, offshore sailors, hikers, and others can now wear individual locators, Personal Locator Beacons (PLBs). These devices are smaller and less expensive than an EPIRB and make use of the same search-and-rescue satellites as the EPIRBs.

Satellite telephone – A satellite telephone, or satphone, communicates directly with orbiting satellites. Some systems use satellites that are geostationary; others make use of LEO satellites with an orbital time of 70 to 90 minutes. Since the LEO satellites are much closer to the Earth, their signal strength is greater than that of the geostationary satellites, so a smaller antenna can be used. In addition, the LEO satellites can provide worldwide coverage with no gaps. As each LEO satellite passes overhead and sets below the horizon, the calls are handed over to the next satellite. As with many other services, this is a commercial venture that requires a subscription.

Globalstar markets a multipurpose hand-held phone that can be used as a cell phone or satellite phone. It can be used up to 200 to 300 miles off the coastal U.S. as well as the Bahamas, the Gulf of Mexico, and the eastern Caribbean. Iridium has a hand-held satellite phone that can be used for voice or data and has global coverage. Inmarsat provides three different services, with global coverage.



The GPS constellation

TED TOLLEFSON

Satellite radio – Subscription radio, or satellite radio, is supplied by commercial businesses and requires a subscription from the end users. These companies offer a large selection of radio channels, including music, news, weather, and sports. The signal from the satellites is strong enough that a dish-type receiving antenna is not necessary. The transmitted signals, on the S band (2.3 GHz), are encoded and require a proprietary receiver for decoding and playback. Each of these receivers, or tuners, has an electronic serial number, and can be activated through an authorization code when the subscription is active. Portable receivers or tuners are available for $100 to $200. A monthly fee of about $12.95 is charged for service, with lower prices available for yearly contracts.

The audio reception quality is not always as good as terrestrial FM reception, since many radio channels are crowded into a tight satellite bandwidth. In the U.S., XM Satellite Radio and Sirius Satellite Radio are the two major companies supplying this service.

Satellite TV – Reception of TV from a satellite requires a dish antenna. For marine purposes, this dish must be fully stabilized in order to receive the required satellite signals, but with current technology these dishes can track a satellite even on a severely rolling, pitching boat. Fixed dishes can also be mounted on a dockside piling. In the early days of satellite TV, the onboard dishes, enclosed in a dome, were very large in size. But domes of less than 16 inches in diameter have become available recently, making satellite TV practical even on boats of less than 30 feet. These dish-domes cost several thousand dollars, but small, portable, non-tracking satellite dishes, at a price of less than $300, are also available for very stable boats or boats that are in slips with the dish located on the dock. Satellite TV's footprint allows reception up to about 100 to 200 miles off the coast.

As with satellite radio, the service is available on a subscription basis, and typically provides more than 300 channels of commercial-free TV, as well as music channels.

Historical insight

Consider this little-known but interesting historical side note:

In October 1957, the USSR beat the United States into space with Sputnik, or so the world believed. In a story that came to light much later, it turns out that the U.S. was also prepared to launch a satellite, but held off for political reasons.

Until then, any aircraft flying over a foreign country had to have permission to use that country's airspace; this understanding remains to this day. But at the time the rules for satellites were not clear. If the United States allowed the USSR to launch a satellite and have it fly over countries all over the world — including the United States — without protest, then new international law would be established. The United States was sure that, with its technology, a U.S. satellite could be used for spying on the USSR. Remember, this was at the height of the Cold War. Once Sputnik established the precedent with no protests, the United States launched its own satellite.

What next?

We have been part of the satellite age for a half century now. During this time the technology and services have expanded exponentially, but it's impossible to predict what services and conveniences will be available to future sailors. However, there's no doubt they will be as astounding.

Here are the terms that define the wind

by Don Launer

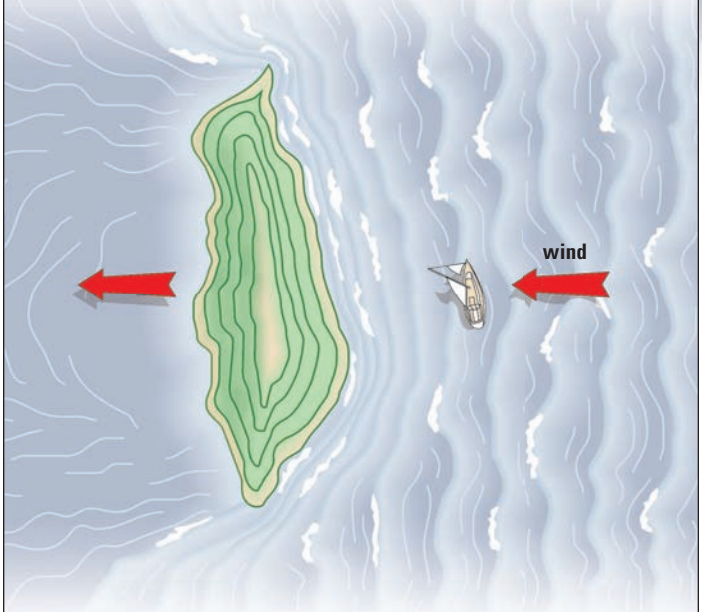
KNOWLEDGE OF THE WIND IS VITAL FOR ALL SAILORS. So is knowledge of the vocabulary of the wind. To understand and talk about the wind, some important terms must be defined.

Wind direction – The direction of a wind is described as the direction *from* which it blows.

Windward – The *windward* side of an object is the side facing the direction from which the wind is blowing.

Leeward – (pronounced LOO-word). The opposite side of that object, the side away from the wind, or downwind.

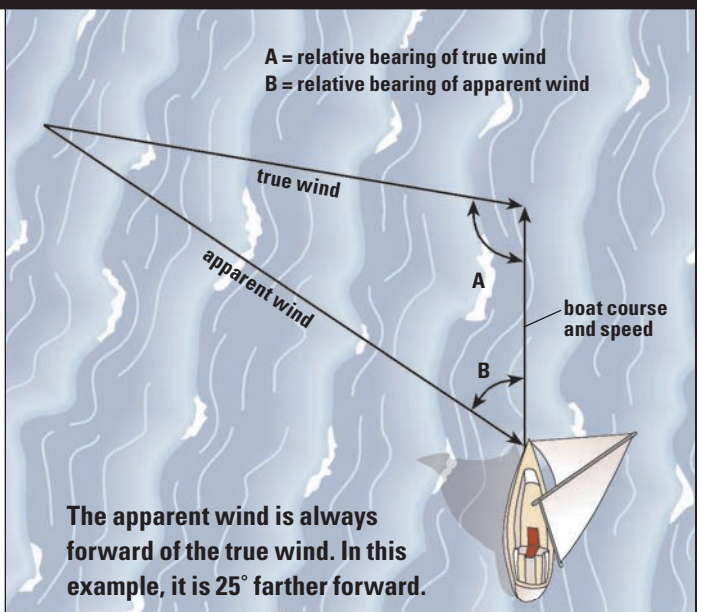
Lee shore – The sailboat in the illustration below is on the *windward* side of the island. The island presents a *lee shore*, since it is to *leeward* of the boat. This is a sailor's worst nightmare in a storm, since if the boat can't claw to windward or maintain its position, it will be driven onto that *lee shore*.



Veering – When a wind *veers*, it shifts direction clockwise. A wind shifting from northerly to northeasterly is a veering wind.

Backing – The opposite of veering. When a wind *backs*, it shifts direction in a counterclockwise direction, such as when it changes from west to southwest.

True wind – The *true wind* is the wind speed and direction as observed from a stationary position, such as a boat at anchor or on land.

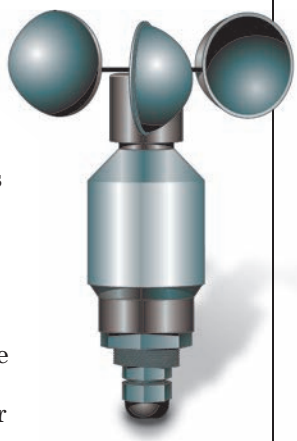


The apparent wind is always forward of the true wind. In this example, it is 25° farther forward.

Apparent wind and relative wind – These terms have the same meaning. They refer to the wind you sense on a moving boat. It is the combination of true wind and the wind made by the motion of the boat. In the vector diagram, the length of a line represents velocity and the angle of the line represents direction. Knowing the boat's vector and the true wind's vector allows us to determine the *apparent wind* by completing the triangle with the third line.

Although the true wind is nearly beam-on to the boat's course in the illustration above, the apparent wind, due to the boat's forward motion, requires that the sails be trimmed in a close-hauled position. Remember, the true wind direction is always aft of the relative wind direction.

Wind gradient – Friction slows wind down at the surface of the land or water. In average conditions, if the wind velocity is 10 knots at 100 feet above the water, it might be 8 knots at 33 feet and 7 knots at 12 feet. This gradient, combined with the motion of the boat, makes the relative wind at various heights change in velocity and direction. The direction of the upper *relative wind* always lies farther aft than the lower relative wind. This is one of the reasons for inducing twist in the upper part of a sail.

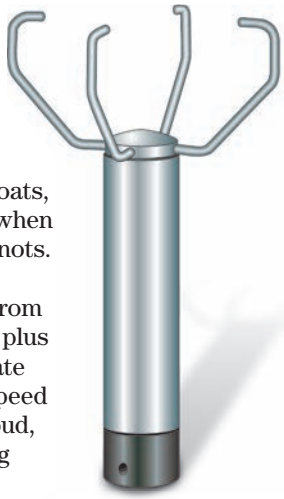


Rotating cups anemometer

Layout and illustrations by Ted Tollefson

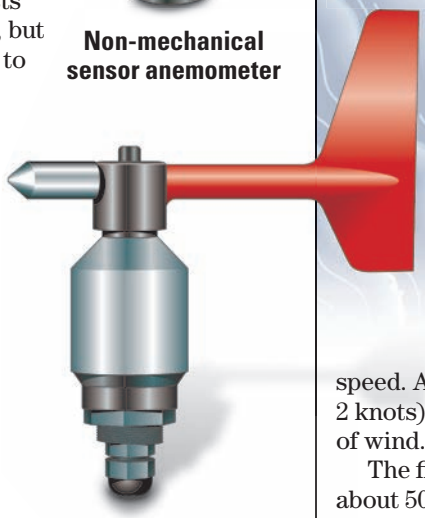
Wind pressure – The pressure the wind creates is proportional to the square of the wind's velocity. If you double the wind speed, the pressure is four times as great. Thus the wind pressure on sails, boats, or buildings is four times as great when the wind increases from 15 to 30 knots.

Anemometer – An anemometer (from the Greek *anemos*, meaning wind, plus *meter*, a measure) is used to indicate wind speed. You can gauge wind speed with a piece of string tied to a shroud, a windsock, or mechanical rotating cups. Professional meteorologists use radar systems and balloons, but these methods are not available to the average sailor.



Non-mechanical sensor anemometer

Recently, an anemometer has come on the market that replaces the rotating cups with a non-mechanical sensor. This sensor is ultrasonic and has no moving parts. It gives wind speed and direction. It is becoming competitively priced, compared with top-of-the-line cups-and-vane mechanical systems, and provides data in icing conditions when the rotating cups-and-vane systems are disabled.

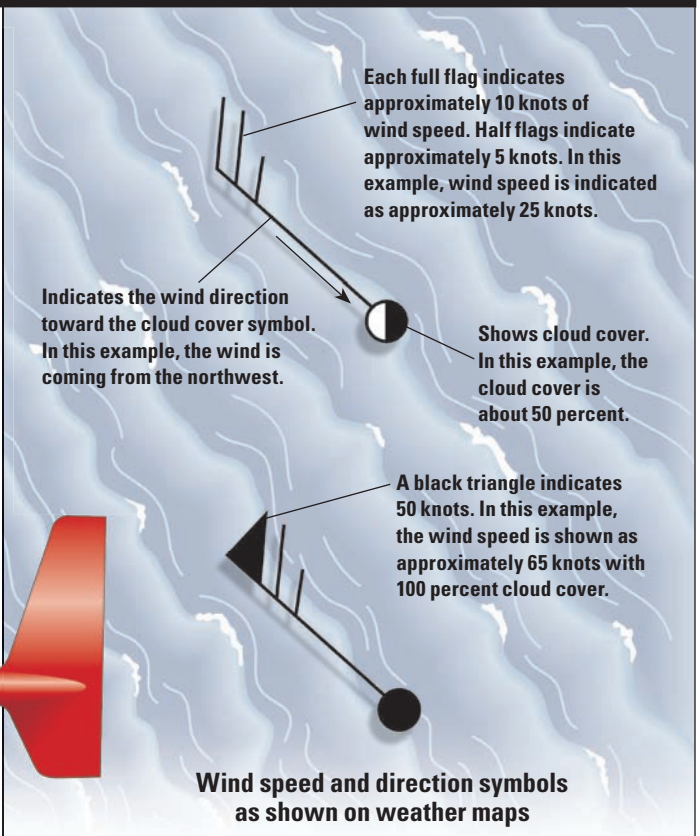


Windvane

Windvane, or weather vane – This is a means of determining wind direction. The *windvane* points into the wind, and the wind direction is measured either in points of the compass or azimuth degrees. When an anemometer and windvane are combined into one unit, the instrument is known as an aerovane.

Weather map symbols – Weather maps have symbols to indicate wind conditions. These symbols, which look like notes on musical scores, indicate the wind speed and direction, as well as the cloud cover for various locations (see *Good Old Boat*, November 2005).

The symbol consists of a circle, which indicates cloud cover, and an arm that points to the circle. This arm indicates the wind direction and is known as the wind barb, or arrow. Think of these arrows as flying with the wind to remember what wind direction they are indicating. The flags, or feathers, at the end of the arrow indicate wind speed. A long feather represents 10 knots of wind (within 2 knots); a short feather represents approximately 5 knots of wind.

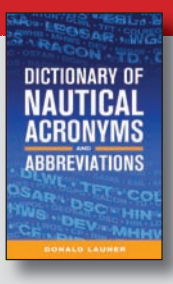


Wind speed and direction symbols as shown on weather maps

The first illustration above shows that the sky has about 50 percent cloud cover and the wind is from the northwest at a speed of 25 knots (10+10+5).

