Good Old Boat

The sailing magazine for the rest of us!

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Our contributors

Bill Sandifer (*The Nonsuch 26*, Page 4.; *Diesel hiccups*, Page 66) is a *Good Old Boat* contributing editor and a marine surveyor. He discovered boats in the early '50s when he assisted at Pete Layton's Boat Shop. Since then he's worked for Charlie Morgan (Heritage), Don Arnow (Cigarette), and owned a commercial fiberglass boatbuilding company (Tugboats).

Ken Textor (*Behind the Sabre*, Page 9) has lived and worked aboard boats for 22 years. In addition to work he did for the former *Small Boat Journal*, he contributes to *Sail*, *Cruising World*, *Yachting*, *DownEast*, *Maine Boats & Harbors*, and *Boating World*. He also offers boat deliveries and pre-purchase surveys for other mariners.

Bill Sikich (*Autopilot update*, Page 15) is a data network engineer specializing in ultrasound imaging applications who began sailing as a youngster in San Diego, Calif. He chartered extensively until purchasing a 1975 Cal 2-46. He and his wife, Jo, now live aboard *Bountiful* on Bainbridge Island, Wash.

Mike Keers (*Chain reaction*, Page 18) is the co-founder — along with Eric White — of the Columbia Yacht Owners' Association. He published the association's journal, *C-Nuz*, from 1997 through 2001. In the spring and summer of 2000, he sailed his Columbia Defender 29 single-handed from San Carlos, Mexico, to Hilo, Hawaii, logging 3,265 nautical miles and 32 days under sail.

Robert Perry (*Bill Garden: A memoir*, Page 19) is the principal of Robert H. Perry Yacht Designers in Seattle, Wash. His best-known production designs include the Valiant 40, Tayana 37, and Passport 40. He has written numerous articles for various sailing magazines.

John McCann (*Seeking perfection*, Page 24) is an author and retired professor of French. When not working on his latest novel, *Katúah*, he is cruising in *Sojourn*, his 1990 Catalina 25, in the waters of Barnegat, New Jersey.

Ted Brewer (*The Comfort Ratio*, Page 27; *Bristol 35.5*, Page 65) is one of North America's best-known yacht designers, having worked on the America's Cup boats *American Eagle* and *Weatherly*, 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.

Don Launer (*The miracle of the tides*, Page 30; *Marine-Band 101*, Page 46; *Quick & easy: Emergency starting button*, Page 78) is a *Good Old Boat* contributing editor and has held a USCG captain's license for more than 20 years. He built his two-masted schooner, *Delphinus*, from a bare hull and sails it on the East Coast from his home on Barnegat Bay in New Jersey.

Steve Bunnell (*An* Improbable *conversion*, Page 33) began lake sailing in 1954 on a daysailer purchased with paper route money. After a long mountaineering interlude, he moved to Seattle for water sports. He spent the past 10 years cruising and racing a 26-foot wooden Thunderbird and is currently a part owner of a racing Moore 24. He has written a number of articles about "Northwest boaty things."

Kim Ode (*Looking for a better way*, Page 36) married into sailing, having grown up in landlocked South Dakota, but she's learning fast. One motivation: her husband gets seasick and — so far — she doesn't, which means she must be prepared to take the helm with little warning. She enjoys gardening and baking bread in a wood-fired brick oven. On the job, she's a columnist with the *Star Tribune* in Minneapolis.

Dee Lawton Smith (*Both sides of chartering*, Page 42) lives in Traverse City, Michigan, and built her first Sailfish with her dad at age 9. From there she graduated to sailing catamarans on area lakes and then to owning the family's *Lizzie G*, a Catalina 22. Having just completed an ASA sailing course at Bay Breeze Yacht Charters, she's ready for bigger fun. Her goal: Caribbean bareboat sailing with the entire family next year.

Mary Jane Hayes (*Center spread: Salty Dogs*, Page 48) and her husband, Warren, have been boating for more than 25 years. They sailed *Serena*, a Sabre 28, for seven years and now cruise the East Coast in a Grand Banks 36, *Sea Story II*. A freelance writer and photographer, Mary Jane has been widely published in boating magazines. Her latest book is *Eye on the Sea*.

Ed Lawrence (*Gunkholer's delight*, Page 50) is a contributing editor with *Good Old Boat*. He writes about boats and off-beat subjects for several national magazines from his home base in Montana. His wife, Judy, just bought a San Juan 23. Ed is allowed to crew on it.

Gregg Nestor (*Choosing a trailerable*, Page 56; *Quick and easy: Hard-body winch covers*, Page 79) is a contributing editor with *Good Old Boat*. More than 20 years and four boats ago, he, discovered sailing and has been an avid "trailersailor" ever since. When not sailing or writing about sailing, Gregg runs the family farm. He and his his wife, Joyce, sail an O'Day 222, *Splash*.

Marilyn Palley (*A new wheel to wrap*, Page 60) and her husband, Reese, live in Key West and sail *Unlikely*, their Ted Brewer cutter. Reese has published three books: *There Be No Dragons*, *Unlikely Passages*, and *Unlikely People*. His next book, *Call of the Ancient Mariner: Reese Palley's Guide to a Long Sailing Life*, will be released later this year.

Freelance writer **Mary Maynard Drake** (*Born to sail*, Page 62; *The dance*, Page 97) now lives ashore with her husband Bob Drake, summering on Hodgdon Island, Maine, and wintering on Big Pine Key in the Florida Keys. Both, unfortunately, are accessible by car.

Greg Delezynski (*Simple solutions: Accessible bilge pump*, Page 70) and his wife, Jill, are liveaboards on *Guenevere*, the Nor'Sea 27 featured in *Good Old Boat* in November 2002. They plan to cut the docklines soon and are counting the days and hours until they begin a South Pacific cruise.

Connie McBride (*Simple solutions: The shower solution*, Page 71) left Kent Island, Maryland, in June 2002 with her husband and three sons, ages 10, 13, and 15. Aboard their 34-foot Creekmore, *Eurisko*, they cruised the U.S. East Coast and are sailing onward to yet-to-be-determined destinations.

Niki Perryman (*Quick and easy: Double the muscle*, Page 80) and Jamie Morrison left Australia in 1992 to cruise in their 35-foot Lion-class sloop, *Siandra*. They explored Europe, including an icy winter in Arctic Norway. This was followed by a cruise of the East Coast of the U.S. and the Pacific via the Panama Canal.

Alan Lucas (*Quick and easy: Handyman's hand bag*, Page 81) has been a cruising writer for more than 40 years, during which time all his cruising boats were personally built from scratch, restored, or finished from a bare hull (eight in all). The latest is a built-from-scratch 50-foot ketch.

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About the cover...

Boat dogs. Some are water dogs. They're born to it. Some are just good sports who will go anywhere the family goes. Leave it to photographer Mary Jane Hayes to capture the best in boat dogs. For more, see Pages 48 and 49.

Behind the glamour and fun

Sailing's also sweating, swearing, swatting, and plain hard work

New dock neighbors have moved in next door. We share a finger pier, which means we'll be seeing a lot of each other as we're coming and going with dock carts, gear, and project supplies.

Newly retired, they've just bought their first cruising boat (a good old one) and are eager to learn everything they can about sailing and boat ownership. They arrived during the five-day weekend we'd selected as a work/sail weekend. The work came first. Our new neighbors already knew they were located next to the publishers of a magazine about good old boats — a blessing and a curse for both of us, no doubt, as there's some baggage that goes with that.

The people they met when they arrived were hard at work. Jerry was sweating, swearing, and swatting at flies in the starboard cockpit locker (he calls it his aft stateroom when he disappears in there entirely). He was replumbing our diesel heater. The sun was oppressive, the flies were annoying, and the space was cramped. At that moment, he wasn't exactly "publisher material."

I was sewing leather chafe protection on the port handrail where our kayak rests and rubs. Leather resists needlework. I used a pair of pliers to pull the needle through for each stitch even though I had pre-punched the holes with a sewing machine. The piece of material is 100 inches long. I don't know how many stitches there were in an inch. I do know it was a time-consuming chore.

Not the best light

All in all, the tableau was not what is portrayed by most sailing magazines: glamorous and fun. With *Mystic* tied to the dock, we were not presenting sailing in the best light for someone new to our favorite pastime. But in spite of ourselves (even in spite of Jerry's sweating, and swatting, and swearing) we were having a good time doing a few things that needed to be done to maintain our boat. Maybe the reason that some older boats are in deplorable shape is that their owners had unrealistic expectations, perhaps fed by the sailing press, that sailing is always glamorous and fun. Maybe no one told them that boat ownership also demands some simple hard work. Often. Before things break. Not just at haulout time.

But our new dock neighbors seem to understand all this. They spent the weekend polishing their new old Bayfield 29 inside and out. In a year or two, this boat will be a gem, and our new neighbors will be cherished friends and experienced sailors. They won't find a lot of glamour in the work, but they will have fun.

And just to show them that these boats are not all work and no play, we finished up the work part of our long weekend and went sailing. That is, after all, what these boats are meant to do. *All* the sailing publications agree on that.

Karen Larson

Courtesy of Mark Ellis Design

As she plows through the water, at left, or rests at a dock, below, the Nonsuch shows the plumb bow, vertical transom, and roomy sidedecks characteristic of the Nonsuch line.
Hackett Cummins' *Pelican*, on opposite page, sails the Mississippi Gulf Coast. Her stubby bowsprit is capable of holding two anchors at the ready.

The Nonsuch 26

A catboat with standing headroom and fixed keel? Here's onesuch

by Bill Sandifer

I'VE ALWAYS LOVED CATBOATS BUT NEVER owned one. There always seemed to be limiting factors that made me look for a sloop or cutter. It boils down to lack of headroom. I love the look but want to be able to stand up to pull my pants on! Hackett Cummins had cruised a Marshall 22 for a number of years and had come to the realization that it would be nice to be able to stand up down below. He bought a Nonsuch 26 and named her *Pelican*. I guess Gordon Fisher felt the same way.