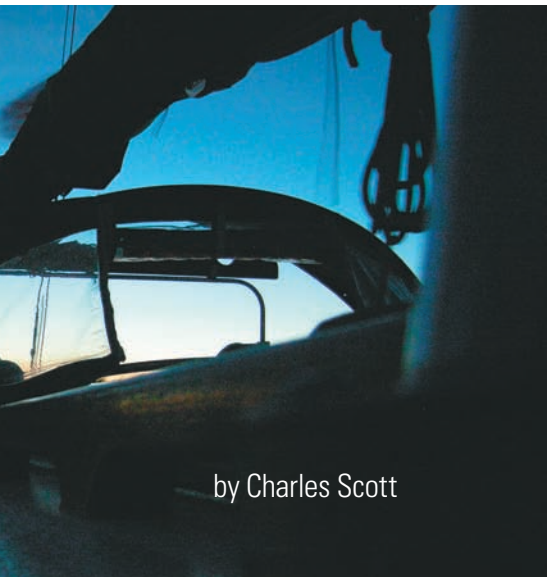
When winds are at or over 50 knots, one or more black triangles are used to indicate each 50-knot wind increment. In the second illustration above, the weather map shows completely overcast skies, with the wind from the northwest at 65 knots (50+10+5).

For further reading . . .



Don Launer's new book, *Dictionary of Nautical Acronyms and Abbreviations*, helps recreational boaters sort through the alphabet soup of abbreviations on nautical charts as well as those in routine use in marine books and articles. This book is available at <http://www.goodoldboat.com/bookshelf.html> or by calling 701-952-9433.

Solo Sailing



by Charles Scott

A Voyage Toward Vengeance

A novelist spins a sea story of greed, lust, and island-sprinkled seas

by Jule Miller

Jule's Cape Dory 22 makes a nice centerpiece to the view,

Note: *Enjoy this prologue from Jule Miller's nautical fiction,* A Voyage Toward Vengeance, *published by Paradise Cay Publications in 2004. This is a modern sea story of the most realistic kind, with missing persons, murder, sunken vessels, unlikely comrades, and a couple of scary sociopaths. It is adult material not intended for youngsters. Readers with vivid imaginations will find it difficult to sleep at night while immersed in this book. We liked the tale so much that we selected it as one of the first audiobooks produced for sailors who enjoy listening to well-told nautical stories.* ***–Eds.***

As Caribbean squalls go, it was nothing much: just a bubble of rain blown across the sea by the trade winds. Other than a few fickle puffs on the leading edge, it contained no winds of its own, just the fresh Force 5 breeze that pushed it along. It had been born as Antigua cooled in the night and in turn had cooled the moisture-laden wind that blew in from the Atlantic. If the squall had not overtaken the yacht as it entered the Narrows between St. Kitts and Nevis at 3:30 that morning, no one ever would have known of its short existence. There are few things more secret, or more useless, than rain that falls into the sea at night.

It caught the 38-foot sloop at precisely the worst time. A half hour earlier and this small blob of rain scurrying across the sea in the otherwise clear night would have been past by the time the boat reached tiny Booby Island in the entrance to the Narrows; a half hour later and she would have been safely through before the squall overtook her.

Like most tropical squalls, it had a prelude, a line of scattered oversized drops that was followed by a short ominous silence before the main downpour arrived with a roar. It instantly drenched the blue polo shirt, red Breton fisherman's shorts, and leather deck shoes the man at the wheel wore, but he ignored the discomfort, switched off the autopilot, and took over the steering. Running with a squall is usually a mistake unless one wants to stay in it for as long as possible, but in these confined waters, he had no other choice but to hold his course until it had passed. It shouldn't be very long. He had been through a great many squalls, most of them worse than this one.

Unremarkable face

He was a pleasant-looking man, with sun-bleached brown hair and a cowlick, now plastered against his head by the rain, and an unremarkable face that was still freckled and boyish in his thirties. He had the powerful body and sloping shoulders of a weightlifter, and the only fault in his appearance was that his long, narrow head belonged on a much taller, more willowy body. Perched on his muscular neck, it gave him the somewhat ridiculous look of an inverted funnel when seen from the back. But when seen from the front, especially now, as he ignored the chill of his wet clothes and concentrated on steering, there was nothing ridiculous about him at all.

Booby Island had been just forward of the port bow and about a quarter mile off when the squall hit. As long as he held this course, he should easily clear it and the Cow

above, from Nevis to St. Kitts, on the left in the photo below.

Rocks that just broke the surface a mile farther down the center of the channel. He turned his head to the left, trying to see the high, loaf-shaped islet through the wall of rain, but the 20-knot wind blew his eyes full of water so he could now see nothing at all. He turned away from the wind, wiping his eyes with the fingertips of one hand while steering with the other, and peered to starboard, hoping for a glimpse of the lights on St. Kitts. But all he could see was wet blackness.

Booby was shaped like a miniature Gibraltar and, if it weren't for this damned rain, he would be able to see the white of the breakers on its seaward side and its loom against the lights of Nevis. It must be abeam by now. He held his left wrist close to his face, squinted at his stainless-and-gold Rolex, and noted the time. He would hold this course for another 20 minutes. By then they should be safely past the Cow Rocks, and he could harden up toward Charlestown, the capital of Nevis. Hopefully, the squall would have passed by then. They were making almost 7 knots and should certainly do a mile every 20 minutes or so. He wasn't very good at numbers, but he knew it.

From long practice he kept the boat sailing at a constant angle to the wind as he searched for something to confirm his mental estimate of his position. But the featureless black wall of rain that surrounded the boat disoriented him enough so he did not notice the wind backing to the north as it funneled through the narrow channel between the mountainous islands. He glanced down at the red-lit compass in the wheel pedestal once or twice as he steered by the feel of the boat and of the wind on his neck, but the combination of the rain in his eyes and the water running over its dome obscured it enough so its message made no impression on him.

> "There are few things more secret, or more useless, than rain that falls into the sea at night."

Not claustrophobic

The pounding of the rain on the deck above her head woke the woman in the tiny aft cabin that the yacht's designer had squeezed in beside the engine compartment and the cockpit foot well. It contained only a narrow bunk with four built-in drawers beneath it, a shelf above, and a small hanging locker at its foot. There was just enough room to stand beside the bunk and open the door that separated the cabin from the galley at the after end of the saloon. It wasn't much bigger than a couple of phone booths, and it was made even more confining by being finished in dark, rubbed teak. But she wasn't claustrophobic. Just the opposite. She loved this tiny, luxurious den that she told herself was the same size as the captain's cabin in the sloop of war that had been Nelson's first command. Then, too, it may have appealed subconsciously to her nesting instinct, one of the few feminine instincts she possessed.

She listened to the roar of the rain for a few seconds

before she turned on the reading lamp over the bunk and checked her watch. It, too, was a man's Rolex and it read 3:40. They must be almost to Nevis by now. She might as well get up. She hated making landfall in the mid-watch, but it couldn't be helped. They had been late leaving Antigua and then they'd had to sail halfway to Barbuda. On top of it, he had dragged out his part of the business so it had taken much longer than it should have.

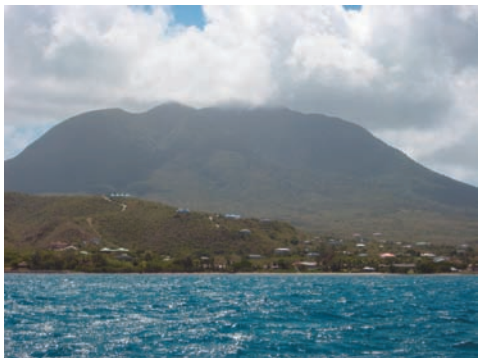
She climbed out of the bunk, pulled on Bermuda shorts and a polo shirt with the Royal Jamaica Yacht Club's logo on the pocket, stepped into her salt-stained deck shoes,

> "Before she could recover, the boat swerved violently to port as it rolled steeply to starboard so she fell across the cabin, to land against the base of the navigator's desk, her shirt soaked with coffee."

and went forward into the galley craving a cup of coffee from the thermos that stood in a rack over the sink. But she knew that if she drank it, she wouldn't be able to get back to sleep.

A passport, a stack of traveler's checks, a red velvet jewelry box, and four credit cards lay on the chart table opposite the galley. She picked up the passport and studied the photo for a moment, then looked at her watch again. She wanted to be ashore when the banks opened, so there wouldn't be all that much time to sleep anyway.

The drumming of the rain on the deck seemed to be letting up, so she decided to have her mug of coffee and



stand in the hatch, under the dodger, sipping it until the squall passed. As she poured, there was a loud crash from somewhere beneath her feet and the boat suddenly stopped, throwing her forward so her back hit the waist-high bulkhead that separated the galley from the saloon. Before she could recover, the boat swerved violently to port as it rolled steeply to starboard so she fell across the cabin, to land against the base of the navigator's desk, her shirt soaked with coffee. If it had been hot she would have been scalded, but it only felt warm and sticky as she sat on the cabin sole recovering from the shock of the collision and waiting for the pain in her back to subside. Then, with a series of awful grinding noises, the boat began to move again, and she yelled, "What did you hit?"

Squall passed

At that instant the squall passed as abruptly as it had arrived and made what had happened obvious to him. "I think we hit the edge of those rocks in the middle of the channel. The Cow Rocks. We're over them now, though. We're moving." He didn't have to tell her that. The boat had come upright again and the expensive-sounding noises under her feet had stopped. "How is it down there?"

"Let me check." She lifted the hatch in the cabin sole.

Approaching the islands in paradise from the sea: Mount Nevis, top left; the southern peninsula of St. Kitts, top center; the Narrows, top right; the Cow Rocks and Booby Island, center; and Horse Shoe Point at the southwest tip of St. Kitts, at left.

Water was pouring into the bilge sump from somewhere forward, and, as she watched, it came over the edge of the varnished teak-and-holly sole in a gin-clear sheet. "We're sinking, that's how it is down here. You must have torn the keel loose."

"Oh, my God! What should I do?"

She forgot both the clammy shirt and the pain in her back as she pulled herself to her feet at the nav station and studied the chart taped to the desk. "Steer about two-sixty. There's deep water off Horse Shoe Point. It's less than two miles to where it drops off. Keep her going as long as you can." The jewelry box, passports, traveler's checks, and credit cards had slid against the instrument panel at the side of the desk, and she swept everything but the jewelry box into a plastic garbage bag and added a rock from a locker under the sink as she called, "What's the depth sounder say?"

"Twenty-six feet. She feels logy."

"She ought to. The water's over my shoes already." She squeezed the air out of the bag, knotted it, then splashed into the head and pulled a hidden catch so the medicine chest swung out of the bulkhead as a unit. From the space behind it, she took a yellow plastic scram bag and sloshed back into the main cabin carrying it. The water seemed to be climbing more slowly, but she knew that was only because it now had a bigger area to fill. They were sinking all right. Time to get her stuff and get out of here.

Waded out

The water was almost to her knees by the time she waded out of the aft cabin with her purse and the canvas tote bag in which she kept her knitting. She stuffed the jewelry box, her purse, and the scram bag into the knitting tote and zipped it closed, then stood at the bottom of the ladder and glanced around the cabin one last time before carrying it and the garbage bag up into the cockpit.

Now he was steering with his eyes glued to the compass. "She needs more sail if we're going to make it. What about the engine?"

"The batteries must be just about under." She unfurled the jib all the way, then trimmed the mainsail. The digital depth sounder read 32 feet, then 36, then 58, and finally jumped to 92 feet before going blank at the same instant the lights in the other instruments went out. She studied the angle of the lights on Nevis and the dark loom of Horse Shoe Point at the tip of St. Kitts before saying, "I think we made it. It drops off to 17 fathoms right along here." She

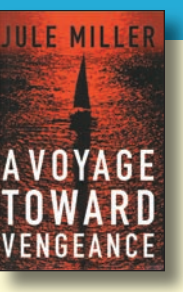
"Water was pouring into the bilge sump from somewhere forward, and, as she watched, it came over the edge of the varnished teak-and-holly sole in a gin-clear sheet.'We're sinking, that's how it is down here. You must have torn the keel loose.'"

slung the plastic bag with the rock overboard ahead of the boat and, carrying her knitting bag, went forward to inflate the life raft. "Keep her going as long as you can."

"Jeez, Alice. I'm sorry."

"That's all right. It was time for a trip to the States and a new boat anyway."

For further reading . . .



Read Jule Miller's book, *A Voyage Toward Vengeance*, or let us read it to you. Good Old Boat has produced this book in unabridged audio format. It can be downloaded as an MP3 file or ordered on CD in two formats:

MP3 or audio CD. Go to <http://www.goodoldboat.com/audio.html> or call 701-952-9433. The book itself is available from the Good Old Bookshelf <http://www.goodoldboat.com/bookshelf.html> or by calling 701-952-9433.

Flirting with a Hunter 28.5

But it's just the latest in a long series of loves

by Karen Larson

Nobody's questioning the moral and ethical fiber of Warren Milberg. He's a good man. As a boatowner, however, he does have one minor character flaw. It's quite possible that he shares this flaw with a significant number of fellow sailors. You may catch a glimpse of yourself, gentle reader, in the description of Warren that follows.

It's not that he's been disloyal, exactly. It's just that there are so many boats. Each type has strengths and weaknesses. And all are so beautiful. I would argue only that Warren has been guilty of being fickle. In one year, for example, he owned three boats, but that's an extreme example in extreme circumstances. Still, it makes my point. Allow me to develop my case.

It started innocently enough with an ad he spotted in *The Washington Post* sports section: "Learn to sail. Two 4-hour sessions. $200. And a phone number." Warren had just returned from a tour in Vietnam. He was ready for something new. Something peaceful. His sailing teacher had a 20-foot twin-keeler and a short fuse.

"The wind was blowing a bit," Warren recalls. "He started yelling at me in a language I didn't understand [sailing jargon]. I was in a sweat, and he was in a dither. When we got back to the dock, he said, 'I don't think you're ever going to be a sailor.' He recommended some books for me to read, told me to read them first and call for a second lesson later."

The instructor no doubt expected that he'd seen the last of Warren Milberg. But Warren, who had $200 invested in those two lessons, did read the books, and he went back for his second lesson in spite of his unpromising beginning. The next time it was "a wonderful day," he recalls. "I said to myself, 'Gee, now I know how to sail.' I bought a 15½-foot Snipe one-design racer."

Sage advice

At the marina where he launched his new boat, the previous owner offered this sage advice, "It may not look like it, but

Warren Milberg, inset, and *CrewZen*, his Hunter 28.5, are regular features on the Chesapeake Bay.

this is a lot of boat. You really have to know how to sail it. If you get into trouble, let everything go." No problem. Off Warren went. The weather cooperated for the first two outings. He didn't get into trouble. Things went well. "As a result, I gained too much confidence," Warren recalls. "But the third time, the wind was really blowing. The boat was overpowered. Water was coming over the gunwale. The advice to 'let everything go' came back to me. I let everything go. I took down the main and sailed back on jib alone, thoroughly chastened."