The Nonsuch was the inspiration of Gordon Fisher, a respected Canadian sailor who was, at that time, CEO of Southam, Inc., Commodore of the Royal Canadian Yacht Club, and co-skipper of the custom C&C *Red Jacket* when it won the Southern Ocean Racing Circuit.

When this hotshot sailor decided to go cruising, he had some distinct requirements that were not represented by production sailboats on the market. He admired the Ljüngstrom rig with a freestanding mast and no boom, believing it to be a perfect singlehanded rig. He took the idea of a one-sail catboat with a keel and full headroom, to yacht designer Mark Ellis for further development.

Mark drew an unstayed mast but convinced Gordon to include a sailboard-style wishbone boom for better sail control. It was a viable idea, but it did not have a builder.

Enter George Hinterhoeller of St. Catherine's, Ontario. George was cool to the idea of the Nonsuch. He was not in love with New England-style catboats.

Eventually, Gordon and Mark convinced him that a fin-keeled balanced hull, with a single sail and a spade rudder, would not have to have the undesirable characteristics of a catboat, primarily heavy weather helm.

She could have full standing headroom and a balanced helm in a whis-

Courtesy of Mark Ellis Design

per and a blow. The Nonsuch was born.

> *"Pelican is a really big boat with a plumb bow and vertical transom … simply speaking, a lot of boat."*

More than 1,000

Production started in 1978 and continued until 1995, with two breaks due to changes in company ownership. In all, more than 1,000 boats were built. Nonsuch sailboats were built in 22, 26, 30, 33, and 36 feet. Two additional models were introduced — the 324 and the 354 — which were versions of the 30 and the 33, respectively, but with different interiors.

The 26 and 30 were both built as "Classics" with the galley and head amidships, port and starboard settees, a single quarterberth to port, and a double quarterberth to starboard (see illustration on Page 8).

The "Ultra 26" layout had a starboard-side galley, head aft, no quarter berths, an L-shaped dinette opposite the galley to port, and a double bunk forward of the dinette to port. A hanging locker and small seat was opposite the double bunk to starboard. Hackett Cummins' *Pelican*, hull #195, has the Ultra interior.

The 26-foot Ultra is well laid out for a couple, while the 26-foot Classic sleeps up to five on two settees forward and the two-and-one-half quarter berths aft. It is something of a stretch to call the starboard quarter berth a double, but it would be a luxurious single for most anyone.

The name Nonsuch is interesting. Whether she was named because there was nothing like her on the market or for a Canadian historical personality — Baroness Nonsuch of Nonsuch Park in Surrey England — is open for discussion. I prefer to think it was

named because there was "none such" designed when it was introduced. *(Actually, Mark Ellis tells us that the name came from the first trading ship used by the Hudson's Bay Company. Perhaps the ship was named after Baroness Nonsuch. A replica of this 60+ foot ship is on display in Winnipeg, Manitoba.* ***–Ed.)***

The fit and finish of Pelican are to George Hinterhoeller's high standards. He also built the Niagara line of sailboats and had a sterling reputation.

> *"The boat sails like a big dinghy with just a genoa flying. In fact, the big sail trims like a genoa, rather than a main."*

Large and beamy

As befits a catboat, this is a large 26-footer with a beam of 10 feet 6 inches and a waterline length of 24 feet 4 inches. There is 6 feet 3 inches of headroom in the main cabin. In many ways this 26-footer is the equal of my 31-foot Eldridge-McInnis sloop which is 31 feet overall and 24 feet 6 inches on the waterline with a beam of 9 feet 6 inches. It has more than 6 feet of headroom down below, too.

Pelican is a really big boat with a plumb bow and vertical transom . . . simply speaking, a lot of boat. The cockpit, catboat style, extends almost to the hull sides and is extremely roomy. There are usable sidedecks outboard of the cockpit but no lazarette. The boat is therefore missing some stowage that my boat's lazarette offers. As I only store mops, buckets, and fenders there, I wouldn't miss mine as long as there were good cockpit lockers.

Fortunately, the Nonsuch has good, big, easily accessed cockpit lockers. One of the items in my lazarette is a spare anchor, but the Nonsuch 26 takes care of that with a short, but robust, bowsprit with plenty of room for two anchors.

Once you are forward of the cockpit, going forward is easy. The grabrails run the full length of the coachhouse, and you can hold on to the mast at the bow. *Pelican* has lifelines, but I would rather be bent over a little lower and inboard, holding on to the handrails. The lifelines are fine for grandchildren to hold on to in quiet water, which is what Hackett's grandchildren like to do.

Rain or spray is kept in control by recessed drains in the deck at the low spot. These empty through pipes below the waterline. There is no stain running down the topsides. The hull-to-deck joint is covered by a heavy-duty aluminum extrusion that incorporates built-in chocks. There is a substantial stern rail incorporating the stern boarding ladder.

Pelican, **at right and far right below, has the Ultra 26 layout. The interior of a Classic 26 Nonsuch is shown at left below.**

Courtesy of Mark Ellis Design

"The unstayed mast is very flexible and bends to leeward in the puffs, spilling wind from the sail."

Halyards led aft

Pelican has winches mounted on the coachhouse for the main halyard and two reefing lines and the mainsheet winch in the cockpit aft. All halyards are led aft to the cockpit under the dodger.

The only other things on deck are the varnished eyebrows over the five opening ports and two hatches in the coachhouse roof. With the companionway hatch sliding open under the sea hood, there is plenty of ventilation below. *Pelican* is not fitted with an anchor windlass, but there is room for one forward of the mast. Fitting it with the mast in place would be a good exercise for a contortionist.

Pelican is equipped with a Westerbeke 18 A diesel. Some Nonsuch 26s were fitted with a Volvo Sail Drive, some with a 13-horsepower Westerbeke, and some with engines up to a 25 horsepower. I prefer the 18- to 21-horsepower diesel for its smoothness (4 cylinders), but the Nonsuch will be responsive with any of the engines mentioned — just be sure the prop is free of barnacles. More on this later. With a fuel tank capacity of 24 gallons, a water tank capacity of 64 gallons, and a 24-gallon holding tank, the boat has good cruising range.

Average fuel consumption should be between .7 and 1.2 gallons per hour at hull speed for a range under power of about 130 miles at 2,500 rpm. Maximum speed under power should be about 6.6 knots. Hackett reports that *Pelican* does 6.5 knots with a clean bottom. This is excellent for a 26-foot boat. The displacement is 8,500 pounds with a ballast/displacement ratio of 32 percent on a long waterline. Draft is 4 feet 6 inches and, as already noted, beam is 10 feet 6 inches. Sail area is 420 square feet with some real power for light conditions. With a cat's cradle of lines between the two spars of the wishbone boom, reefing is easy. Drop the sail into the cradle and tie off the reefing lines. The sail hangs below the boom when stored, making it easy to cover the sail for an evening.

Sails like a dinghy

Hackett says sailing the Nonsuch is different from what you might expect. The boat

There are no quarter berths in the Ultra 26 layout, at left; a cooler and nav station is located where one quarter-berth would be positioned. *Pelican* has a double bunk forward, bottom left, with a hanging locker and small seat opposite. The head, bottom right, is aft.

Pelican's unstayed mast, above, is very flexible, bending to leeward in the puffs spilling wind from the sail. An overview of the Classic Nonsuch layout, below.

sails like a big dinghy with just a genoa flying. In fact, the big sail trims like a genoa, rather than a main. She is very responsive to the helm as long as you don't overtrim the sail. According to Hackett, there is no weather helm up to about 20 knots of wind, at which point it is time to reef anyway. The unstayed mast is very flexible and bends to leeward in the puffs, spilling wind from the sail. When Hackett first owned the boat, he deliberately tried to put the rail under and found he could not make the boat do it. He believes the keel and mast balance each other so well that the result is one very stiff, but not uncomfortable, boat.

While the Nonsuch and Freedom rigs have the wishbone spar in common, the details vary significantly. The Freedom wishbone rig uses a two-ply sail that surrounds the mast like the sock on a boardboat sail, and the wishbone moves up and down with the sail. The Nonsuch rig uses a single-ply sail attached to a track with slugs. The forward end of the boom hangs from hanger lines, and the spar is pulled toward the mast with a "choker," a line which is led to the cockpit. Tightening the choker pulls the forward end of the boom toward the mast, which has the effect of flattening the sail by moving the after end of the boom away from the mast. The choker is used like an outhaul to control the amount of draft in the sail. As with all catboats, reefing early rather than late is good seamanship. Reefing is simply a matter of slacking the main halyard, taking up on the pre-rigged reefing line, and re-tightening the main halyard. All this is easily accomplished from the cockpit. The sail area that has been reduced falls into the lazy-jacks below the wishbone boom.

Nonsuch

Designer: Mark Ellis
LOA: 26 feet 0 inches
LWL: 24 feet 4 inches
Beam: 10 feet 6 inches
Draft: 4 feet 6 inches
Displacement: 8,500 pounds
Sail area: 420 square feet
Ballast: 2,750 pounds

Propeller changed

When she was first purchased, *Pelican* had a fixed three-bladed propeller. This was changed to an automatically feathering three-bladed prop with marked improvement in sailing quality and no decrease in powered performance. Last fall, when we attempted to sail, the prop was encased in barnacles and would not function. There were so many barnacles, the prop could not be rotated to provide power. A diver was called, and we put off sea trials for another day. Hurricane season arrived before we had another opportunity to sail *Pelican*.

On Memorial Day weekend of this year we got out at last for a fine sail. The boat handles as reported with none of the weather helm usually associated with catboats. Raising the sail is easy. We had a most pleasurable day and a good sail.

Courtesy of Mark Ellis Design

Behind the Sabre

How Roger Hewson managed the cut and thrust of boatbuilding

Roger Hewson, founder of Sabre yachts, is now retired and actively involved in the development of a book.

by Ken Textor

The history of Sabre Yachts is inextricably entwined with the life of Roger Hewson. Almost no one connected with the 33-year-old company based in Casco, Maine, contends it is possible to understand one without the other. And although the company founder no longer participates in the day-to-day operations of one of the few production-boatbuilding success stories left in New England, his ideas, opinions, and standards are as alive and well today as when he first conceived the company back in the 1960s.

"I have always enjoyed sailing and the creativity involved in designing boats," Roger says, musing on his burning desire to get into the boatbuilding world some 40 years ago. That desire kept cropping up and intensifying in the late 1950s and early 1960s when he ran a very successful construction company in Montreal, Quebec. With contracts to build huge manufacturing, warehousing, and office buildings, as well as some of the exhibit buildings at the 1968 Montreal Expo, Roger used his engineering degree from McGill University in Montreal to ride the construction boom that was then sweeping Canada and the United States.

To most outside observers there seemed no reason for a successful businessman to leave a steady, ongoing concern in his native Canada to begin building sailboats in the United States. But Roger knew otherwise.

"I think it was in my blood, probably from an early age," the 70-year-old retired executive says today. But it was more than that because Roger is not a man of mere whimsy, dreaming up impossible nautically related tasks just for the sake of personal challenge. Indeed, he is nothing if not a dedicated researcher, planner, calculator, and seriously self-disciplined designer and executor of personal philosophies and ideas — all of which have found their way into a long line of well-built, well-designed, and still highly prized sailboats, a line that now includes powerboats as well.

Roger in the shop in 1987 supervising the development of the Sabre 42.

Quality construction

Indeed, the legacy of Sabre Yachts was built upon Roger's early dedication to quality construction. That commitment is present in the 14 sailboat designs Sabre has produced, plus the three powerboat designs he drew in his final years at the company. Altogether, the company has turned out nearly 2,200 yachts, some 1,700 of which were built while Roger was at the helm of the company.

So where did his design genius and commitment to quality construction begin? Evidently, much of it began at age eight when Roger helped his father build a boat. A Canadian building contractor himself, Roger's father decided in 1941 that the family needed a small motorboat for use at a resort lake an hour or so north of Montreal. Trouble was, with World War II raging boatbuilding materials and labor were in short supply. So his father decided to build the boat himself with young Roger as his assistant. "I remember fetching screws and tools for my father while he put things together," Roger says of the project. "It was all very orderly. I think that appealed to me."

It wasn't until after the war ended and boatbuilding materials became more readily available that Roger got his first real taste of designing and building boats. Zippy little hydroplanes were very popular at the time, and Roger thought he could put together a particularly fast one. "I don't really know what made me think I could do it," he recalls. "I guess it just never occurred to me that I couldn't." A slightly faded black-and-white photograph shows Roger's first hydroplane gliding through still waters. A very serious lad of 14 has his hand firmly on

the tiller of the 5-hp Johnson outboard, making what looks to be good progress across the flat waters of a lake. He appears to be a lad who clearly knows where he is going.

Remained dedicated

Once bitten by the boatbuilding bug, Roger remained dedicated. He turned away from powerboats and took up sailboats with a vengeance. He raced 14-foot International Dinghies, noting what makes a boat go fast. He also raced Dragons, Lightnings, Flying Dutchmen, and Snipes. Much of this racing was done while Roger built up Hewson Construction Ltd., of Montreal. By all accounts, he was a man of boundless energy. "He was always doing something," says his wife Charlotte, who met him in college in the early 1950s. "He loved to learn and was always energetic about it. He could easily do two or three things at once." So it was natural enough that Roger turned his yen for building things and for sailing fast to his first notable racing sailboat, the Sabre Scow.

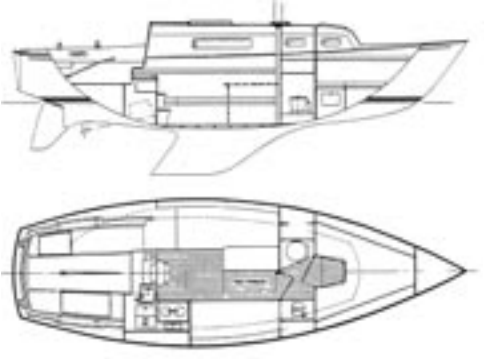
"…his ideas, opinions, and standards are as alive and well today as when he first conceived the company back in the 1960s."

"It was really a very good boat in its class," Roger recalls. It was also the first design in which he put his self-taught naval architecture skills to the test. In addition to an eye for good lines in a boat, Roger drew heavily on the knowledge packed into *Elements of Yacht Design*, a book by Norman L. Skene, first published in 1927. "I owe a lot to that book," Roger says.

Dagger-like bilge boards

In the 1960s he developed the fiberglass 26-foot Sabre Scow. It featured very flat lines, almost like a surfboard, along with deep, stabilizing, dagger-like bilge boards. The name "sabre"

Roger sails the first Sabre 28 in 1971.



Sabre 28

Designer: Roger Hewson
LOA: 28 feet 0 inches
LWL: 22 feet 6 inches
Beam: 9 feet 0 inches
Draft: 4 feet 3 inches
Displacement: 6,500 pounds
Sail area: 370 square feet
Ballast: 2,800 pounds
Headroom: 6 feet 0 inches

The famed Sabre 28

by Ken Textor

More than 30 years after its introduction, Sabre Yachts' kick-off design, the Sabre 28, is still drawing accolades as if it were just being unveiled at the fall boat shows. In fact, on January 10, 2003, the Sabre 28 was inducted into the American Sailboat Hall of Fame, a Rhode Island-based recognition group that has among its inductees the Hinckley Bermuda 40, the J/24, the Pacific Seacraft 37, and the Sunfish, to name just a few.

"Sabre's quality workmanship was evident immediately to buyers," says John Burnham, editor of *Sailing World* magazine and one of a panel of judges who considered boats for this year's Hall of Fame inductees. "But over time, that quality has proven more than skin deep."

Indeed, buyers in the market for a good old boat continue to give this 28-foot, medium-displacement boat the most important vote of confidence of all: hard-earned cash. In the early 1970s, a new Sabre 28, modestly equipped, would sell for about $12,000. These days, depending on condition and location, the same boat sells for between $15,000 and $30,000.

"The construction details of the Sabre 28 are among the best of any 28-foot production boat on the market," says marine surveyor Jack Hornor, of Annapolis, Maryland. "Secondary bonding and attachment of bulkheads and structural members is almost always flawless," he says in his Hall of Fame notes on the model's induction. "The Sabre 28 is rather high priced for its size and accommodations; however, the boat has proven to be a good investment due to its ability to attract buyers willing to pay a little more."

With 588 Sabre 28s produced between 1970 and 1986, they should be available for many years to come.

was applied to it because of its ability to cut quickly through the water like a saber sword. The "scow" description was appended because of its flatness. Popular among racers, 13 Sabre Scows were produced between 1965 and 1967. This model was chosen as the one-design class for Montreal's 1967 Men's North American Sailing Championship regatta for the Mallory Cup.

But even with the relative success of his racing boat, Roger's passion was probably misdirected. "I realized rather soon that you can't make a living producing racing sailboats," he recalls, noting the limited appeal that larger racing sailboats had at the time. "It was fun but not very profitable." Still, Roger was hooked on boatbuilding. "The enjoyment of building the series of Sabre Scows was the driving force in my decision to sell the construction business and go into boatbuilding full time," he says. Thus, in 1968 Roger began developing his idea for a fast, but also roomy, production cruising sailboat.

In the late 1960s, the world situation was conspiring to push Roger into the sailboat business in the United States. The tumultuous 1960s unleashed a worldwide movement for minority rights in multi-ethnic countries. Led by the civil rights movement in the United States, cultural minorities around the globe rose up to demand a bigger voice. French-speaking Canadians were among the minorities demanding, new privileges and considerations. Roger saw this as potentially divisive to the nation as a whole and a serious drag on business in particular. "It seemed the right time to re-establish a business elsewhere … away from the trouble," he says.

The Sabre 28

Roger had by the late 1960s already developed the lines for the Sabre 28, which his thorough research showed was the ideal size for a cruising boat at the time. The generation that fought World War II was coming into its prime earning years. A 28-foot fiberglass sailboat could be big enough and affordable for a buyer with a modest income and the leisure time to spend more than an occasional weekend aboard. But Roger was not alone in this analysis.

"I realized rather soon that you can't make a living producing racing sailboats," he recalls … "It was fun but not very profitable."

Indeed, he entered a fairly crowded field. By his own reckoning, there were no fewer than eight established boatbuilders producing hulls that would compete with the Sabre 28. To be successful, Roger knew he had to take steps to set himself apart from the crowd. One of those steps led to Maine.

"I was considering three locations, actually," Roger says of his search for a place in which to build. Maine won out.

"The long nautical tradition here and the pride in workmanship were among the factors that finally settled me on being in Maine," he says in the office at his home, located only a few miles from the Sabre production plant. The land on which the first plant was built was near property that had been in his wife's family for generations.