After that, Warren learned to watch the weather carefully, a habit he has never dropped. He refers to himself as a "closet wind junkie." Even when dressed in a suit and tie and not headed east to the marina, Warren is evaluating the wind moving each flag he sees for direction and strength. "Am I missing a good sailing day?" he wonders.

He joined the Snipe fleet and began racing. "I learned a lot about sailing at that time," Warren says. "I took the Annapolis Sailing School cruising course in a 24-foot Rainbow. I chartered larger boats on the Chesapeake, as well as in the Bahamas and the U.S. Virgin Islands."

Was he grateful to the Snipe for the lessons it taught him? He never gave that boat a name and sold it one day for a 22-foot Hurley and a life focused more on cruising and less on racing. "This one had a fin keel," he notes, "although some are twin-keelers. The Dockrell is essentially the same boat."

Warren doesn't give the Hurley more than that passing footnote while recounting his sailing history. Did it have a name? What lessons did this boat teach him? Those stories go untold. That boat obviously was a one-night stand. He did not fall in love with that boat, but he did fall in love with cruising.

Epiphany

"Then I bought a Columbia 28 with an Atomic 4," he says. "It was my first inboard. It was a terrific boat with a terrible, cranky engine." The boat's name was *Marisa* (the name of the previous owner's girlfriend). This boat offered him his first experience with long-range cruising on the Chesapeake Bay: "I circumnavigated the Delmarva Peninsula. It was spectacular. This was an epiphany. I said, 'This is what I want to be doing!'"

Many years would pass before that dream became reality. There was a divorce. The boat was sold. Warren was boatless and left to charter from time to time or sail on other people's boats.

Time moved on. He fell in love once more — an unusual love story in itself — started a family and remained boatless. Jackie Hess is the woman who captured his heart permanently. Their son, Evan, has just completed high school. Both are good sailors who enjoy daysailing with their captain.

"Jackie and I went for a Sunday drive to the Chesapeake Bay," Warren says. "We found a beautiful place off the beaten path. It faces the Thomas Point Lighthouse and the Bay Bridge, West River, Rhode River, South River, Annapolis. It was a panorama. There were so many sailboats there . . . and I didn't own a sailboat!" The time, clearly, had come. Warren was about to become a sailor once more, albeit a fickle one. "We went to a boatyard. There was a 23-foot Alberg-designed, C. E. Ryder-built Sea Sprite. It looked like a miniature Alberg 30. We'd chartered a 30 before and really liked the design." Warren believes that Carl Alberg didn't know how to design an ugly boat.

> **"Knowing where and how you sail are the most important things to understand when buying a boat."**

Warren continues, "Jackie said, 'Why don't you buy it?' I made an offer. This was a spectacular little sailer. I fell in love with her." Her name was *Economy* (the previous owner was a fan of Henry David Thoreau). Both Thoreau's and Warren's "economy" was about living life to its fullest.

No Bimini room

"The only flaw was its boom placement," he continues. "It was too low.

Jackie Hess is the woman who wrapped up Warren's heart far more securely than any sailboat ever will.

There was no room for a Bimini beneath it. We baked in the July and August sun. I wanted a larger Sea Sprite . . . something in the 27- to 28-foot range. I didn't want a project boat.

"I talked to a broker. After some time he called with this suggestion, 'It's not your kind of boat, but go see this little C&C Niagara 24. It's clean, a nice boat.' I wasn't interested," Warren says. "This was a beamy mid-1970s light-displacement, fin-keel, high-aspect ratio, outboard rudder sailboat . . . nothing related to Alberg's classic narrow beam, full-keel-with-attached-rudder designs. But I took the drive down there anyway. It really was well-kept. The gelcoat was shiny. The teak had been maintained. There wasn't as much teak as in an Alberg. It had good canvas. I did a mini-survey and made an offer. Two hours later that boat was mine."

Sometime in 1995, just before buying the C&C, Warren realized that each time he commuted into Washington, D.C., from Annandale, Virginia, he was driving in the wrong direction. Those commutes took him farther from his boat. He'd been working as a defense contractor but decided it was time to spend more time sailing and writing about sailing. He takes his retirement seriously, however. "Somebody has to patrol the bay," he says. "It might as well be me."

Aptly named

Warren sailed his new baby, named *Flexible Flyer* by the previous owner, home to Herrington Harbour North, in Deale, Maryland. The year was

This page: whether looking forward or aft, the interior of the Hunter 28.5 is wide open, allowing for ventilation and adding to a feeling of spaciousness. Facing page: the navigation station and head are located aft on the starboard side, and a small galley is situated opposite.

1996. "It was a good boat. *Flexible Flyer* was aptly named: she flew! C&C gave real meaning to the term 'racer/cruiser.' This was my toy. There was more interior and storage space than in most 28-footers. I could sail it all over the place . . . and did," Warren says fondly. His love for that boat was obvious in an article he published in *Good Old Boat* in July 2002 about the joys of sailing a smaller boat. He advised readers not to think they needed to buy ever-larger boats to be happy. You would think, wouldn't you, that Warren had found the perfect boat? "Perhaps it was just the right boat for the right time," he hypothesizes.

"Seven years later I wanted an inboard, as I hoped to do more overnight, longer-distance cruising with my family. Budget was a factor. Size was a factor. I didn't want a 1960s or '70s boat. I wanted an '80s boat, one that was big enough for a small family to cruise on but able to be singlehanded." He discovered a Catalina 27 that met his criteria. It had wheel steering and an inboard diesel. It looked well-kept. I had it surveyed, did a sea trial, and sailed it home. More than 6,600 have been sold," he notes. "People love them." Unfortunately, that was in mid-July 2003. Hurricane Isabel was due to arrive in September.

"I liked sailing the Catalina 27," he says. "It was fast and fun to sail. Then seven weeks later the hurricane hit. I had been sailing the Chesapeake Bay since the mid-1970s. I thought I knew how to deal with hurricane preparations. I went for a sail on a beautiful fall day a few days before the hurricane was predicted to hit the bay area. I had a wonderful sail. Then I took all the sails off and tied up the boat with 15 docklines and eight fenders. I took the anchor off. I figured, 'The boat will take care of itself,' but I was wrong. In the end, it was the docks that failed, as they just couldn't withstand the hundreds of thousands of pounds of pressure exerted by all the surging boats tied to them."

Almost renamed

He pauses a moment. That boat almost got renamed. This would have been the first time that Warren was to deviate from the previous owners' tastes in names. This was to be the boat. He would name it *Slot Machine*, based on its fine sailing characteristics. "I hadn't ordered the new name graphic yet," he says. He figures the sea gods were angry with him for even considering the new name. "I won't make that mistake again," he concludes.

"Three things happened the night the hurricane went through. Wind was from the east. The other two happened almost simultaneously: high tide and the hurricane surge were within an hour of each other. The harbors and marinas facing east were really hurt. Herrington Harbour faces east," he pauses once more, lost in thought. "It was mayhem the day after. The first four docks were destroyed. I couldn't get to my boat. The water was still 8 to 10 feet above the docks. But it was floating on its lines."

Memories wash over him: "I had it hauled the next day. The bow pulpit was bent 90 degrees. The stern ladder was bent. The rubrail was destroyed on both sides. There were scratches all over in the gelcoat. I figured it was going to be at least $3,000 to $4,000 in insurance claims. BoatU.S. was magnificent. Its catastrophe team of surveyors and adjusters arrived quickly. One of them guessed that the claims would be closer to $5,000. A week later they informed me that the rudder and post were bent and would probably have to be replaced, a major undertaking. They said they wanted to total the boat."

Warren realized that it would take 18 months to get everything repaired. Since so much damage had been done to so many boats in the area, all repair facilities would be overloaded. "BoatU.S. said it would send me a check for the full insured value of $14,000, and if I wanted, I could buy it back for $8,500 and fix it myself. I just took the check. I didn't want to wait for 18 months."

Wrote article

Full of regret over his loss, Warren wrote an article for the Chesapeake regional sailing magazine, *SpinSheet*. "Then two months later I got an email message from a guy who had read the article and said, 'I think I bought your boat.'" Indeed, he had picked it up at a BoatU.S. auction and was repairing the damage. Warren was able to give him some of the engine parts and manuals that belonged with the boat.

But Warren was boatless once more (and about to acquire his third boat that year). "By this time," he

Resources

Hunter 28.5
<http://www.huntertwentyeightfive.com/>

recalls, "I had become something of a believer in fin keels, spade rudders, relatively wide beams . . . all the things that the Albergs are not." Warren realized that he was not going to be sailing offshore. "I sail once or twice a week, a daysail of 30 miles or so, occasional weekends, once in a while a longer distance overnight at anchor. The C&C taught me that fin-keel boats are perfect for that. Knowing where and how you sail are the most important things to understand when buying a boat."

He saw an ad for a 1986 Hunter 28.5 for sale on the Chesapeake about 100 miles from his home port. The broker had sold this boat twice already, taking it back in trade each time. He knew it well. "It had a 1986 Yanmar in it. The engine looked brand-new," Warren says. "I bought it in Havre de Grace in late fall of 2003. It was stored up there over the winter for me for free."

This boat's name was (and remains) *CrewZen*. "Fortunately," Warren says, "the boat names I've inherited have been boat names that I've liked." This is a good thing because Warren Milberg is not about to consider changing any more boat names. He's not one to risk inciting another hurricane. Is he about to change boats anytime soon? I certainly hope not, although while Jerry Powlas and I were in Annapolis last fall for the boat show and writing this article, we learned about an Alberg 30 that might make a nice boat for someone. When he heard this, Warren's ears twitched. I told you he's fickle. But for now, he's contented with *CrewZen*.

Decent boat

"This is not a Sabre, Caliber, or Hinckley. I think Hunter made a decent boat and it's a great value on the used-boat market," he says. "It wasn't meant for offshore; it's a coastal cruiser." His model of the 28.5 has the 4-foot keel, he notes, but there is also a 5-foot 2-inch keel meant for places where the water is not as shallow as the Chesapeake. His boat displaces 7,000 pounds. The mast is stepped on deck.

Other owners on Steve Prusinski's very active webpage, dedicated to the owners of Hunter 28.5s, < http://www.huntertwentyeightfive.com/> have provided Warren with loads of valuable information about his boat. They complained, for example, about the cast-iron keel. Because of this, Warren stripped the keel to bare metal and put a product called POR-15 on it. He says it's like a thin tar that creates a chemical bond with the metal. The iron keel has not been a problem since.

Warren learned that the PHRF rating for this boat in the Chesapeake area is 183 to 186. But he says, "A fellow with the deep-keel model and rigged for racing voluntarily dropped his PHRF to 174, and he's still winning. The boat is actively raced in a number of fleets around the country and seems to do well." Warren continues counting off the features: "Sail area is 400 square feet with a 100-percent foretriangle and 500 square feet with a 150 jib. It has the classic Hunter B&R rig."

Sailing characteristics

Jerry, who spent time at the helm of *CrewZen*, made these observations: "I've had a chance to sail and motor two Hunter 28.5s. Both were agile under power and backed with precision and authority because of their spade rudders. Both were good sailers. Despite its shallow-draft keel, Warren's boat pointed well and didn't seem to need much wind to move along under the 150-percent genoa. The shoal-draft keel did seem to make the boat feel tender in gusts, but after the initial heeling, she steadied up and got stiff.

"I found the helmsman's position cramped," Jerry continues, "but the split backstay made standing up straight possible even in this tight space. The T-shaped cockpit does, however, make getting around the wheel a bit easier than with conventional cockpit designs.

"The unusual B&R rig, named after Swedish designers Lars Bergstrom and Sven Ridder, is popular with Hunter Marine," Jerry says. "The version on the 28.5 is a masthead rig with a backstay. The spreaders are highly swept, an essential characteristic of this rig and also its main disadvantage. The two pair of swept spreaders do not allow for easing the boom off on a run without laying the mainsail on the rigging. In practice this disadvantage only shows up on very broad reaches where the skipper can either lay the sail on the rigging or tack downwind."

Jerry adds, "Since the boat is a coastal cruiser, not a bluewater sailer, I'd freely ease the boom when the notion struck me and watch for signs of chafe. If I discovered problems, I'd probably give up the practice or reinforce the wear points if there were not too many. A caution here, however: put a stopper knot in the mainsheet so the boom can never hit the shrouds in a flying jibe. That could cost you the mast on any boat. The main advantages of this type of rig are: it allows for a lighter cross-section in the mast and it permits the shrouds to be far inboard, a factor that produces wide and uncluttered sidedecks. It should also improve headsail sheeting angles. Later-model Hunters were rigged without any backstay at all.

Continued on Page 76

Hunter 28.5

Examining the pros and cons of four different boats

by Ted Brewer

THIS IS A VERY UNUSUAL comparison, as these four boats have all been owned by Warren Milberg at different times. It would be interesting to know if he agrees with my assessment or, rather, how much he disagrees.

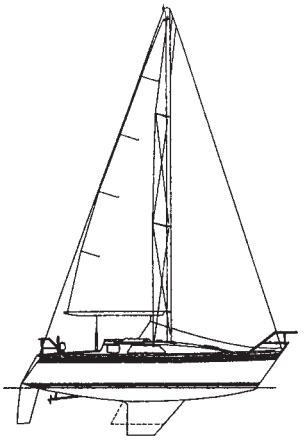
It is obvious from the capsize numbers that neither the Hunter nor the C&C was designed to be a bluewater cruiser. The beamy C&C 24, with its super-light displacement and very modest ballast ratio, is definitely an inshore boat. Its capsize number is about the highest I've ever seen. This can make a boat exciting and fun to sail until the weather turns foul; then it's time to head for the nearest harbor. The Hunter is not far from the C&C in beam/LWL ratio and is also of fairly light displacement, so its capsize number suffers as a result. Its extra displacement and considerably higher ballast ratio will provide some assurance when the weather pipes up. Still, both of these boats are inshore cruisers.

The Columbia and Catalina are considerably more able, due to their good displacement and moderate beam, both of which contribute to reassuring capsize numbers. Although neither was intended as a weather-be-damned world voyager, both were given good ballast ratios and should be quite capable of coastwise passages and reasonable bluewater voyaging.

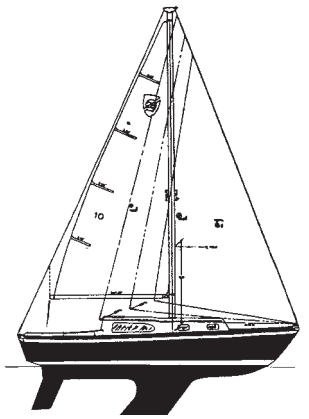
Motion comfort and the capsize number seem to go hand in hand, as narrower beam and heavier displacement improve both figures. So it is obvious that the Catalina and Columbia will have the easiest motion in a seaway. The Hunter will be quite a bit bouncier, as its wide beam could contribute to a snappy roll in leftover beam seas when the wind lightens. The C&C 24 will bounce around in a leftover chop like a cork in a bathtub. Bear in mind, though, that all boats will behave more comfortably under sail in a decent breeze as the wind pressure tends to steady and slow the motion.