Detailed plans

Roger left nothing to chance. He developed spreadsheets and unbelievably detailed business plans to back up his theory about the Sabre 28. One by one, he also developed comparative analyses of all of his potential competitors, considering such arcane but nonetheless important numerical variables as sales-to-inventory, sales-per-employee, sales-per-square-foot of production space, net profit as a percent of total corporate worth, and the like. And finally, as recommended by his favorite yacht design book, *Skene's*, he built a scale model of the Sabre 28 and took it to the Stevens Institute of Technology in Hoboken, New Jersey. There, the model was tank tested for two days, running through all sorts of controlled sea and wind conditions in the institute's famous water tank. "You can see how well it performed," Roger says today, brandishing the aging graph on which each of the dozens of runs through the tank were pinpointed and quantified. Roger Hewson is nothing if not thorough.

Thus prepared in 1970, Roger and his wife, Charlotte (better known as Charlie), moved with their three children to what was then considered the backwoods of Maine. He personally participated in the construction of the 4,000-square-foot production plant, doing everything from helping to pour the concrete to swinging a hammer whenever it was needed.

At age 37, he says, he was having "a wonderful time," often putting in 14-hour days to get the first Sabre 28 finished for the coming boat shows and to a small network of dealers on the East Coast.

Commitment to excellence

"We wanted to stand out with our commitment to excellent workmanship and materials," Roger recalls, noting that teak toerails, solid teak joinery belowdecks, and hand-laid fiberglass hull construction were just some of the extra efforts that early buyers appreciated. Quietly, Roger boasted of building his boats by specifically *not* hiring experienced boatbuilders. "I wanted to train our workers in how to build boats the Sabre way," he was fond of saying. "A boatbuilder will tell you how to build a boat *his* way. That can be pretty counterproductive."

The Sabre 28 was well received in 1971. Start-

Tank testing the scale model of the Sabre 28 at the Stevens Institute of Technology in 1969.

ing with just six employees that year, Roger's work force was up to 75 in just six years, producing nearly 100 boats annually. More importantly, though, Roger started right from the beginning creating a "Sabre culture" that continues to be an entirely self-sufficient and self-sustaining marriage of the producers, the product, and the end users.

His approach was deceptively simple: manufacture just about everything in-house, mainly to keep a firm grip on quality control but also to give the workers a sense of pride in their product. Indeed, Sabre workers built not only boats but also the various expansions of the production facility. Foremen and even supervisors had to have hands-on knowledge of the boats they were building. Nearly everyone, including Roger, got his hands dirty, brushed sawdust from his clothes, and knew intimately the smell of post-cured resin.

Roger was also a big believer in advertising of all kinds. In addition to display advertisements in national sailing magazines, he created a newsletter, encouraged owners' associations, gave awards to owners and dealers, encouraged racing, and constantly schmoozed at boat shows and other media-related events. But his promotions of the Sabre line weren't empty hype and huckster patter.

"He really believed in his boats," one long-time Sabre owner says. "If you bought one and then met him at a boat show, he really wanted to hear about what you liked, what needed improvement, all that. He'd stand there and talk to you as long as you wanted. It was amazing." Thus it's no surprise that the Sabre 28 went through two revisions during its 15-year production run. There are Mark I, Mark II, and the Mark III versions, all incorporating new ideas that Roger felt would improve the boat.

"Indeed, the legacy of Sabre Yachts was built upon Roger's early dedication to quality construction."

Jack of all trades

No aspect of the creation of the Sabre culture was left to chance or to someone else's interpretation. Roger himself did nearly all of the photography, layout, and graphic design of advertisements, newsletters, and company brochures for the 28 and subsequent Sabre sailboats. He even wrote the owners' manuals for each of the Sabres created during his stewardship of the company. "I love the challenge of learning something new, something like photography," he says.

By the mid-1970s, it became clear Sabre would need more than just the traditional-looking 28 to appeal to an increasing market for sailboats. Arab oil boycotts were rocking the American economy, sometimes doubling and tripling the cost of gasoline in a matter of months. The boating public responded with a renewed interest in sailing, eschewing gas-guzzling powerboats for cheaper-to-operate wind-driven vessels. That inspired Roger to design the Sabre 34, which is perhaps as renowned as the 28 but with some entirely different approaches to its design. The use of the reverse transom, common today but a bit unusual for its time, is a case in point.

Roger explains: "The driving force behind the designs of all Sabres, after the Sabre Scow experience, was determining market preferences regarding each detail in our design of the next Sabre model. Traditional transoms were the popular and accepted style in the 28-foot range, but we determined that reverse transoms were the popular choice in the 34-foot range." His non-stop interaction with customers, dealers, and the boating public was Roger's design guide.

Updated designs

"Also," he continues, "we had decided on a contemporary overall design concept that could be gradually updated each year to the latest market preferences, rather than a more traditional design concept that would by necessity be locked into classic design features. It was really a business and marketing decision rather than a choice of which (type of transom) was right."

Some manufacturers did get locked into a specific, unalterable "look." Cape Dory Yachts of East Taunton, Massachusetts, is a case in point. Each Cape Dory design looked much like a larger version of an earlier one. Fans of the Cape Dory look were adamant that the company not change that look, making it tough to appeal to a broader market. "Possibly our attention to the marketing need for constant change is why Sabre is thriving today, and Cape Dory is no longer in production," Roger speculates.

The Sabre 34 was introduced in 1976 and was another smash hit. The 28 had a solid glass hull, but the 34's was cored with balsa, as all Sabres since then have been. Over the next 15 years, more than 400 were produced in Mark I and Mark II versions. Roger eventually included two options for the interior layout. There was the classic

The Sabre 34, at left, was introduced in 1976. The Sabre 38, at right, followed in 1981. These two, along with the Sabre 42, were rated highest in their size range in *Sailing World* magazine's Boat of the Year awards.

layout with a V-berth forward, head to port and hanging locker to starboard just aft of the forward berths, then port and starboard berths amidships, with a convertible settee, followed by a galley portside near the companionway, with a quarterberth opposite.

The other version had an aft-cabin arrangement, a common plan among many cruising and charter boats these days but fairly innovative for its time, at least in a boat of only 34 feet. That arrangement placed the head aft and the galley closer to amidships, with private cabins aft and forward. Thus, two couples could cruise in relative privacy. It was hugely popular.

"Even devotees of the 28 were asking for a little more room in a pocket cruiser, and Roger wanted to be sure they got it. Besides, it was becoming clear the market for the 28 would eventually run out, which it finally did in 1986.

Advertising paid off

When the 34 was introduced, Roger's relentless advertising also paid dividends. Most national sailing magazines began taking the little company in Maine seriously and liked what they saw. "The 34-footer strikes a balance between tradition and innovation, between the 'tried and true' and the 'oh wow,' " wrote *Sail* magazine. "Like her forerunner, she has the go-anywhere quality born of common-sense design and painstaking construction."

Other boat reviews struck a similar note. *Sailing World* magazine named the latest Sabre 34 model Boat of the Year in 1987. Praise like that may account for why the Sabre 34 eventually became the longest-running hull design in Sabre history. It also accounts for Sabre Yachts moving quickly into boatbuilding overdrive.

The Sabre 34 was followed by the introduction of the Sabre 30 in 1979. Even devotees of the 28 were asking for a little more room in a pocket cruiser, and Roger wanted to be sure they got it. Besides, it was becoming clear the market for the 28 would eventually run out, which it finally did in 1986. Roger wanted to be sure he had a boat to take its place, particularly for the part of the Sabre culture that couldn't afford a Sabre 34 but still wanted to be part of what was rapidly becoming a well-known and well-liked brand of boats. The Sabre 30 lasted until 1993 in three versions. In all, 244 hulls were produced.

By 1980, Sabre Yachts was in full stride. Although the nation as a whole was in an economic mess, with high inflation rates (10 percent), high interest rates (15 percent), and high unemployment (more than 6 percent), Sabre Yachts was expanding. Having expanded the production facility in the mid-1970s to 30,000 square feet, Roger undertook another huge expansion to accommodate his latest and biggest design, the Sabre 38. The design sported the reverse transom that was becoming a hallmark of Sabre sailboat hulls. Three versions of the Sabre 38 were built between 1981 and 1995, with more than 200 hulls completed.

First powerboat

By the late 1980s it was clear that a growing number of boat buyers were bypassing sailboats altogether. With gasoline prices stabilized for nearly a decade, the demand for powerboats was up, and Roger was ready with his first commercially produced powerboat. That 14-year-old in the hydroplane was getting his dream-come-true job. In 1989, the Sabreline 36, a fast trawler-like hull, was introduced. It was popular and well received by the boating press. But rough financial seas were ahead.

The Sabreline 36, along with all Sabre Yachts, was not immune to the double whammy that the federal government and world events soon slapped on the boating industry. Starting in early 1990, lawmakers in Washington passed a 10 percent luxury tax on American-made boats. In August of 1990, Iraq invaded Kuwait, prompting skyrocketing oil prices and leading to an American economy that remained badly stalled until well after the Persian Gulf War was won in early 1991. The economy faltered, and the entire American boatbuilding industry contracted radically with many companies simply going out of business.