As to performance, the C&C 24 would be a grand little boat for club racing. Its very light displacement, wide beam for stability in medium air, and a high sail area/displacement ratio all add up to speed. Indeed, it would not surprise me at all if the boat could get up to semi-planing and even planing speeds under spinnaker in a good breeze. The Hunter will not be a slouch either, with its generous sail area, light displacement, and long waterline. However, a skipper keen on windward performance would be wise to look for a 28.5 with the optional 5-foot 2-inch draft fin if he doesn't sail in waters where the bottom is close to the top. The Catalina and Columbia will be fairly well matched, but their more moderate sail area will count against them until the breeze picks up.

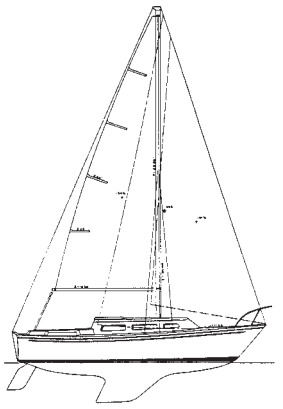
My vote goes to the Columbia 28 due to its general characteristics and keel-stepped rig. I'll be interested in learning how Warren rates them.



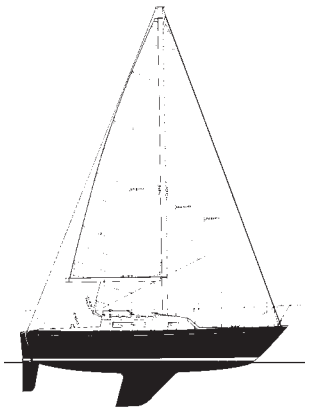
Hunter 28.5



Columbia 28



Catalina 27



C&C 24

	Hunter 28.5	Columbia 28	Catalina 27	C&C 24
Years built	1987-?	1967-75	1969-89	1976-84
LOA	28' 5"	27' 7"	26' 10"	24' 0"
LWL	23' 9"	21' 8"	21' 9"	19' 6"
Beam	10' 6"	8' 6"	8' 10"	8' 9"
Draft	4' 0" (or 5' 2")	4' 4"	4' 0"	4' 0"
Displacement	7,100 lb	6,800 lb	6,850 lb	3,200 lb
Ballast	3,100 lb	3,000 lb	2,700 lb	1,050 lb
LOA/LWL ratio	1.197	1.273	1.233	1.231
Beam/LWL ratio	0.442	0.392	0.406	0.449
Displ./LWL ratio	233.3	298.5	297.2	192.7
Bal./Displ. ratio	0.437	0.441	0.394	0.328
Sail area	398 sq ft	359 sq ft	340 sq ft	252 sq ft
SA/Displ. ratio	17.4	16.0	15.1	18.6
Capsize number	2.19	1.79	1.86	2.38
Comfort ratio	18.9	25.75	24.82	13.1
Designer	Hunter	W. B. Crealock	Butler and Finch	C&C

Baking aboard

Delicious fresh bread on a Cape Dory 36

by Kim Ode

Follow these tips for making bread somewhat less dusty (measure ahead) and somewhat faster to bake (omit the bread pan), and the resulting loaves will be welcome additions on any cruise.

THE SAILOR IN ME ACCEPTED LONG ago that certain foods remain on the hard. When we back out of our slip, we leave behind ice cream, French fries, lemon meringue pies — any food too chancy to keep, too messy to cook, or too delicate to withstand a beam reach.

That's fine. It's good to leave the land behind.

But there's one food I've never stopped missing: fresh-baked bread. I bake a lot of bread at home. I even built a brick oven in our backyard to make better bread. So it was a drag to leave both the task and the taste behind, especially on extended sails. Last summer, I decided to tackle the issue.

Issues, actually. Chief among the many questions was whether our alcohol oven was up to the task. Was there a way to boost the heat? Would conditions on the water affect how the bread rises? How much extra gear and ingredients would be required? Could I make dough and not cause the Coast Guard to wonder about the nature of this fine white dust that covered everything?

I'm happy to report that baking fresh bread aboard is possible (and irresistible). All that was required were a few adjustments to my procedure, my oven, and my expectations.

For starters, I put aside thoughts of a traditional loaf. A loaf pan would be yet another item to store, and the baking time was too long. I shifted my vision to smaller, meal-sized versions of flatbreads, plump little rounds just right for one supper, and breadsticks that I could vary from soft batons to long, pencil-thin grissini.

No messiness

I also developed a streamlined mixing method that sidestepped messiness, a means of kneading that minimized the usual grand slapping about, and a way to make the most of the less-than-fiery heat created by our boat oven.

As with most things marine, the key is to plan ahead, or in this case, measure ahead. I choose my recipes while still at home, then measure out the dry ingredients — flour, salt, and yeast — in Ziploc bags. That saves me from bringing a bag of flour and a jar of yeast. I also use instant yeast, often called rapid-rising or bread-machine yeast, because it doesn't need to be dissolved in water.

Once on board, I mix the dry ingredients with water in my largest bowl. That way, I can do much of the kneading inside the bowl before resorting to a floured board. Then I employ a baker's secret weapon: autolyse.

Autolyse is the practice of letting the dough rest for about 10 minutes. Turn the still somewhat sticky blob of dough onto a floured surface — I use our cutting board — and cover it with the upside-down bowl. This resting period lets the flour fully absorb all the water and helps the dough relax and become easier to handle.

While the dough is resting, you'll notice your doughy hands. Resist the urge to wash them and send the floury bits down the drain, Instead, go on deck and briskly rub your hands together over the leeward rail. Most of the dough will rub off, leaving only a quick rinse to make you presentable.

Quicker kneading

Ten minutes later, the dough will be firmer and less sticky, so the remaining kneading won't take long. Put the dough in a clean bowl coated with a thin sheen of oil, cover with plastic wrap, and set it in a warm place. Keep it out of direct sun and wind — my favorite spot is under the dodger — until it doubles, in about an hour or so.

Now it's time to talk about heat. Our alcohol stove never seems to get

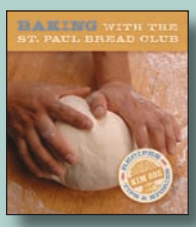
as hot as the stove at home, no matter what the temperature gauge says. So I give the heat a boost by placing a small pizza stone on the bottom rack. This helps retain the heat, but more important, it lets me place the dough directly on a hot surface, making the most of every degree. You can also lay clay tiles to fit on the bottom rack. The key thing is to give the stone plenty of time to preheat — at least 30 minutes before you want to bake and longer if you can.

Warming the cabin is one advantage of baking on a cool day, of course, but hot days work too. On one of the days I baked last summer, it was an unusual 90 degrees in the Apostle Islands, so the cabin could hardly feel any warmer, oven or no. It was good to sit on deck while the bread was baking, the better to answer those who glided by and wondered about the wonderful aroma.

Flatbreads work the best because they're small and bake relatively quickly, as do soft chubby breadsticks. If you're really ambitious, you can make another half-batch of dough, add some dried herbs, and roll skinny grissini — pencil-thin breadsticks — to put in the oven after you remove your loaves. They benefit from a long session in low temps, so you can turn off the oven and let them bake in the waning heat until they're crisp.

The accompanying recipe will provide fresh bread for an evening meal, and the leftovers will make a tasty French toast the next morning. Still have some left? Toast or grill slices for the afternoon's hors d'oeuvres of bruschetta.

For further reading . . .



Kim Ode has a thing about bread. She first built a backyard brick oven in which to bake masterpieces. Then she wrote a book about it: *Baking with the St. Paul Bread Club: Recipes, Tips & Stories.* This book can be ordered from the Minnesota Historical Society Press. To order, visit Kim's homepage at <http://www.kim-ode.com/>. It's also available in many bookstores.

Barbari flatbread

Adapted from *The Art of Bread* (Cooking Club of America)

2 tsp. instant yeast, also known as bread-machine yeast
3 cups unbleached bread flour
½ cup whole wheat or soy flour
1½ tsp. salt
1 tsp. honey or sugar
1¼ cups lukewarm water
2 tbsp. olive oil
Topping: sesame seeds, fresh or dried herbs, seasoned salt, fennel seeds — whatever strikes your fancy

At home, combine the yeast, flours, and salt in a plastic bag and seal well.

On the boat, pour the dry ingredients into a large bowl and make a well in the center. Pour one cup of the water, honey, and olive oil into the well and stir, slowing bringing in flour from the sides until the dough forms a shaggy mass. Mix in additional water as needed to make a firm, moist dough.

Knead in bowl

Knead as much as possible inside the bowl until you've incorporated almost all of the floury bits. Now place the dough on a lightly floured surface and invert the bowl over it, letting it rest for about 10 minutes. Afterward continue kneading a few minutes more until the dough is smooth and satiny.

Clean the mixing bowl and lightly coat it with oil. Put the dough in the bowl, flipping it so the top side is oiled, cover with plastic wrap, and place in a warm, draft-free place until the dough doubles in size, about an hour or so.

Shape in balls

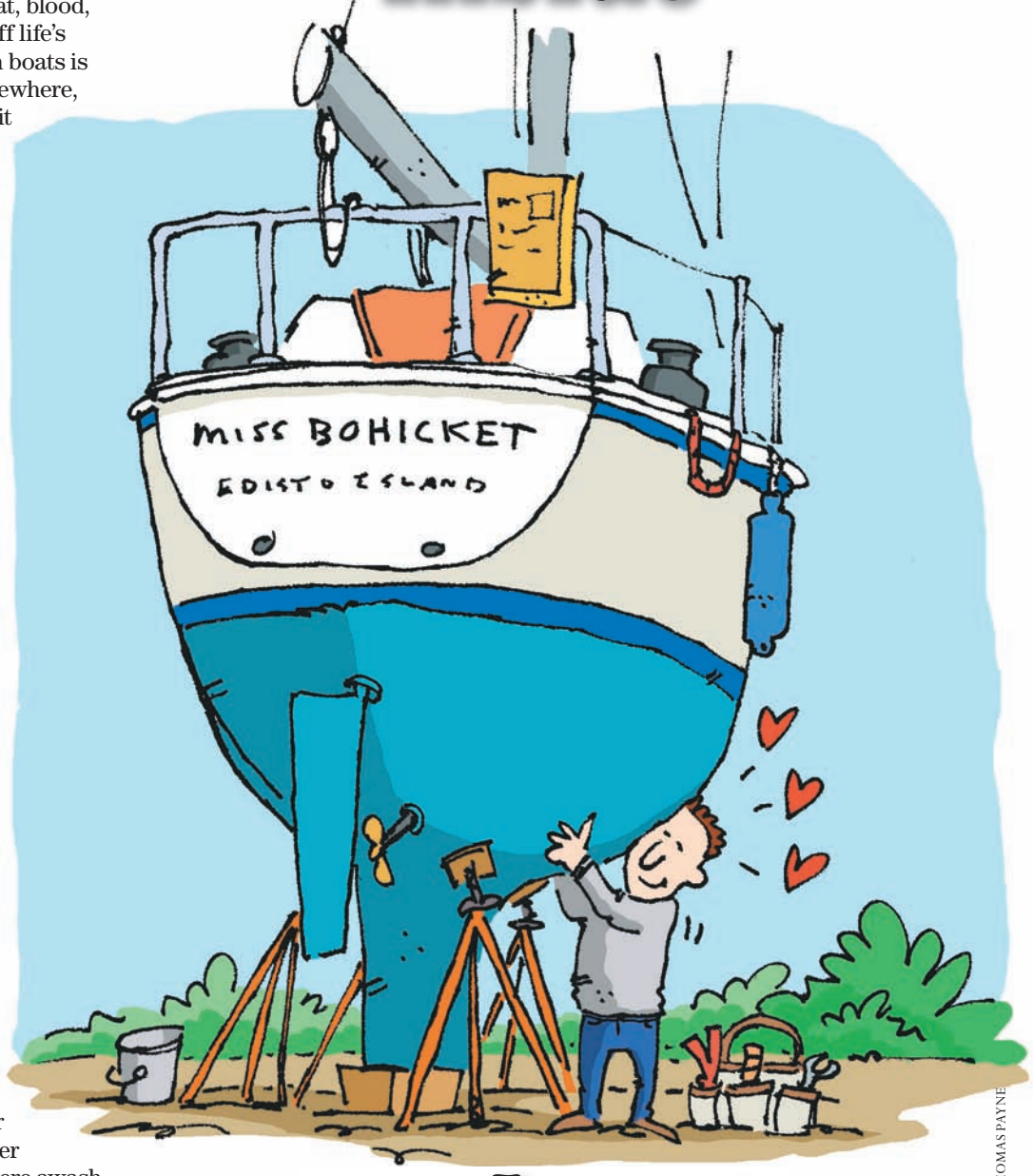
Turn the dough onto a lightly floured surface and divide into four pieces. Gently shape into balls, then cover with a dish towel and let rest for 10 minutes. Shape each piece into a flattened round about 5 inches across, placing each on a separate piece of parchment paper (available in grocery stores near the waxed paper). Cover with a dish towel until doubled, about 45 minutes or so. At the same time, start preheating the oven. (The recipe says 375° F, but our oven never gets above 325° F, so I just increase the baking time.)

When the breads have risen, press your fingertips into the dough to form dimples, then brush with olive oil and sprinkle with toppings. Slide the breads onto a pizza stone or baking sheet. Bake 20 to 25 minutes or until the flatbreads are golden brown and sound hollow when tapped on the bottom.

Knowing her inside and out

Reassurance springs from long hands-on experience

by Phillip Reid



THOMAS PAYNE

AFTER WORKING ON OUR CRUISER-IN-PROGRESS for two months shy of six years, I'm just about done. I don't think I'm boasting my way to a jinx when I say that I know every inch of her now. During post-workday, cocktail-hour relaxing, one of the first talking points my wife and I come to in the list of benefits accruing to those who, like me, drip our own sweat, blood, unrealized income, and hours off life's clock onto the decks of our own boats is that when we get out to St. Somewhere, we've got The Right Stuff when it comes to fixing something that isn't going nearly as smoothly as the evening's drinking.

To me, though, standing way on the other side of Omygod Day (March the something, 2000), the primary advantage to having crawled my way, cursing and grunting, of course, into all the impossibly dark non-corners and recesses of my vessel is psychological. And the most important part of my boat for me to learn intimately was her bottom. Why? Sometimes my imagination is not my friend. The scariest thing that can happen to a boat is to sink, and the way most boats sink is from leaking. Potentially catastrophic leaks come in from the water the boat's sailing in and work their way from the floorboards up the graduated terror scale 'til they get to the mark that says, "You must be this tall to ride."

The first few times we took *Miss Bohicket* out for a taut-gut, tight-lipped, out-and-back sail, she was a great big old mystery containing some vague number of potential ingress points, through which water could, unseen, fill up some other vague number of unknown nether regions, until the bilge boards were awash and whatever general buzz we had at being underway would flip in a flash to general panic at soon being underwater.

Familiar territory

While doing this-and-that over the next six years of bullet-list upgrades and re-do's, though, what was under those bilge boards turned into familiar territory — grungy gray-painted space by grime-speckled water hose, each annoying little fiberglass cut accompanied by an annoying little muscle

crick. In the process I learned her bottom. I learned what was attached to what, and where, and how sturdily. I scrubbed away decades of grime and slime to reveal the thick, green, solid roving-and-resin that separated my dry bunk cushions and box of cereal from fathoms of cold, salty, dark ocean. I hewed out old gate valves and put in textbook-endorsed seacocks and backing pads so that every place where we voluntarily let sea water in was a place for which I was solely responsible (and for which my herniated disk had gotten just a little bit worse).

I put a laughably enormous socket wrench (normally used for tightening floating piers) on the keel bolts to test their tenacity. I dug out waterlogged and muddy gobs of foam from bilge floors and packed in epoxy and shredded fiberglass. I've crammed parts of my 6-foot, 200-pound self into places that haven't seen sunlight since long-haired Pearson factory clock-punchers dropped liner into hull the same year "Margaritaville" went to number one. (I was 9 — Elvis died that year.)

And then of course we hauled her out — twice — and I ran my eyes and hands over the outside of her bottom too, concentrating again on potential ingress points. When I saw or touched anything that gave me pause, I loaded a tube of 3M 5200 or mixed up a tub of epoxy. I gripped and shook the rudder and prop shaft. Once satisfied that what I saw on the jack stands was going to do just fine at keeping the water on the outside from getting to the inside, I could relax a little, walk around slowly, and muse on the shapes of her bottom.

Unfinished surfaces

The inside of her bottom is like backstage . . . all function: plumbing, wires, unfinished surfaces, and scummy bilge water. But the outside of her bottom is where she's most a boat . . . where she touches the water she's designed to move on and through. All is rounded, streamlined, uninterrupted flow. Hull shape, keel shape, skeg, and rudder reach a meeting point of strength and speed that gives me confidence she can handle the wrestle-dance of push and pull, thrust and friction, of a keelboat moving through big water.

When we sail her now, I don't think of her as all that big, and I certainly don't think of her as mysterious. Perhaps what's most important is that I don't think of her as some held-together contraption at the mercy of rolling tons of Atlantic and whistling winds. I know for a fact she's a tight unified structure built the way a boat needs to be built; she may have been put together from parts, but finally she is one thing. And if that bilge alarm ever does start screeching and those floorboards ever do start floating up off their appointed places, my racing brain will know exactly what my wide eyes will be looking at while my desperate hands grip that flashlight. I'll have the picture I need already in my brain to guide my path to salvation, even if it is the middle of the night and the ocean is in motion. And that makes every daysail that much easier to enjoy . . . that and the contemplation of heading out into the big blue.

A bluewater-capable yacht, Continued from Page 34

forces she generates quickly become unmanageable and dangerous. *Silk* offered the perfect learning environment while we made every mistake in the book; *Hawk* demands all the skills we've acquired to sail safely.

Fitness – Before we started sailing *Hawk*, I'd been of the "bigger boat, bigger winches, no problem" school. But we quickly discovered that bigger winches won't wrestle a weightier anchor out of a locker, won't flake and tie down an ill-mannered mainsail, and won't claw down and secure a furling sail if the furler breaks. Only after we moved up to *Hawk* did I start to notice the direct correlation between the waterline length of racing boats and the size of the crews' necks and biceps — and those boats have *big* winches!

Reliance on mechanical aids – No matter how fit we are, we still have to rely on mechanical aids to handle the forces generated by *Hawk's* sails and anchors. Some sort of mechanical device needs to be between those forces and us at all times: a self-tailing winch, rope clutch, furler, or windlass. We need additional leverage from some sort of mechanical advantage to adjust our checkstays, vangs, and most of our halyards. We find ourselves constantly walking a fine line between controlling the forces on *Hawk* and becoming dependent on mechanical aids. Adding in-mast or in-boom furling would greatly facilitate handling our mainsail but would leave us with few options if it broke.

Scale – On a bigger boat, everything is bigger. When coiling lines, your hands need to be larger to hold the loops. You need to be taller to reach the top of the boom to put sail ties over the sail or to attach the halyard to the headboard of the mainsail. You need to be stronger to wrestle an anchor off the bow or out of a locker. A bigger boat may mean that smaller crewmembers can't manage simple things like putting the sail cover on by themselves.

Our conclusions

In considering the pros and cons of moving up 10 feet, we've come to four conclusions. First, it would have been a mistake for us to have started out on *Hawk*. Given our almost total lack of offshore sailing experience, we needed a boat that would help us get out of trouble, not one that would help us get into it.

Second, somewhere around 40 feet seems to be the optimal length for a "first" offshore boat. This is large enough to stow the basics and some luxuries, such as spare light-air sails and extra fuel and water; to carry a generator and a watermaker without making major compromises in other areas; and to offer guests some measure of privacy without using the main saloon as a sleeping area.

Third, it will be fairly obvious if you really need a boat larger than that. If you have children, intend to have visitors or crew aboard more than a third of the time, plan on "expedition sailing" to remote places for extended periods, or want to pursue some activity, like scuba diving, that requires a great deal of space, a larger boat may well make sense — but only if you're certain you can afford it.

Fourth, boat size needs to be limited by the fitness and strength of the regular crew. If a furler breaks, the crew must be able to drop a jib in gale conditions and gather it on deck. If the electric windlass fails, the crew still has to be able to retrieve a storm anchor. Otherwise, overall safety actually decreases in a larger boat. Most experienced couples who don't want to depend upon crew feel comfortable with a maximum length somewhere around 50 feet.

Next issue, in the second part of this series, Beth will discuss screening criteria, such as stability and durability.

Boats

Kaiser 26 Mk II
Lovely full-keel 1972 classic. Well-built fiberglass boat. LOA 27'6", LOD 26', beam 7'10", draft 4'. Main, furling genoa, asymmetrical spinnaker, hank-on jib and second genoa. Sleeps 4. 6' headroom. New VHF, speed, compass, and masthead nav lights. Small original Westerbeke-Petter diesel. Located Penobscot, Maine. $12,000.

Dorie Meltreder
207-326-9676

Stone Horse 23
Cutter-rigged sloop. Sam Crocker design. Built '80 by Landing School in Kennebunkport, Maine, from white oak framing and Atlantic white cedar planking. Loaded w/electronics and Tillerpilot. Exc care last 14 years by professional boatbuilder. Recent survey and many upgrades. 7-hp IB diesel. Comes w/mooring cover, storage cover, custom heavy-duty double-axle trailer. A competent cruising boat in show-quality cond. <http://www.geocities.com/gpsailorman>.

Perry Munson
313-886-3611

Columbia 43
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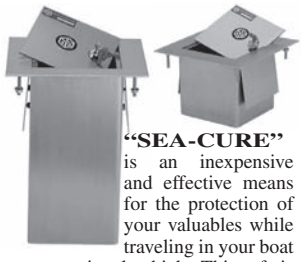

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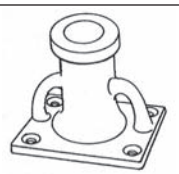

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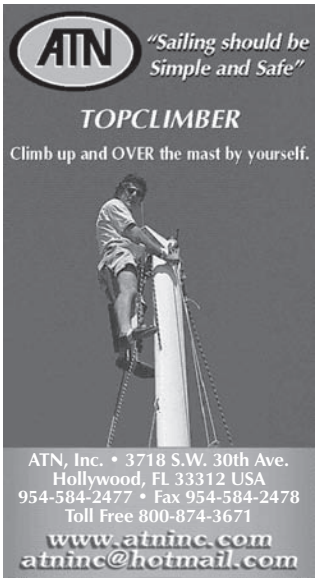

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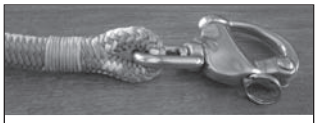

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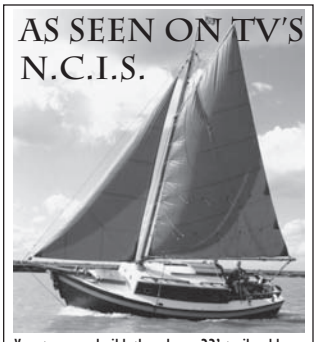

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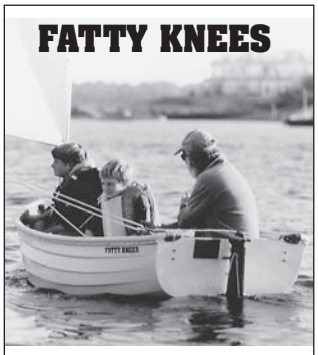

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Fuel-can caddy

A better way to store that extra fuel

by Gregg Nestor

Gregg's four-sided fuel-can caddy will prevent his fuel can from getting away. The fuel container itself (in theory) will prevent Gregg from running out of fuel while on vacation.

Just about every time I step aboard a sailboat, I learn something. This was the case during our two-week cruise two years ago. The first thing I learned was that no matter how closely you monitor the weather and adjust your itinerary, the wind will most likely be on the nose. The second thing I learned was that, because you'll be using your engine more often than you had planned, you need to know where you can get diesel along the way. Better yet, you should carry extra fuel on board.

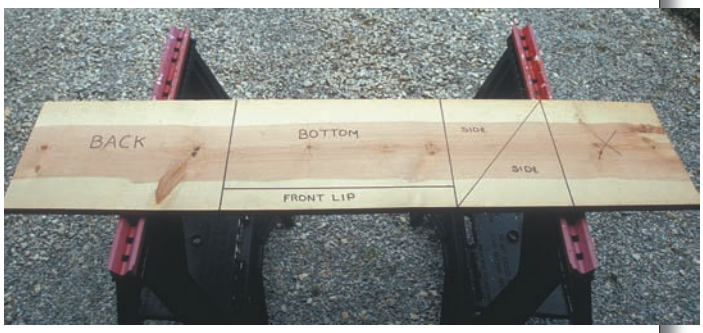
With all that in mind, prior to last year's cruise I began investigating the ways other cruisers store extra fuel. The majority of them have mounted a plank between two stanchions and then lashed a series of fuel cans to the plank. While that may appear to be a good solution, it doesn't work in all instances. The length of the boat, the width of the sidedecks, and the location of deck hardware, not to mention the headsail and its sheets, can add complications.

Since our cruise wasn't going to remove us from civilization for an extended period, all we needed was the means to store an extra 5 or 10 gallons of diesel. It's possible that I was overdoing it, but I'm an Eagle Scout and I like to be prepared.

Over the winter months, I had added a series of shelves in our attic to organize all that stuff we keep up there and never use. After the project was complete, I had a leftover 4-foot piece of 1-inch by 12-inch pine shelving. Perfect. I measured my fuel can and I drew out the components of my new fuel-can caddy on the board. This consisted of a base, a back, two angled sides, and a front lip.

To secure the caddy to the boat, I used a single, quick-release, rail-mount bracket. A belt of nylon webbing was fastened around the caddy and the fuel can to keep it snugly in place. To help with drainage, I set a scrap piece of Dri-Dek under the can and drilled two angled holes at the base of the caddy at the back.

We had a wonderful time on our cruise last year and made several new friends. Our fuel caddy saved us from the potential embarrassment of running out of fuel. And the wind was on the nose.



Gregg made good use of a leftover piece of pine shelving. He drew the components of a four-sided open-top box (a base with drainage holes, a back, two angled sides, and a front lip) and assembled them. He lashed the jug with a piece of webbing and used a quick-release, rail-mount bracket to secure the whole thing to a stanchion.

More galley space

A simple swing-up counter extension

by Gregg Nestor

The U-shaped galley in our Pearson 28-2 seemed more than adequate to me, especially when compared to that of our O'Day 222 trailersailer. However, my wife suggested that additional counter space would really make food preparation easier and leave the dining table for just that… dining. After a two-week cruise, I readily concurred.

The cabinetry in our boat is varnished teak and the quality of the joinery is above average. Unfortunately, I'm neither a cabinetmaker nor finish carpenter, and I was a bit hesitant to do even a partial makeover. I figured that a less invasive and more novel approach was called for. Since the counter would not be used all the time, I entertained the idea of a drop-leaf design. This involved the use of a 14-inch spring-loaded foldable brace (commonly used on drop-leaf tables); a 16-inch piano hinge; a 1-inch by ½-inch by 21-inch hardwood spacer to accommodate the brace when folded; and a hardwood cutting board as the counter top.

The space I had to work with was approximately 15 by 24 inches. I mounted the hardwood spacer along with the piano hinge to the existing galley cabinet. I found a maple cutting board that measured 14 by 23 inches and to it I fastened the long end of the spring-loaded foldable brace. (This is the tricky part. Carefully follow the directions that come with the brace. If measured or mounted incorrectly, the brace will neither completely fold nor completely extend. To avoid ending up with a series of holes, I first made a mockup out of scrap wood.) Next, I mounted the cutting board to the piano hinge (pre-drilled holes made the task easy) and finished off the job by fastening the short end of the spring-loaded brace to the galley cabinet (again, having carefully measured). Voilà!