Sabre Yachts also came close to losing the fight with the financial Grim Reaper. With boats piling up in inventory and much of the American banking system on shaky footing, a major lender suddenly got nervous and called for

Sabre years of production

***Sailboats*:**
Sabre 28 I – hulls 1 to 199 built 1970-75
Sabre 28 II – hulls 212 to 539 built 1976-82
Sabre 28 III – hulls 540 to 588 built 1983-86
Sabre 30 I – hulls 1 to 100 built 1979-82
Sabre 30 II – hulls 101 to 136 built 1983-85
Sabre 30 III – hulls 137 to 244 built 1986-93
Sabre 32 – hulls 1 to 87 built 1983-87
Sabre 34 I – hulls 1 to 255 built 1976-85
Sabre 34 II – hulls 256 to 430 built 1986-91
Sabre 36 – hulls 1 to 106 built 1985-90
Sabre 362 – hulls 107 to present; introduced 1993
Sabre 38 I – hulls 1 to 100 and 104 built 1981-87
Sabre 38 II – hulls 101 to 215 built 1988-1995
Sabre 402 – hulls 1 to present. Introduced 1996
Sabre 42 – hulls 1 to 62 built 1987-89
Sabre 425 – hulls 63 to 91 built 1990-1995
Sabre 426 – introduced September 2002
Sabre 452 – hulls 1 to present; introduced 1998

***Powerboats*:**
Sabreline 34 – hulls 1 to present; introduced 1991
Sabreline 36 – hulls 1 to present (no hull #13); introduced 1989
Sabreline 36 Express – hulls 51 to 106; introduced 1995
Sabreline 36 Express II – hulls 107 to present; introduced 1999
Sabreline 36 Sedan – October 2001 to present
Sabreline 42 – August 2000 to present
Sabreline 43 – hulls 1 to present; introduced 1995
Sabreline 47 – hulls 1 to present; introduced 1997

full payment of a big Sabre loan. "We wouldn't have had to close our doors if they had stuck with us," says Nancy Basselet, who was then and still is the company's chief financial officer.

In early 1992, with the loss of the bank support, the plant was temporarily shut down. However, several venture capital groups immediately came forward to see if they could help the company, including Sabre boatowner Ed Miller who heard of the company's plight. Ed was so taken with his Sabre sailboats over the years that he stepped up and in less than three weeks found funding to get the company rolling again. "It really was a tribute to the company and our customers that he came forward," Nancy says.

Still produced

Several weeks later the plant was back in full production, and the design for a new Sabre 362 was developed jointly by Roger and renowned yacht designer Jim Taylor. This new model was chosen as a Boat of the Year by *Sailing World* in 1993. Roger was clearly at the top of his game. Despite this and his many other successes however, he was forced to relinquish full ownership of the company and became a shareholder with the new investor group.

In 1993, amid tears and good wishes, Roger retired, leaving Sabre Yachts to a team of 150 employees, many of whom he had personally selected and hired during the previous 23 years. "He left us in wonderful shape," says Nancy Basselet. Roger had hired her as a secretary, but saw too much potential in her to leave her to answering phones and the like. Her story is one of many company legends repeated at Sabre.

Since Roger's departure, the company has been led largely by president and CEO Daniel Zilkha, whose management style is different from Roger's. With a background in running a half-dozen different types of businesses, Daniel, 60, has continued to build Sabre's growth through acquisition and expansion while maintaining Roger's original commitment to being "the Rolls Royce" of production yacht builders. This led to use of the patented SCRIMP method of resin infusion, which results in higher glass-to-resin ratios in hull and deck laminates.

In 1996, Daniel was instrumental in converting a recently acquired boatyard in Rockland, Maine, into North End Composites, which has become a notable industrial, commercial, and architectural composites construction company.

"In 1993, amid tears and good wishes, Roger retired, leaving Sabre Yachts to a team of 150 employees, many of whom he had personally selected and hired during the previous 23 years."

Despite its diversified role, North End maintains an active presence in the marine mold-making and the parts production business for Sabre as well as for other boatbuilders. According to Sabre's marketing manager, Bentley Collins, the decision was made five years ago, when North End was molding parts for the U.S. Navy's Aegis-class destroyer program, to separate North End from Sabre. Both companies share the same shareholders, who are mostly members of the Zilkha family.

New powerboat line

In June, North End Composites announced its own line of powerboats called Back Cove Yachts. Bentley Collins says the line is targeting the 29- to 34-foot, single-engine range, while Sabrelines will continue to be bigger. The balance between sail and power, Bentley says, has helped the company endure the vagaries of the economy.

In 2001, Daniel oversaw yet another expansion of Sabre's facility in South Casco, adding some 18,500 square feet of manufacturing plant for various new non-Hewson designs that are currently in production.

And this year, Jim Taylor, who has designed all Sabre sailboats since Roger's departure, was commissioned to design a new mid-size boat, the 386.

Today, Roger is engrossed in another consuming project, writing down what he has learned about managing companies and inspiring people. The book, to be published later this year, also will describe how a man who is the ultimate do-it-yourselfer and self-starter remains energized.

"I'm having a wonderful time doing this," Roger says enthusiastically as he walks among tables piled high with reference books he has bookmarked, annotated, and underlined within an inch of their lives. "This is a wonderful challenge."

Owner Resources

As the listing of Sabre models on Page 13 shows, there are lots of devoted owners of Sabre sailboats. So it's little surprise that there are also all sorts of Sabre owner associations out there. The following is a partial list:

Sabre Yachts Corp.
P.O. Box 134, S. Casco, ME 04077; phone 207-655-3831; fax 207-655-5050; <http://www.sabreyachts.com>.

Sabre Association
Roger Gaby, 2504 Wheeler Bluff Drive, Raleigh, NC 27606; 919-483-9035 and 919-233-5866; <rrg30299@glaxowellcome.com>

Sabre Email Discussion Group
<http://members.sailnet.com/email_lists/index.cfm>

Chesapeake Bay Sabre Association
Skip Hardy, 410-869-1711.

Sabre (Long Island Sound Sabre Association)
P.O. Box 134, Hawthorne Road, South Casco, ME 04077; 207-655-2396; <sabre@sabreyachts.com>

Northern New England Sabre Yacht Owners Association
B. Griffin, 5 Channel View Road, Cape Elizabeth, ME 04107.

Sabre 27 website (UK)
<http://www.sabre27.org.uk/>

Autopilot update

Significant advances in new generation of autopilots

by Bill Sikich

Commemorative photo of Autohelm 3000 aboard *Mystic,* the editors' C&C 30. This autopilot ran frequently for nearly 10 years. The day following this photo session, it failed. An indicator of how important this feature is aboard *Mystic:* a new autopilot was ordered immediately.

Not long ago, autopilots were little more than powered aids to steering with somewhat primitive designs and a reputation for being a nuisance. Now, thanks to the same technological revolution that has reinvented marine navigation and communication, recreational boaters can purchase consumer-level products that display a level of sophistication previously seen only in the most expensive navigational systems.

The basics

The two primary components of any autopilot are its steering motor and guidance control computer. The electric steering motor can be interconnected to the rudder controls through above-deck or below-deck mechanical or hydraulic means. The boat's existing steering system, size, and the budget or preferences of the owner determine the configuration. The guidance computer sends control signals to the motor based on course settings made by the user and input from some type of navigational instrument, comparing the two and moving the rudder when it detects that the boat has left its intended course.

When engaged, the system acts as a spare robotic hand, keeping the boat on course without human intervention …a very liberating experience for the previously helm-bound skipper. When disengaged, the system passively allows normal hand steering via the wheel or tiller.

Evolution

Early autopilots were relatively simple devices, allowing the user to set course with a dial and taking navigational input from a fluxgate or photo-optic compass. Some units included adjustments for sea state, allowing the system to keep course without overreacting to each pitch or yaw. These first-generation products were manufactured without the benefit of the high-performance data-processing technology common in today's electronics, limiting the efficiency and effectiveness of their design. Problems like understeering, oversteering, excessive power consumption, and inconsistent performance frustrated many early autopilot users.

> *"When engaged, the system acts as a spare robotic hand, keeping the boat on course without human intervention."*

The latest round of product offerings reflects significant advances over its predecessors. Experience gained by manufacturers through their earlier efforts has led to improved mechanical designs with greater reliability and energy efficiency. Improvements in computing power and software design have virtually eliminated many of the performance issues affecting earlier models and made possible many exciting new control and navigational features. These refinements have allowed the autopilot to evolve from what was a "nice-to-have gizmo" to what has become an essential system for many modern yachts.

Better navigation and control

Nearly all manufacturers now include support for the National Marine Electronics Association standard for instrument data exchange (NMEA 0183) as a feature of their electronic products, including autopilots. Some manufacturers include support for both the NMEA standard and their own proprietary data-bus protocols.

These capabilities allow the system to exchange information with any similarly featured electronic device on the boat. As a result, in addition to managing the boat's course based on compass readings, modern autopilots can also accept input from:

- ***GPS devices.*** The autopilot can

steer to course, track and waypoint settings created on a Global Positioning System (GPS) receiver. Some units also accept Loran and Decca data.

- ***Radar systems.*** You can program the pilot to steer your boat to a specific radar target, with compensation for current and leeway handled automatically.
- ***Electronic input.*** The leading electronic chart plotters and computer navigation software products will provide NMEA control signals to an autopilot through a serial or network connection.
- ***Wind instruments.*** When connected to an electronic windvane, the autopilot can maintain course relative to the wind's direction.
- ***Knotmeters.*** Input from speed instruments helps the autopilot to steer the most efficient track.

This data-exchange capability also allows the autopilot control unit to act as a data repeater for these other types of instruments, reducing the number of instrument displays needed on board or for the installation of multiple control units in different locations around the boat (one at the helm and one at the navigation station, for example).

In addition to keeping the boat on course, modern autopilots also offer useful and important features such as:

- ***Crew-overboard control.*** When a crew-overboard control is activated, the pilot will immediately change heading to a return course.
- ***Automatic tacking.*** At a touch of a button, the autopilot can tack the boat through the wind smoothly while you and your crew handle the sails.

"Experience gained by manufacturers through their earlier efforts has led to improved mechanical designs with greater reliability and energy efficiency."

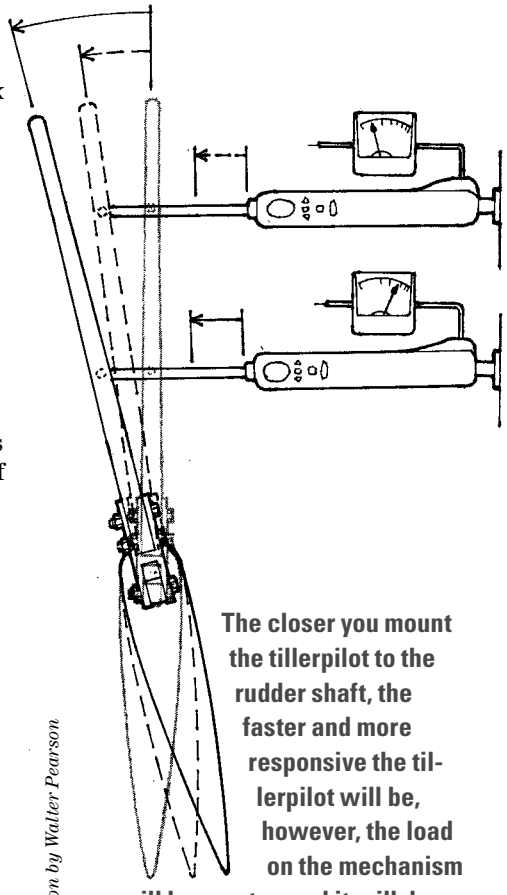


Illustration by Walter Pearson

The closer you mount the tillerpilot to the rudder shaft, the faster and more responsive the tillerpilot will be, however, the load on the mechanism will be greater, and it will draw more current. Within limits, this is a reasonable situation.

- ***Sea-state controls.*** Adjustable sea-state controls compensate for swell and other factors to avoid over- or understeering and to minimize power consumption.
- ***Waypoint advance.*** As you run down a set of waypoints created by a GPS or computer, the autopilot can keep track of your progress, changing course for the next waypoint as each is reached.
- ***Joystick steering.*** The autopilots also allow you to steer manually with a joystick.
- ***Compass correction.*** The autopilot can make automatic correction for compass deviation.
- ***Magnetic dip correction.*** The autopilot can compensate for variations in the earth's magnetic field at high latitudes (magnetic dip).

Selecting an autopilot

Technical wizardry aside, the most important factors to consider when choosing an autopilot are the overall length and displacement of your boat. The most common mistake made when selecting an autopilot is choosing one too small for the job.

There are three types of systems to consider: tillerpilots, wheelpilots, and belowdeck systems. Tiller and wheel systems are cockpit-mounted, applying drive directly to the helm through either a push-pull ram unit for tillers or direct-drive motor or belt for wheels. Cockpit-mounted pilots are less expensive, easier to install, and sufficiently powerful for light- to moderate-displacement boats used for daysailing or coastal cruising in moderate conditions.

More demanding applications are best handled with a belowdeck unit.

A belowdeck pilot, at left, is more expensive and harder to install, but it is also more rugged and reliable. A cockpit pilot, at right, costs less and is easier to install. There is no free lunch, however. Most of these are too delicate for offshore work. Also, when choosing an autopilot to install on your boat, remember that not all cockpit wheel pilots fit all steering pedestals.

For boats with mechanical steering, these systems use a linear or rotary drive motor to apply control directly to the steering quadrant or rudderstock. On boats with hydraulic steering, control is applied using a pump set fitted to the existing lines, a somewhat simpler installation than with a mechanical system.

The place to start when choosing an autopilot is with the manufacturer's recommendations for the maximum length and displacement their system can handle. Compare these with your boat's own ratings, but bear in mind that manufacturers tend to be somewhat generous in describing their product lines. If your boat is close to the maximum rating for either length or displacement for a particular unit, choose a more powerful model. Also

"Consider your choice carefully — the most common mistake made when selecting an autopilot is choosing one too small for the job."

factor the heaviness of your boat's helm into this equation. If it takes a bit of muscle for the skipper to hold the course, the autopilot will likewise need to generate sufficient thrust to steer without being overloaded.

Also consider how responsive you need the pilot to be, measured in degrees per second of rudder movement. A performance cruiser that sails with a light touch won't need as quick a response time as a boat that takes a lot of rudder movement before the effects are felt.

Back in the real world

As sophisticated as these systems have become, they are only machines and no substitute for good seamanship. Always keep a lookout . . . the autopilot can't see obstacles or recognize when the radar or GPS is providing erroneous information. Maintain a dead-reckoning plot and see how your charted course compares with your float plan. Recognize that these systems have limits to their effectiveness. An autopilot can't anticipate wave action the way a human can, especially in following seas. Avoid overtaxing the pilot for prolonged periods — when faced with difficult conditions, choose a course and trim that minimizes weather helm or take the helm yourself.

Given these guidelines, take advantage of this technology and enjoy your sailboat in ways never before possible.

On the other hand

by Jerry Powlas

Mikey (our boat's Autohelm 3000) died on Sunday, June 22, 2003 . . . at the helm. For 10 years, he was far and away the most unreliable piece of equipment on the boat. While unreliable, Mikey was the best helmsman aboard in darkness and fog . . . as long as the seas were not too high. In addition, he was one of the few pieces of electronic gear that survived the lightning strike in the summer of 2002. We liked Mikey, but we never really trusted him. I think that's how it should be.

In spite of his unreliability, we don't like to go on vacation or make long crossings without Mikey. The name, by the way, came from my Navy days when sailors were envious of the autopilots aboard merchant ships. We referred to these handy devices as "Iron Mike." Our ship had no autopilot. We steered by hand 'round the clock. "Mikey" is simply a diminutive of Iron Mike.

Most years I repaired Mikey at least once. Since it involved wet or dirty connections in the electronic control (Mikey's brain, as it were), I referred to the work as "doing brain surgery." Over the years, the vast majority of failures came from a poor connection between the LCD display and the circuit board. I learned to fix that in less than an hour. Mikey would also lose his memory if fed low voltage. This was a more complicated fix; I devised a special power circuit that kept his voltage up during engine starting.

When Mikey had the "Big One," it was because one of the motor brushes wore away completely, and the brush holder tried to complete the circuit by dragging on the commutator. This actually worked in one direction. But when the motor reversed, the brush holder dug into the commutator slots and got into mischief, which caused the output transistors in the control unit to fail. The motor was not designed to be rebuilt, and the output transistors were not designed to be removed from the circuit board. We did not even ask what the repair would cost. We ordered a new autopilot. Unfortunately, it did not fit our boat. We ordered another one. Lesson learned: make sure the autopilot you order will fit your boat and/or make sure your supplier will allow you to return it if it does not fit. Some are reluctant to accept returned electronic equipment.

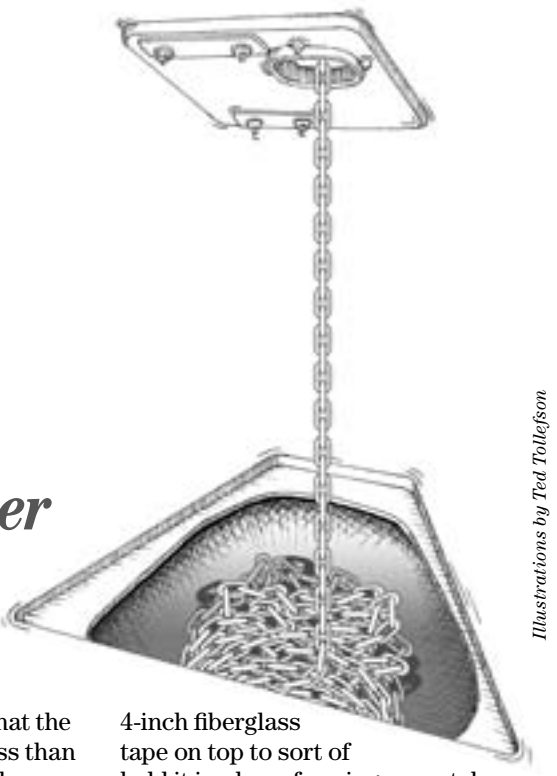
Should you connect your autopilot to your GPS and radar and other electronics? Perhaps these things need to be connected to each other so they won't be lonely. Otherwise, there is something to be said for not networking the electronics, the autopilot in particular. The "advantage" of connecting the autopilot to the GPS is that it can steer to a waypoint and compensate for set and drift. You can accomplish the same thing by monitoring the cross-track error from your GPS. By this I mean do your navigation on a chart, using your autopilot to steer between determined points. Key in the waypoint on your GPS and regularly adjust the autopilot heading so the boat stays on the track, which is expressed by the cross-track error. If the cross-track error starts building up to the left, crank in some more right heading.

You may not do this as well as a networked autopilot, but you will at least be on watch and monitoring the cross-track error along with all the other things a competent and responsible watchstander does. The advantage of this method is that you will know where you *are* as well as where you are *going*. If you are trusting a networked autopilot, it will happily steer right over hazards on the way to the waypoint. Personally, if I could network my autopilot I would not.

Chain reaction

A crafty sailor converts a water tank into a chain locker

by Mike Keers



Illustrations by Ted Tollefson

The stock water tank in my 1965 Columbia Defender 29 was a plastic, 25-gallon, tapered, trapezoidal thing under the V-berth way up forward. It had evidently leaked from the outlet nipple, as the previous owner had made several attempts at repair. There were wraps of tape and gobs of some hard, putty-like substance all over the nipple and hose connection. Filling was accomplished by dragging a garden hose through the foredeck hatch, lifting the berth cushions, and unscrewing a cap on top of the tank through a small lift-out lid in the plywood V-berth flat.

I never liked the setup, and the tank still leaked, so I abandoned it. In a multi-year rebuild, I changed the interior plan to include a peninsula with a sink and a permanent dinette, and I built a water tank to fit under that. This put the weight closer to the center of the boat and minimized the hose run from tank to sink. I just forgot about the old tank up forward.