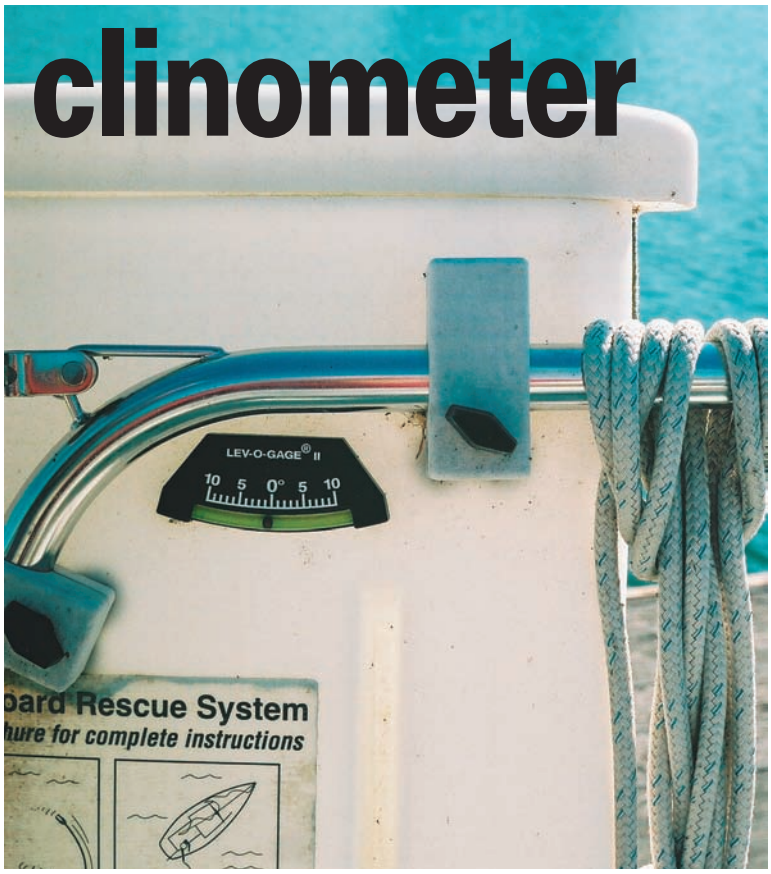
While 14 by 23 inches doesn't sound overly large, our new swing-up counter extension increases our usable counter space by almost 50 percent and, when not in use, is out of the way. By using off-the-shelf materials, I didn't have to disturb the existing cabinetry and I kept the cost under $20.

The advantage of a swing-up counter is that it will disappear when not needed. Gregg increased the counter space in his Pearson 28-2 by 50 percent with the addition of this 14- by 23-inch swing-up counter. Notice, at left, that the spacer allows room between the cutting board and the galley cabinet for the brace when folded.

Sideways clinometer

An easy way to check fore-and-aft trim

by Walt Hodge



I GOT TIRED OF LOOKING OVER THE TRANSOM TO check trim fore and aft. Our Ranger 28 has a reverse transom, which makes it difficult to see the waterline.

My solution was to install a small clinometer oriented fore and aft in the cockpit. The work was done in the slip, with the boat at rest and on her lines. I was fortunate to find an eye level spot on our Lifesling case, but many other locations will do.

Now I can tell at a glance what the trim is without having to look away from boat traffic or any islands preparing to ram us.

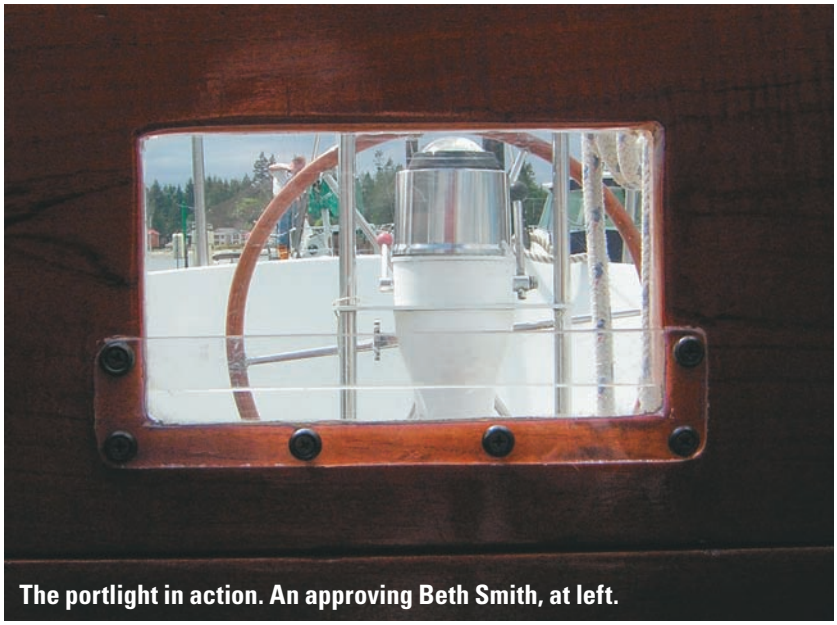
How's your boat sitting on her lines? Check with a clinometer oriented fore and aft, rather than from side to side.

Companionway vent

A simple portlight maintains airflow

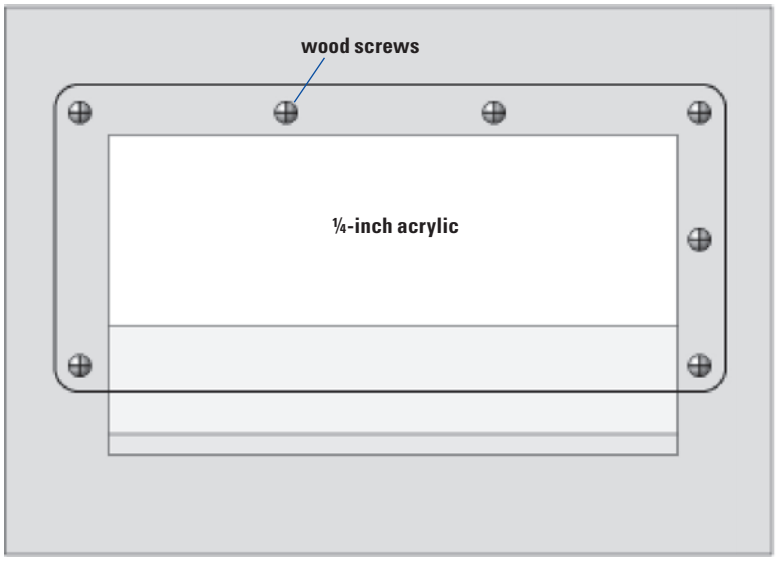
by Richard Smith

I've built a simple portlight vent into the companionway hatches of several of my boats and wouldn't cruise without one. They help maintain a flow of clean air throughout the boat at all times, especially in the galley area where every little bit helps get rid of moisture from pots of steaming clams and boiling pasta, especially during rainy spells and autumn days and nights when things are apt to get closed up too much. Located at exactly the right height, these openings do a good job of relieving the feeling of separation from the outdoors that meal-getting can occasion.

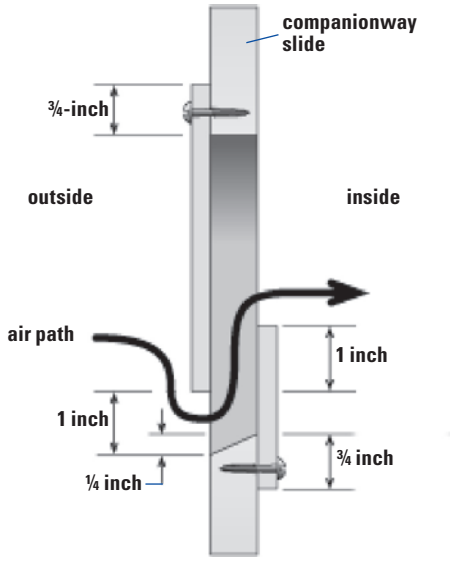


The portlight in action. An approving Beth Smith, at left.

Obviously, these little portlight vents can be of any size; my present one is fitted to a 4½- by 8½-inch cutout. The acrylic overlaps the wood by about ¾ inch. Stop the outside piece about an inch short of the sill and make sure the inside piece extends at least 1 inch above the lower edge of the outside piece. Bevel the sill of the cutout to ensure good drainage. Use roundhead wood screws, even though in the vent shown in the photographs I used some flathead brass screws set in cup washers. (I must not have had any roundhead screws handy.) Don't fit the screws against the acrylic too tightly. I wouldn't countersink the heads. Bed in a good silicone compound.



View of portlight



Cutaway view

Flirting with a Hunter 28.5, Continued from Page 51

Looked easy

"Warren made singlehanding the boat look easy, which I would judge was partly because of his skill and experience and partly because the boat's size and layout work well enough with a crew of one," Jerry continues.

"The interior of the 28.5 is very innovative. The lack of a major bulkhead near the chainplates makes the interior feel very open. The layout has the head next to the companionway to starboard, which is a nice feature, but some owners complain that the head is a bit too small. I admit to thinking the same thing.

"In summary," Jerry says, "the 28.5 sails and motors well and offers a good value and a good platform for singlehanding. I can see why Warren likes his boat."

Remaining leg

So, in the spring of 2004, the first sailing opportunity following his three-boat year, Warren brought his baby home to his favorite marina in Deale, Maryland, which had been rebuilt from the ravages of the hurricane and was protected by an additional stone jetty in the approach channel. His original plans for this 100-mile maiden voyage called for a friend to join him on what was to be a two-day trip at the end of April. But his friend got called away on business at the last moment. Warren was lucky to find another friend and sailor to join him on the trip.

The marina where he bought *CrewZen* provided a van to pick Warren and his crew up at his marina in Deale and drive them to the boat in Havre de Grace, avoiding the awkward car shuffle that boat movements like this often entail. The voyage began in mid-afternoon and ended that evening at a quiet anchorage some 25 miles south. It had all been accomplished with the help of the engine, as the wind and waves were right on the nose.

The morning of the second day dawned gray and gloomy, so the two donned their foul weather gear for the remaining leg. Although Warren hoped to raise the sails on his newest boat, it wasn't to be; the wind and waves continued to come from the south. Late that evening they pulled into his marina, tired but delighted with how well the boat did under power. The next few days would provide ample opportunity to get some sails up and to experience the fun and exhilaration that sailing this boat can provide.

With the Hunter 28.5, we're absolutely, positively certain (well, sort of sure anyway) that Warren has found the boat that's just right for him (for now). It wasn't an easy path. He had to learn more about his own sailing habits and understand the realities of his sailing location. And he had to experiment with several types of sailboats (in an attempt to understand all the different options out there, of course). Each boat is a collection of compromises, as we all know.

Warren Milberg has tried most and settled down with a Hunter 28.5 . . . at least for now.

BOB GREISER

Not in our backyard!

Dear readers, you'll notice the new Mail Buoy photo on this page. Ellen O'Brien, from Seward, Alaska, sent two wonderful images of aids to navigation that immediately remind the viewer of the Pacific Northwest.

Ellen says, "Since our last trip to Prince William Sound here in Alaska, I've thought your Mail Buoy logo with the sea gull was somewhat boring. For that reason, I'm sending you a picture, in case you'd like a change, of a buoy marking the entrance to Cordova Harbor."

We were enchanted by Ellen's lazy sea lions! We don't have an exclusive on our good old buoy (in fact, it's due for maintenance by the buoy tender). We'd like to see one with an osprey's nest from the Chesapeake, perhaps, and other charming and interesting buoys in scenes that you might encounter when you're out there. Please take your camera along, set it on high resolution (if it's digital), and send us your favorite aid to navigation with or without the accompanying wildlife!

Editors

Schooner luminaries

I really enjoyed the article on schooners in the May 2007 issue, but was disappointed to see no mention of John Alden, Thomas Colvin, and Olin Stephens. John Alden was perhaps the most noted designer of schooners for cruising and yachting. Although not typically designed for racing, his schooners were seaworthy, seakindly, and had enough speed to do quite well in races, such as those to Bermuda. His Malabar series, in particular, is noteworthy.

Thomas Colvin has designed many cruisers and schooners and is noted for perhaps the most prolific true bluewater cruising boat ever, the Gazelle, with more than 700 built worldwide. And Olin Stephens even designed a schooner — the *Brilliant* at Mystic Seaport, now celebrating its 75th year.

George Wall
Old Saybrook, Conn.

Ted Brewer replies

I didn't mention Murray Peterson either or many other schooner designers, as there is only so much space in one article. I did try to contact Alden's to get info on a design but never heard from anyone. In any case, the article was not about designers of schooners but, rather, about types of schooners and the merits of the rig.

Ted Brewer
Agassiz, British Columbia

C'mon, you call that *work*?

Thank you for sending us the May 2007 issue of *Good Old Boat* containing Ted Brewer's flattering reference to our topsail schooner (and state tallship) *Californian*. Please thank Ted for the reference and for the fine article. As executive director of the Maritime Museum of San Diego, it's my job to take care of a number of good very old boats and occasionally I get to sail them as well (see photo at left of the *Star of India* and the *Californian*). As a subscriber for several years, I appreciate the opportunity to tell you that *Good Old Boat* is by far my favorite sailing magazine, being the only one I actually subscribe to.

Ray Ashley, Executive Director
Maritime Museum of San Diego

Innovative muffler

Please pass on to Paul Ring my congratulations on the very innovative muffler he built and the most comprehensive article (May 2007) about wet exhaust systems I have seen in the almost 30 years in the exhaust system business.

Dave Parks, Marine Muffler Corp.
Apopka, Fla.

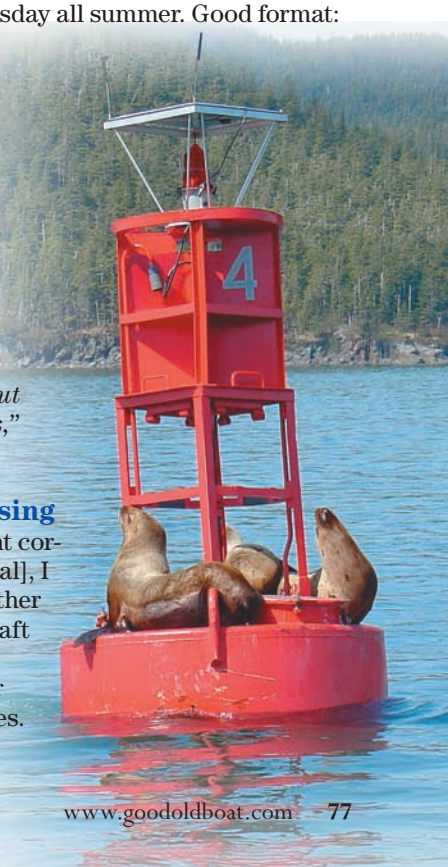
Good Old RC boats?

Thanks a heap for the note in the magazine (May 2007). It's hard for me to think of the RC Laser model as a good old boat because, like everything else, it seems like it was done just yesterday. But in fact it really has been around for a while. I race with a good group at Noroton Yacht Club here in Connecticut every Wednesday all summer. Good format: race first, then have dinner and lots of wine at the club.

The magazine is looking good. Please avoid making a profit, as that would be against the rules of sailing publications. All the best.

Bruce Kirby
Rowayton, Conn.

We're here to confess, Bruce, that this magazine is not in danger of making us rich. No need to fret about our "not following the rules," apparently.