When I converted to an all-chain rode and manual windlass, the subject of storing 200 feet of ¼-inch chain arose, of course. My thoughts instantly fell to the water tank, lying empty for years. I determined that the weight of the chain would be less than the weight of water in a full tank, so trim would not be adversely affected.

I mounted a Lofrans windlass on the foredeck, approximately over the water tank, which happened to be the ideal location for the windlass anyway. I installed a deck pipe so the chain could drop straight down into the V-berth area.

Next I used a jigsaw to remove a large portion of the plywood berth flat over the water tank. I left about four inches of plywood and tabbing where the ply met the hull sides. This hole was about 4 feet wide at the aft end, 2 feet at the bow, and about 30 inches long, exposing the whole tank. At that point I was not sure whether to remove the tank or leave it in place. I cut away the top of the tank, leaving about two inches of the top to form a lip. After looking it over, I decided that the tank would make an excellent chain locker and keep the chain off the hull.

Formed tabbing

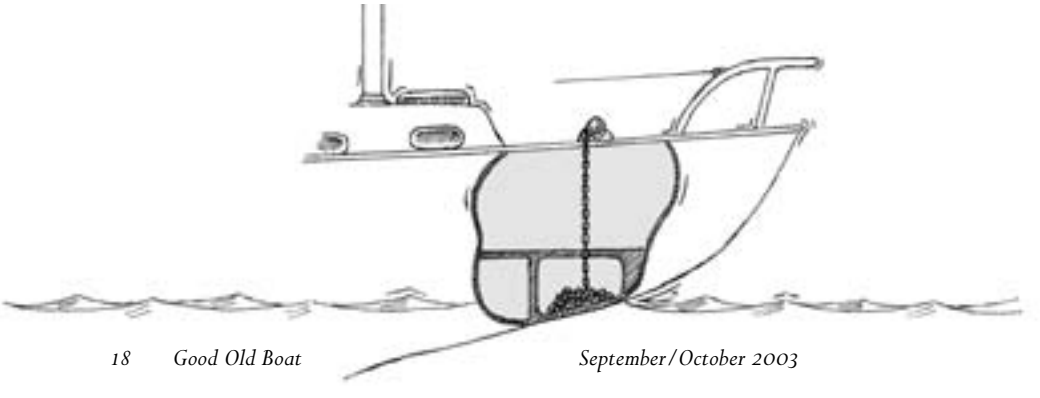
The tank as installed just rested on the hull, and the factory simply laid a bit of 4-inch fiberglass tape on top to sort of hold it in place, forming some tabbing between the hull and tank top … of course it was that poly-plastic that nothing sticks to. The result was that the tank moved around quite a bit under the little tabbing pieces.

I bought a few cans of high-density expanding foam and shot that all around and under the tank to make a form-fitting nest. It didn't move after that. Then I made a lift-up lid out of the plywood piece I cut out of the berth. This rested on wooden cleats I screwed to the underside of the hole.

To use the locker, I simply flipped up one or both cushions and the lid, and the chain would freely drop straight down into the "bin" or run up to the windlass mounted on deck directly above it.

When underway and after anchoring, I kept the chain out of the way by leading it through a small cutout in the lid and up the hull side, looping it over a hook under the deck (similar to a swag lamp) and then leading it out the deck pipe. This freed the V-berth for sleeping. The only time the cushions and lid needed to be lifted was when the chain was running out or in, while setting and weighing anchor.

I thought this was a pretty elegant solution to storing 200 feet of chain and getting some use out of an abandoned tank and wasted space. An unexpected benefit was created when I led the old water line (a length of garden hose) from the tank outlet to the bilge. The hose then became the drain for any water coming in with the chain.



Courtesy of Tiller Publishing

Bill Garden: A memoir

One of Bill's pupils reminisces as the one-time mentor turns 85

by Robert Perry

Dear Editor: *You want me to write a piece on Bill Garden including background biographical information to be published … along with photos of Bill? I'm not sure I can do this. Bill enjoys his privacy like few other people. He once spent 10 minutes explaining to me his philosophy behind avoiding having his picture published. How about I just give you a stream of personal impressions of Bill based upon the time I spent with him when I was a kid?*

I was 15 years old in 1960. I was in love with boats. I began buying and collecting boating magazines. I studied the various designs. There was just something about boat designs that intrigued me, especially one powerboat that looked like it was a close cousin to a fishing boat. The design article was titled "Garden Cruiser." Now what the heck is a "garden cruiser?" It can't be a 40-foot boat you cruise around your garden. Eventually I figured it out. Garden designs were a very regular feature in all the magazine design sections. Bill was prolific. I wanted to be a yacht designer, too.

One day I was walking through Seattle's Shilshole Bay Marina, back before they put locks on the gates. I had my sketchbook. I was sketching design and rigging details. I came to a long, light greenish/gray sloop with the name *Oceanus* on the stern. I was struck dumb. This boat was really different! There was *nothing* about this boat that I could relate to the other boats on the dock. It had a long, exaggerated canoe stern. It had an almost featureless, molded-looking cabin trunk that morphed into a pilothouse with a "baseball cap bill" over the windows. There was an aft overhang on the pilothouse that curved exactly the opposite way from what you would expect.

But damn, the entire thing worked together to present a marvelous picture of a sailing yacht, a unique sailing yacht. I'm reminded of that scene in *Close Encounters of the Third Kind* in which Richard Dreyfus looks at the immense pile of mashed potatoes mounded on his plate and mutters, "*This* is important." When I looked at *Oceanus*, I thought, "*This* is important."

Incredibly jealous

I told Jay Spearman, my sailing friend at school, about *Oceanus*. "Oh, that's Bill Garden's boat," he said. "He's a friend of my dad's." I was incredibly jealous that he knew Bill Garden; a family friend, no less.

I kept drawing boats. I kept studying the designs of Bill Garden. I practiced writing in Bill's lettering style. I filled pages with Garden "R's." I could draw little Garden men with carrot noses with my eyes closed. I practiced writing my name with Bill's address. Bill's drafting style became my drafting style, or at least I did the best I could to emulate it while combining it with other styles that I admired. Bill's style was so incredibly strong that it was impossible for me to try to lift techniques from it without being overcome with the guilt of copying.

> *"I asked him how he drew without a T-square. He said, 'If I don't know 90 degrees by now, I might as well quit.' "*

I told Don Miller, my English teacher and the Corinthian Junior Yacht Club sailing instructor, about my admiration for Bill's designs. Always supportive of my efforts, he said, "Why don't you call him and arrange a visit?" I did. It was arranged for a Saturday morning. My dad drove me out to the Seattle locks and dropped me off. This might be hard to believe, but I truly expected Bill Garden to be seated at a drafting table elevated in the middle of a room surrounded by other drafting tables. My 15-year-old imagination had literally put Garden on a pedestal. At that time, Bill must have been 42 years old. He turned 85 this summer. I marvel at the fact that I am older now than Bill was when we met.

Small footbridge

Bill's office in the 1960s was located on Commodore Way, perched on a steep bank on the south side of the Hiram Chittenden locks in Seattle. You walked across a small wooden footbridge to enter the office. The styling of the building was modern and clean. I'm certain Bill designed it. There was a sail loft on the floor beneath Bill's level and a boatyard on the waterfront level. I knocked and was called into the office. There was no one in the tidy reception area. I peeked through the next door. There he was: alone, standing over a drafting table, drawing. He was kind of short and skinny, certainly several inches shorter than I was.

The office was very neat with rolls of drawings here and there and a lot of drawers to hold drawings under the endless drafting table that ringed the room. There were photos of Bill Garden boats lining the wall, all reproduced in

a similar size and arranged in a straight line. Picture windows looked out over Lock Haven Marina and the locks. I had found heaven. I noticed that Bill was not using a T-square. Every drafter used a T-square I thought. I asked him how he drew without a T-square. He said, "If I don't know 90 degrees by now, I might as well quit."

I fumbled with words to express my admiration and gratitude at being able to meet him. His response was gruff and to the point, and while I can't remember his exact words, it was something to the effect of, "I hate flattery." Hurt, I'm sure I blushed. But I was young, and I healed quickly.

He then said, "Call me Bill," and gave me a copy of his spiral-bound design catalog, *100 Yacht and Vessel Designs*. I still have it. It's right here. Always. He was an accommodating and friendly guy. While obviously totally absorbed in his own pursuits, he always had time for me.

Searched the files

I spent that Saturday morning deliriously happy. Bill said I could rummage through his files. I rummaged with a vengeance. I must have taken him some of my own drawings, but for some odd reason I have absolutely no recollection of Bill Garden ever critiquing my work. He stopped working long enough to put together a great roll of extra prints for me to take home. I felt like I had found buried treasure. I even had the framing plan for a small steel ferryboat. Yes!

Bill's general treatment of me became my model for how I tried to relate to the many youngsters who came to visit my office over the years.

That morning Bill asked me if I would like lunch. Are you kidding? Of course! We drove to the diner in

"Bill's general treatment of me became my model for how I tried to relate to the many youngsters who came to visit my office over the years."

Bill's plain Ford sedan. I had bus fare home, 35 cents in my pocket. I held my breath but there it was at the bottom of the first page of the menu, "French Fries .....35¢."

"I'll have the French fries, please. Yep, that's all I eat, French fries." Bill picked up the tab, and I felt stupid and still hungry.

I was soon visiting Bill fairly often on Saturday mornings, hoping to be chosen as his summertime helper. Unfortunately, he had chosen Steve Seaton for several summers in a row. By the time he chose me, I was forced to turn the job down as he didn't pay anything, and I needed to make money for college. I'm baffled now that I did that. I think I was afraid to expose my own meager design skills. I'd look at the sketches Steve had done in Bill's office, and I was convinced I could never do as well. Bill remained elevated in my eyes. (I had originally written "godlike.")