An argument for licensing

Although you are 100 percent correct [in the May 2007 editorial], I must disagree with you. Neither the automobile nor the aircraft industry "screams" about the absolute requirement for driver's and/or pilot's licenses. If we require licensing for

personal vehicles and personal planes, we must add license requirements to boating.

You are absolutely correct when you claim that having a license will not *make* us safe boaters, just as the possession of a driver's or pilot's license does not *make* us safe operators. News headlines are full of the results of sheer idiocy.

Nevertheless, the possession of a legal license means that the holder has at least a basic knowledge of the rules and regulations pertaining to his activity. During 25 years of sailing, I (and probably every other boater) have witnessed absolutely stupid and dangerous moves by people who simply did not know any better. We have seen unknowing boaters put themselves and their families in dire straits without having the least idea of what they were doing.

You are correct in claiming that just the holding of a license would not make anyone any safer on the water. But from riding out a Sea of Japan typhoon as a very young sailor, all the way to getting caught in a wrong weather forecast, I have learned that our playground — the water — can be a very nasty playmate indeed.

Maybe requiring a course of study and the securing of a license would save the lives of a few sailors and their crewmembers. Before we take out the car or head the plane down the runway, we must pass that course of study. Right now, all we need to take out any boat — with our proud family by our side — is a check for the down payment. Not a good idea.

You are right, but I think I am too.

I am a very avid reader of *Good Old Boat.*

Barry J. Marcus
Milford, Mass.

And furthermore on licensing

I agree with you that exams don't make safe boaters. The exams may not be even Pablum-grade, as you suggest. I have been sailing small boats for nearly 40 years and scored 81 on the Oregon boaters' exam. Passing is 80. While I may not know the proper sequence of lights for a towing vessel at night (I stay away from all lights if I am caught out at night), I have been boating safely for all these years.

This exam appears to be contracted out to a private firm. The multiple choice questions included gems such as, "Who administers the state's boating laws?" *Administers*? Do you mean who *writes* them, who is *responsible for* them, or who *enforces* them? The Coast Guard wasn't an option. The sheriff enforces them on our lake. But the question-writers may be looking for the Marine Board as their answer. How does *this* make me a safer boater? Another question asked about the effect of an alcoholic drink on water compared to on land: 1x, 3x, 5x, 10x. *What*? Blood alcohol level would be the same. Maybe they think water is a more hazardous environment. I chose 3x. I have no idea.

This is like the California Bar Exam; the developers make questions obscure enough to fail half the test-takers.

In this case, maybe they said, "We need to make boating safer. Let's have a test. Let's farm it out to a private firm. Now, don't *we* feel better?"

Jim Bradley
Detroit, Ore.

Thread grabber revisions

In the March 2007 edition, Walter Pearson presents a great idea for the singlehanded mechanic with his "Thread Grabber." I would like to build on the idea. I've got about six different sizes of fasteners coming through a variety of surfaces that can't be reached on both sides by human hands. Investing in a pair of Vise-Grips for each size would blow my tool budget.

I suggest splitting one nut of each size, but only through one side. Work the nut on and off an appropriate-sized bolt to clean up the burrs on the threads. Splitting can be accomplished with a Dremel tool as Walter suggests, a hacksaw, or a die grinder with cutting wheel. Now the nut can be started on the bolt and grabbed at right angles to the split with the Vise-Grip pliers. The cut allows for the nut to compress enough to hold the bolt in place. Now the toolbox only needs the addition of an old pill box (good old sailors have plenty of them) with a collection of nuts. The Vise-Grips were there to begin with.

Scotty and Carolyn Scott
Nekoosa, Wis.

Stainless-steel time bombs

Searcher, my Cape Dory 22, is finally in the water. One of the reasons I am so late launching was the continuing epidemic of stainless-steel failures that started a couple of years ago. During my somewhat paranoid annual inspection of all of the boat's hardware, I found both my main halyard shackle and the toggle at the top of the backstay to be cracked. The shackle could have caused a major inconvenience, but the toggle would have brought down the mast.

In the last couple of years I have found cracks in lower shroud toggles, the jib tack shackle, and a tiller bolt, of all things. I have also had a ¼-inch clevis pin disintegrate under load. Fortunately, it was at the chainplate attachment of an aft lower shroud, and *Searcher*, like most good old boats, has a redundant rig with double lowers. If it had been in an upper, things could have been a bit more dramatic as we were hard on the wind in a fresh breeze at the time.

I also replaced all of the shrouds and stays when I found a crack in a swage fitting. Such cracks normally run parallel to the rigging wire, not at a right angle to the direction of loading, as you might expect. Last year I replaced the backstay for the second time.

When many good old boats were built, Types 301 and 302 and Type 304 stainless steel were the most common materials used for rigging and deck hardware. (They still are, although the use of Type 316, a much better material for marine applications, has now become more common.) The 18-8 percent and 19-9 percent alloys are not completely corrosion-resistant, as anyone who

routinely cleans those red iron streaks from his hardware knows, and they are particularly prone to intergranular corrosion and stress corrosion cracking.

The two main aggravating factors for this type of attack are high residual stresses and service in a warm, corrosive medium. As well as the residual stresses left from the manufacturing or swaging process, rigging hardware is subject to both steady stress and additional applied loads when under sail. Particularly for boats that live in warm salt water, stress corrosion cracking is common and insidious; it can develop quickly after years of satisfactory service.

Except for finding a crack or substantial pitting before either has grown to the point of failure, there is no way, short of cutting the fitting up for metallurgical investigation, to determine if a particular piece of hardware will fail in this manner. (The *West Marine Advisor*, available both in the company's catalog and online, has an excellent article on this subject.)

Anyway, the problem of stainless steel that isn't stainless anymore can be a real menace to the boatowners. They should be aware of this problem and the importance of polishing all the critical components in the rig and then carefully inspecting them visually under magnification every year. Anything showing cracks should be replaced. Minor surface corrosion is to be expected and should be easily removed by polishing, but any fitting with excessive corrosion and surface pitting should also be given a decent burial before it takes the whole good old rig with it.

Jule Miller
Nevis and St. Kitts, West Indies

A totally different side of Jule is featured in this issue as the author of the book/audiobook excerpt that begins on Page 44.

Missing Skipper Bob

Robert D. Reib, *a.k.a.* Skipper Bob, died December 11, 2006. Cruising with first mate, Elaine, he compiled inexpensive, detailed, and reliable guides to many rivers and canals of the U.S. and Canada. His guides exude his personal knowledge and affection for the waters of which he wrote. His enthusiasm created a community of volunteers who sent him data for the guides, helping to keep them up-to-date through succeeding editions.

Skipper Bob was a credit to the cruising community and his work was invaluable to us all. A personal note from Elaine indicates that, along with daughter Roberta, she plans to continue publishing the guides.

Jim Hawkins and Ellie Adams
Minneapolis, Minn.

Ready-made cockpit plotter

I enjoyed reading the article entitled "Cockpit Piloting," by Richard Smith in the May 2007 issue. I agree with Richard's philosophy of keeping the charts handy to compare to the real world and his view that working with the charts is fun! His creative way to keep his chart handy to the helm is commendable.

I want to point out to those who like his idea, but don't have the knack or inclination to design a custom way to stow their charts, that Weems & Plath offers a product that does essentially the same thing. The Chartkit Plotter is a portable navigation system that holds any chart, chart kit,

or chart book. It is constructed of a solid wooden frame with a rugged plastic center that incorporates an adjustable plotting arm fitted with a rotating compass rose. An acrylic sheet overlays and protects the chart as you plot. The plotter is a great value at $110, which includes a black nylon carrying case and four dry-erase markers.

Cathie Trogdon, VP Public Relations
Weems & Plath, Annapolis, Md.

Sorry, Cathie, we should have remembered the very nice plotter made by Weems & Plath. Good Old Boat *covered yours in our September 2002 issue*

Keeping the dream alive

I read your magazine and thoroughly enjoyed it. I was impressed with the wide range of topics you cover, from women participating in the sailing experience to RC boats to the science of splicing ropes. [Not a sailor yet,] I would love a reading recommendation on sailing basics.

Life here in Iraq has been quiet the past few months. My team has recently moved from our Combat Out Post (COP) Destroyer to the Forward Operating Base (FOB) Sykes. We now enjoy constant electricity, indoor plumbing, hot food, and many more luxuries that the COP didn't offer. Thanks for your support.

Captain Gregory Andres
FOB Sykes, Iraq

The Good Old Boat *editors have been sending copies to soldiers in Iraq. In return we've received several insightful notes about military life in Iraq, including this one with a photo (above) from Gregory Andres.*

Software discovery

SailCruiser, a PC marine navigation software I have discovered, is a helpful navigational tool for sailors <http://www.navsim.com/products/bc2sail/>. SailCruiser accounts for sailboat tacking using wind, speed, and direction and is able to calculate accurate ETA during tacking legs. The program provides a clear display of the optimal tacking route and shows the tacking time to destination (TTD).

Furthermore, polar plots can be entered for individual boat performance. For racers, this program would be an invaluable aid, showing tacking routes and TTD around an entire course. For the recreational sailor, SailCruiser provides many useful tools, including ETA on journeys.

SailCruiser has a wide range of chart support including free NOAA regions for the U.S. and C-Map NT+ / MAX. The program is also compatible with many marine devices

including GPS, AIS, depth sounder, and anemometer. Pricing for SailCruiser starts at $359. It is packed with plenty of intuitive features for sailing, whether planning a route on land or following a route on the water.

Gregg Babish
Regina, Saskatchewan

Loose-footed main

Could you comment on the pros and cons of a loose-footed main vs. one secured by a boltrope or tracks on the boom?

Marv Crompton
Mentor, Ohio

Sailrite's Matt Grant responds

The pros and cons should be considered boat by boat. If the boat is used for racing, a loose-footed mainsail has an advantage, assuming that sail area can be increased with a large foot round. If the boat is for cruising or daysailing, then adding extra sail area and giving up a little ease of sail handling when dousing may be an unwise trade-off. This said, we all know that even cruisers want their boats to be as fast as possible. If you are one of those competitive cruisers, you may want to hear all of the pros and cons:

Reasons to have a loose-footed mainsail:

- ***More potential sail area*** – More sail area and closing the gap between the boat and the sail can improve performance. In most cases this performance change is not measurable, as the increase to area is often insignificant.
- ***Reduced diverted airflow at the bottom of the sail*** – With a loose-footed sail, the foot edge of the sail can hold a shape more like a headsail, instead of being forced to follow the typical straight boom.
- ***Loose-footed mainsails are easier to build*** – Given that I own Sailrite, and we market do-it-yourself canvas and sail work, I must mention this.

Reasons to have a mainsail attached to the boom:

- ***Ease of handling when lowering the mainsail*** – When the sail's lower edge (foot) is captive to the boom, it is easier to flake the sail.
- ***Adjusting sail shape through the outhaul is easier with sails attached to the boom*** – By this I mean adjustments are more forgiving. Shape is transferred evenly into the sail along the boom. With a loose-footed sail, it is easy to ease the outhaul too much and create a sock-like shape to the lower portion of the mainsail. Or if the outhaul is too tight, the foot round could go slack and flap, decreasing sail efficiency.
- ***Forget the foot line*** – If the sail is attached to the boom there is no need for a supplemental foot line to support an excessively large foot round.
- ***Longer sail life*** – Anything that can be done to reduce a sail's edges from potential fluttering will increase the sail's life. I guarantee that having a loose-footed mainsail will require you to make more frequent trips to the sewing machine.

I hope these comments help you to determine which sail type is appropriate for your boat and sailing lifestyle.

Matt Grant, Sailrite
Churubusco, Ind.

Of anchor angels and brake drums

Thanks for a great magazine that just gets better. Here's an alternative dead-weight anchoring system [to the one mentioned in the May 2007 Anchor Sentinels 101 column].

At Dixie Sailing Club on Lake Martin in Alabama, we use semitrailer brake drums as dead-weight anchors. These brake drums are similar to car brake drums, except they weigh from 65 to 80 pounds. The drums are sourced from local shops that repair semitrailers. These brake drums are too thin to be turned again, so they are scrap and worth only about $5. Thus, the price is attractive. Since the individual drums are the heaviest component, they can be handled easier than single large blocks of stone or concrete. The drums are rusty, rough, and abrasive, so you'll have to work from a boat that can be protected from the drums, and don't forget to wear heavy gloves.

The ground tackle should be heavily galvanized, with swivels top and bottom. If the depth is more than 20 feet or so, we use large-diameter nylon line 10 feet above the last drum and 5 feet below the buoy. This minimizes the buoy size, since full chain rode would require a larger buoy. It's important to have enough chain above the drums so that the nylon rode doesn't rub on the drums. Since our lake draws down 10 feet each winter, we configure the rode with an extra shackle to shorten its rig for low water.

The galvanized chain anchor rode is looped through the first drum and shackled back to itself. The first drum is lowered to the bottom with the rode.

Then the second drum is threaded onto the rode, kicked overboard, and allowed to settle down onto the first drum. It's helpful to hold the rode taut as the second drum runs down to the bottom, so that the drums nest together. The nesting drums should probably be concave up, although it doesn't seem to make much difference.

Repeat with as many brake drums as necessary to reach the desired dead weight. We typically use five drums. The drums will settle like a caterpillar, conforming to the bottom.

The system life (5 to 8 years) is limited by the life of the rode components; the drums last a long time in fresh water.

Jim Simons
New Orleans, La.

Dinghies of premium hardwood

Hilmark Boats Inc. is located on Vancouver Island on the west coast of Canada. We are fortunate to have a supply of centuries-old cedar that is being reclaimed from blow-downs caused by some very high windstorms this past year. Our company specializes in researching and building historically accurate wooden rowboats, yacht tenders, and daysailers.

This year we will build small yacht tenders that will be some of the very last ever produced from this high-quality wood. Our designs include sail-rigged 10-foot tenders to 20-foot ketch-rigged sailboats. We do not use plywood; the traditional boats of our grandfathers were all built with the same old-growth wood we are using. In our area we have boats that were built in the 1920s that are still on the water and being used by professional fishing guides. The life of these boats is quite remarkable and will provide any club, owner, or organization decades of service.

Hilford Burton, President
Hilmark Boats Inc.
Campbell River, British Columbia

Take friends and family sailing

I have asked sailing friends how they became interested in or were introduced to sailing. Almost every sailor I asked, after careful thought, remembered being taken sailing by a friend or relative. Often this occurred when they were quite young. "My granddaddy had a little sailboat at his cottage" or "A neighbor had a sailboat" or "I was I invited to go sailing one time" are familiar responses.

Those of us who love sailing should replicate these early sailing introductions. We need to take someone sailing. We need to share our treasure, our love, our passion, our obsession with others. Take someone sailing.

By taking someone sailing, you don't need to convince him or her. If the experience is pleasant, especially if the guest was allowed to participate by steering, trimming a sheet, or hoisting a sail, he'll get the feel of sailing.

Don't just say, "It's a great idea," do it! Take someone sailing.

This comes to you from a sailor who, at 9 years of age, was invited by a neighbor to "come sailing."

Jack Klang
Suttons Bay, Mich.

Jack does what he says. The photo at right is of Jack and his granddaughter, Lynn Doherty.

MARGE DOHERTY

We love this stuff!

There's a certain serendipity when Good Old Boat *can make a new connection (or reconnect old acquaintances). We love being the facilitators. Read on.*

Larry Franklin's article (March 2007) rang so many bells for me that I just had to ask: What is the connection between *Asbury's Legacy* and the grand ole sailor of Oklahoma City, Asbury Smith?

Asbury had one of the earliest Kittiwakes built by Kenner, extensively modified it, and built numerous other boats in his long life of sailing in Oklahoma. Seeing the photograph on Page 8 with Oklahoma registration numbers and the name, *Asbury's Legacy*, on the stern of that boat on Page 12 was a magic carpet back to my youth racing in Oklahoma with people like Asbury. Thanks for the trip down memory lane!

Bill Culp
Fayetteville, Ark.

Larry Franklin responds

Thanks for forwarding Bill's email. He is absolutely correct. *Asbury's Legacy* is a tribute to Dr. Asbury Smith of Oklahoma City. Asbury took me under his wing and taught me about sailing, crewing, and racing in 1969 while I was building my first Kittiwake.

Bill Culp is a former Catalina 22 National Champion. He may not remember me, but I met him when he was on the race committee for the Oklahoma Catalina 22 State Championship races several years ago. I look forward to touching base with him again. I'll have to direct him to the Kittiwake 23 Registry website <http://www.kittiwake23registry.com> where he will find a picture of Asbury sailing his Kittiwake, *White Cloud*, and a memorial to him on the history page.

Larry Franklin, The Kittiwake 23 Registry
Gore, Okla.

Ordinary folks, like ourselves

I wanted to tell you how much my wife and I have enjoyed your magazine. We have been buying it at West Marine in Port Clinton, Ohio, for about two years now. It is the only magazine that we seem to relate to. Just ordinary folks, like ourselves, who own good old boats that live on by virtue of elbow grease and love. I have let my subscriptions to the other sailing magazines lapse in lieu of our subscription to yours. *Good Old Boat* is the only one we'll need. It's real!

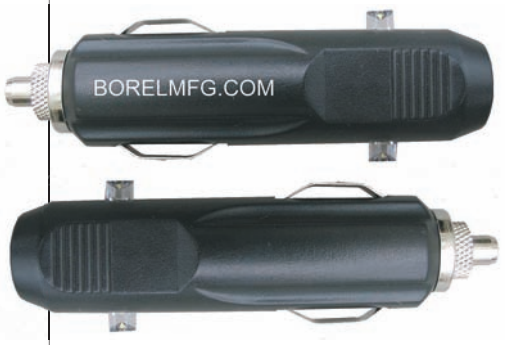
Mark Starkey
Piqua, Ohio

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

Flying Lateen rig simplifies life aboard

Eager to cast off and go each time you get to your boat? Do you singlehand your boat? A California inventor and retired engineer has created a sailing rig that can be deployed in a minute by just one person. The opposite motions of reefing or securing the sail are equally fast and simple. There's one sheet to handle and you tack simply by putting the helm over. Bud Short has developed the Flying Lateen rig and has been testing it on a modified Cal 20. The concept is bound to start popping up on new boats, but if yours loses a mast, this patent-pending replacement rig is available for boats from 15 to 50 feet.

If you are interested in unusual and creative innovations, be sure you have a look at <http://www.flyinglateen.com>, call 949-481-1388, or send your email message to info@flyinglateen.com.



Light up your night

As long as people keep coming up with clever applications for LED technology, it's hard to resist the urge to point them out to our readers. We learned about the Nite-Lite from Van Taiariol of Borel Manufacturing. His latest gizmo is as clever as it is simple. There's no wiring involved. You don't even have to remember to turn it on or off. And it isn't going to drain your batteries. You plug it into a DC power plug on your boat, and it will turn itself on or off depending on the ambient light. It provides a nice amount of light from two LEDs and only draws 8 mAmps. All that, plus for $18.95, you'll receive two of them.

Check them out at <http://www.borelmfg.com>, call 800-824-4449, or send an email message to borelmfg@earthlink.net.

A windvane for pocket cruisers

Peter Tietz of Voyager Windvanes has introduced a self-steering windvane designed for boats up to 32 feet in length. The complete vane weighs approximately 30 pounds and is made of Tenzalloy, a high-tensile-strength aluminum that is polished and then hard anodized. Stainless bolts are coated with Tef-Gel before they're fastened in place, eliminating electrolysis and galling. The gears are made of an indestructible grade of polyurethane similar to that used in the aircraft industry. These vanes carry a six-year warranty on the bearings and a 10-year warranty on everything else. Most importantly, a movable counterweight can be adjusted for light-air or downwind sailing so you don't have to change the vane in those circumstances. This tough new vane also comes with a much lower price tag than expected: $2,495 CDN for the tiller version, with an additional $450 if your boat has wheel steering.

See it at <http://www.voyagerwindvanes.com>, call 866-922-7015, or email pt@voyagerwindvanes.com.

To be featured on this page, items must be new products. If you would like to have your product featured here, please send an email to Michael Facius, michael@goodoldboat.com, or call him at 612-605-8319. By the way, readers, if you contact a marine supplier mentioned here or elsewhere in our magazine, please remember to tell the folks there that *Good Old Boat* sent you.

Old friends and new ones

If you change the boat, the boat changes you

by Jerry Powlas

In the old days when quality was truly more important than price, those of us who were charged with designing things that would be manufactured came to understand that it was the process that mattered. If you wanted a high-quality product, you didn't design a product, you designed a process. The product that resulted from that process could only be *better* than the process by rare and improbable accident, and a good process would simply not allow the product to be *worse* than the process. A good process worked toward ever-improving quality, tolerating less that would drag the quality level lower with each passing day.

In the refit of our Mega 30, I try to remember those lessons. It's taking longer than we had hoped and it's costing more, but I'm keeping the quality up and improving the process as I go along. It will be done when it's done; that will be the first point at which I will be able to determine how long the task should have taken. In something like this refit, old friends and a few new ones play important roles.

The drill press in my shop is older than I am. My dad bought it before the start of World War II. Many of the hand tools are also that old. They served my father, then me, and will serve another generation if I'm careful to place them in the right hands when I don't need them anymore. The small power tools are like lollipops, however: good for a while, then gone. Bosch makes a really good random orbital disk sander. I've completely worn out two of these on the Mega and have three more in various states of function and demise.

> "Cleanup is a big deal. Working with other polyurethanes and polysulfides makes me think of Br'er Rabbit and the Tar Baby."

Any process or tradition that prevents improvement is wrong-headed, so the new friends are equally important. People bad-mouth silicone rubber (RTV), but just about every deck fitting on our C&C 30 was sealed with that stuff by the previous owner, and none of them leaked.

Built samples

On the Mega 30 I have taken to using a new product called Life Seal, which is a blend of polyurethane and silicone rubber. I built samples and cycled them many times from extreme hot to extreme cold. Adhesion is good, but the real charm is that, unlike some of the other sealants, the cleanup is easy. Cleanup is a big deal. Working with other polyurethanes and polysulfides makes me think of Br'er Rabbit and the Tar Baby.

The humble cake frosting decoration bag is also a new friend. After I mix a batch of epoxy, I scrape it into one of these bags and am able to put the material exactly where I want it, including into cheap syringes from the farm store, which I use to inject epoxy into even more delicate places.

> "Working on the Mega…I've learned some things and been reminded of others I'd forgotten."

Working on the Mega has been an interesting project during which I've learned some things and been reminded of others I'd forgotten.

1. You are not born with very many skills. You have to acquire most of them.
2. It is better to use good tools.
3. It is better to acquire the tools at the beginning of the project rather than finally giving in and buying them near the end.
4. You might be able to estimate how long something will take and how much it will cost if you have done it several times before. Otherwise, you're kidding yourself.
5. Don't build too many things you could buy.
6. It is better to start with a boat that is as close as possible to what you really want. Everything you have to fix will take time, and everything you want to change will take time too. They will also take more money, but the time is the big deal.
7. When it is over, if you think it was worth it, it was. Nobody else gets to make that decision. Remember to factor in your old friends and your new ones. You changed the boat and the boat changed you.

Mystical boat-buying

Sogno del Mare was a good family boat, shown here with Josh and Leah, but the Edelswards were destined for *Triumph of Hope*, their steel cutter, shown below.

Supernatural forces chose their boat for them

by Lisa Edelsward

I USED TO THINK THAT BUYING A BOAT WAS a careful, thoughtful, weighing of pros and cons, wishes and budgets, dreams and realities. I now understand that boat buying is an inexplicable process involving unseen forces beyond the imagination.

For our first boat, we braved the cold, Canadian early spring morning to see a broker. We looked at a boat hiding under a snowy tarp, then left the yard and stopped for some noodle soup at a little Vietnamese restaurant nearby. At this point, we had never sailed in our lives. We had never even set foot on a sailboat before climbing up that icy boarding ladder in the boatyard. After lunch we were served fortune cookies. "Get your mind set," the fortune read. "Your confidence will lead you on." The fortune cookie told us to buy the boat. This boat, a Jeanneau Fantasia 27, was meant for us.

We called her *Sogno del Mare*, which means dream of the sea. We sailed her up and down the Ottawa River, and what a wonderful little boat she was. But, alas, she was too well named, and our dream indeed turned to the sea.

So began our search for a larger boat. We learned well the meaning of "every boat is a compromise." We considered all the compromises. We discussed and we debated. With logic and rationality, we decided on the perfect compromise boat. We decided to buy a 39-foot, 20- to 25-year-old, Amel ketch, a true bluewater cruiser.

We found an older Amel Sharki in Annapolis, contacted the broker, and asked for details. "Make an offer," said the broker. "It's a good old boat."

We sent a list of questions. "It's a good old boat — what more do you need to know? Make an offer!" we were told.

We tried. We even *made* an offer. But in the end, we couldn't work with a broker who wouldn't work with us.

Tried Europe

Next we tried to buy a boat in Europe. We were interested in an Amel in France but learned there was a "sale pending." We made an offer on an Amel in the Canary Islands, but the sellers were not yet ready to negotiate on price. We then tried for an Amel in Spain. Once again, the broker would not give us the information we needed. Surely there were unseen forces conspiring against us.

But there was one boat that called to me. It was a lovely boat, albeit very different from the Amels we had tried to buy. It was an Alan Pape-designed, custom-built, steel cutter. This boat was in the Caribbean. We had decided to cruise the Mediterranean. It made no sense. "Stop looking," I rebuked myself, but I couldn't resist such a lovely boat.

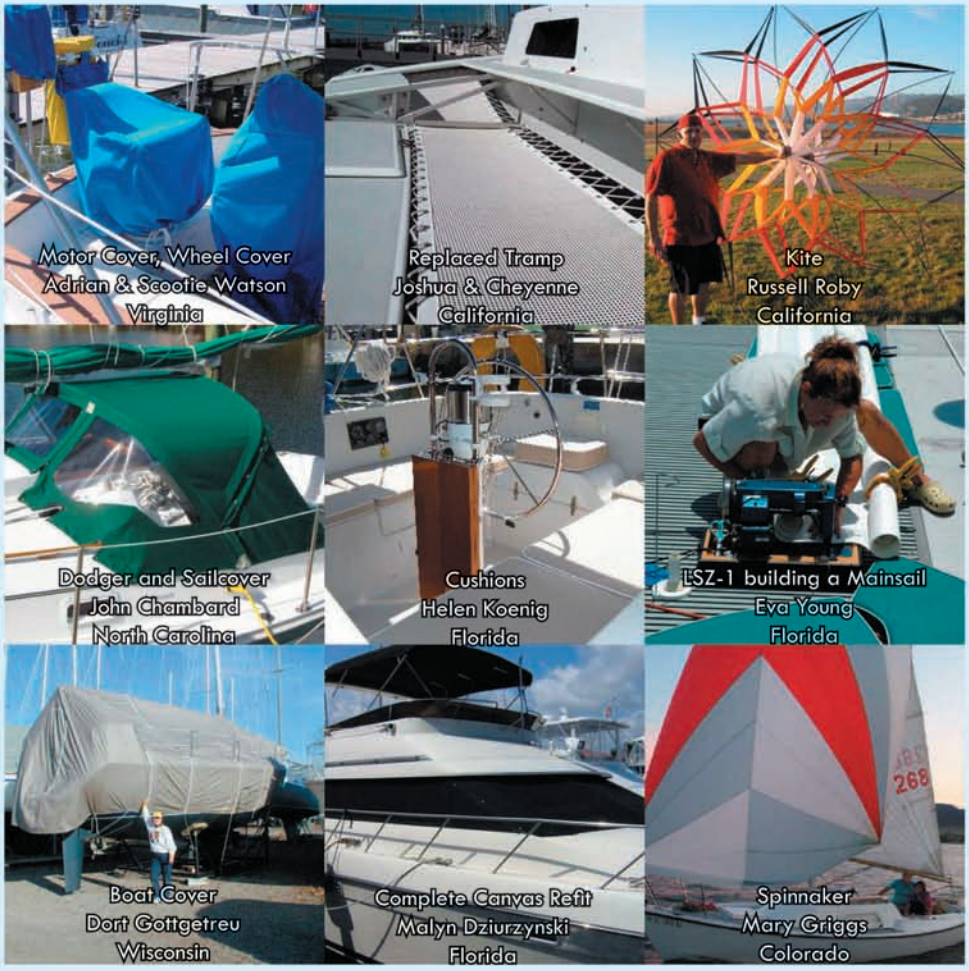
However, we had no success in Europe, and there were two other boats in the islands, including another Amel, we wanted to see. What would it hurt to see the steel boat too? No sooner had I paid for the tickets than one of the boats sold. The very morning that we landed in the islands, the Amel sold. Only the pretty Pape cutter was left.

We came, we saw, we were conquered.

Surely some strange force of the universe had prevented us from buying any of those other boats. Surely this same mystical force had led us inexorably to the boat meant for us.

This boat is perfect for us and I am still amazed that it is ours. There are those who would say, "Humbug, that all is easily explained by the normal interplay of market forces and random luck." But I say when you find the perfect boat, it feels like magic.

You Can Do It-
We Did!



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