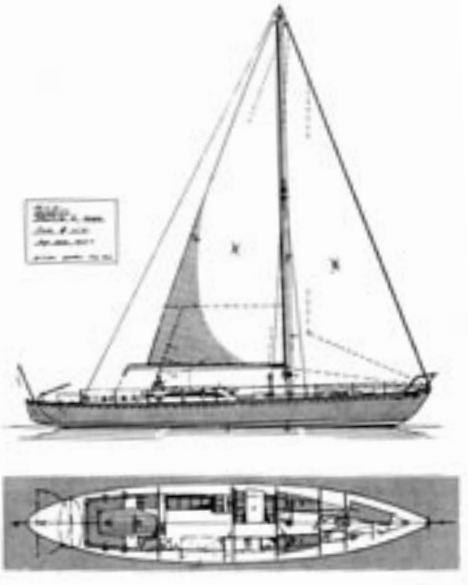
Crewing on *Oceanus*

I crewed for Bill on his 60-foot *Oceanus*, beginning when I was 16. We raced fairly regularly, always with a bunch of clients and cronies on board. Bill needed some young guys to do the hard work. He seemed to have an extremely loyal and eclectic group of friends. They always had a great time enjoying warm friendships. There was Carl Harper, the sailing cowboy, who wore cowboy boots while sailing; and, Ellis Provine, a gentle, kind man with a Scottish tam. There was a covey of salty characters. While Bill steered *Oceanus* standing on a box designed to get his eye level over the top of the pilothouse, his pals would line up on the bench in the back of the deep cockpit, smoke cigars, and pass the flask.

I had no foulweather gear. I was cold and wet all the time but without a doubt the happiest kid in Seattle. I finally splurged and bought navy-blue canvas Sperry Topsiders. I was proud of my yachting shoes.

I walked down to *Oceanus* and climbed aboard for the race. Bill took one look at my shoes and said, "Don't wear those shoes on board. They pick up rocks and scratch the paint." He seemed to wear what I would call après ski boots for sailing. His clothes were almost Eddie Bauer-like in style, but on his gaunt frame they appeared to be two sizes too large. I continued to wear my new shoes. Bill never mentioned them again.

I loved *Oceanus*. It was far from a rocket by today's standards, but in Seattle in its day, we generally had the ability to out-waterline the competition. We regularly had boat-for-boat races with an old 8-Meter. Bill's sails were awful. Still, it was Bill's boat and an aesthetic marvel. One



***Oceanus*, at left and above, the Bill Garden-designed and -owned sloop that first caught young Bob Perry's eye. *Buccaneer*, another Garden design, at right.**

morning I showed up at Vic Frank's boatyard where *Oceanus* was and gave the boat a thorough scrubbing. All 60 feet of it. Bill fussed about with things below as we prepared to motor out to go racing. Ellis Provine said the boat had not been that clean since it was a "puppy." I beamed. Bill said nothing.

Get *Skene's*

My incessant design questions were usually answered with, "Get a copy of *Skenes*." *Skene's Elements of Yacht Design* was the ancient textbook for yacht designers. I did manage, however, to get a few gems of advice out of Bill over the years. In preparation for writing this article, I pulled the load of correspondence we have shared since then and reread most of the letters. His letters to me were always handwritten in a loose scrawl. These gems were full of life and soft, subtle, sage advice.

I asked Bill, "How much lead I should give a sailplan to insure correct helm balance?"

He answered, "Lots. How many boats have you ever sailed with weather helm?"

"Most of them." I answered.

"How many boats have you ever sailed with lee helm?" he asked.

"None, yet," I answered.

"See?" he said.

While scrubbing *Oceanus*, I found a spare key. It was hidden, tucked behind a piece of molding on the cabin trunk back. If the Russians ever dropped the atomic bomb, I had a plan. I was going to hightail it down to the marina and steal *Oceanus*. I'm not kidding.

Bill on everything

I asked Bill one day, "What do I do about rudder flutter?" He responded, "If the rudder has a radiused trailing edge, flatten it. If the rudder has a flat trailing edge, radius it."

One afternoon on his island he spent about two hours drinking tea and lecturing me about all the legal hassles he had experienced over the years. "Never *guarantee* performance in writing," he told me. I'm not sure what his aim was that day. If he was trying to discourage me, it didn't work.

In 1977 I got a letter from Bill dated "Advice Day 1977." He advised me to "trim the whiskers to a good Van Dyke, and you won't lose identity with the kooks; and you will relate better to the people who are spending the money. All unkempt geniuses die broke, plus the fact that they itch

Bill Garden's Rawson 30 is one of his production designs.

and eventually bore their wives." He added, "Yacht designers are like violin players: all supply and no demand."

Bill was very "real." I'd sent him a drawing to look at. His letter finally addressed it: "Your ketch looks fine and is a nice drawing. I believe she will trim about 5 inches deep so caution them to keep the W.L. paint high, as shown. The first few years are hard, but you have a good eye and like to draw. So if you can keep from starving to death, the people will eventually come to you. You are in the period that wipes out the competition. Keep me posted."

Other topics addressed in his letters:

"I'd love to have you back here to do all the work, but I'd be back in business then.

"As I see it, the design business will supplement clam digging in the near future. We are headed for a violent reappraisal that will make the 1930s tame.

"Eighty-two percent of everybody in the world are not competent at anything.

"Age 40 isn't bad . . . 67 getting obsolete and ready for knackers. Dropped a piling on my big toe last week. Big hurt. Head cold this week. Mild fever which speeds up productivity."

Hero worship

Bill's letters were always accompanied by sketches and prints. Many of them were hand-colored. Needless to stay, I kept them all. Looking back at these sketches today, I am amazed at the amount of work he put into using the colored pencils to highlight the blueline prints. It takes immense effort to appear that cavalier.

As a kid I had a bad case of hero worship. That doesn't bother me today. Bill Garden was a good hero to have. I spent hours studying the details of his designs. There has never, ever been a yacht designer who showed as full a grasp of aesthetics over such a wide variety of designs. From the minuscule *Bug* to a big fishing boat, to a high-speed powerboat, to a character yacht, Bill's style is immediately recognizable. His drawings are rough, hairy, vague, exact, and expressive beyond words. Every line is exactly appropriate. Much of this drafting and design style came from H. C. Hansen, a Washington state yacht designer, but Bill surpassed Hansen's efforts to such an extent that it's impossible to see this style today as anyone else's.

Bill and his work continue to be a huge influence on my own work, despite the fact that I have matured (I hope) into my own design style. Next to my workstation here today I have a cardboard tube in a drawer. In that tube is a drawing of Bill's. I saw the drawing in his office years ago, and I wanted it. So I called him up.

"Send me that drawing," I said. I was blunt.

"OK, I'll send you a print."

"I don't want a print. I want the original."

"OK. Do you want me to color it?"

"If you like."

I got the drawing. It was carefully "colored in." At the end of a long day, some buddies of mine will occasionally drop by and have a wee Scotch while beating old dead sailing horses and discussing perfect boats. "Hey," I say, "I'll show you something that'll knock your socks off." I pull out the tube, take the drawing out, and unroll it. "There." We silently sip our Scotches and take that salty journey deep into the genius of Bill Garden.

No college degree

Bill was born in Portland but moved to Seattle and attended high school there. He was building boats from an early age. He spent time in the Army and was stationed in the Aleutians. He sketched a lot of boats while in the service. Bill did not go to college, but he managed to get "grandfathered in" for his naval-architect license. Bill drew every kind of boat imaginable.

Bill is about 5 feet 9 inches and very thin, with sharp, hawklike features. A client of mine and a high-school mate of Bill's once told me, "Bill was working at looking like an old salt when he was 19 years old." He has a look to him that tells you quickly he doesn't abide fools or appreciate having his time wasted. Bill has a very distinctive walk with a spring to his step that

gives the impression he's always off to do something important.

I saw Bill about five years ago. We were launching a new 50-footer of mine, and Bill motored by in his launch. Disappointed that he didn't stop, I waved. He waved. I felt bad. The boat needed a contrasting bootstripe, but the owner had opted not to do it. I hoped Bill would not think that was *my* idea. I so badly wanted him to be impressed with my new 50-footer. Everyone else was. But that didn't matter to me.

Oh, well. I *do* have an envelope from him addressed to "Robert H. Perry, N.A." That N.A. after my name, written in his hand, means more to me than any college degree.

If we really want to know who Bill Garden is, I think we are better off looking hard at some of his designs and leaving the man to his privacy. His production designs include the Fast Passage 39, Rawson 30, Bayliner Buccaneer 305, Vagabond 47, Truant 33, and Gulf 32. But, as with most designers, his custom work is far more interesting.

Andy's Boat

One design is called the Spice Island Cutter, but I know it as "Andy's Boat." I knew Andy, and I knew his boat. Andy's Boat did not have the pulled-out clipper bow. Andy's bow was almost plumb, and I liked it better than the clipper version. This design is a perfect example of how Bill could take a totally impractical type of boat and turn it into a boat you would drool over. It's a dream machine. I cruised alongside Andy on several occasions, and I can assure you this boat was slow. Very slow. Still, it was handsome and made you long for a time when things were simpler and you didn't smell polyester resin when you stepped aboard.

The sheerline is perfect. It's strong and rises to a pugnacious bow when you build the plumb stem version. I find the clipper bow too exaggerated, but that's what Bill was good at. While many designers would end their outboard rudders with graceful curves, Bill preferred over the years to keep the lines of the rudder blade straight. The hull form in plan view is almost "cod's head and mackerel tail" with the max beam well forward. This is not the shape of speed. But at the waterline the DWL (designed waterline) in plan is sweet, with some slight concavity at both ends. The sections show a wineglass form with great hollow bilges. You could build your Spice Island Cutter with internal or external ballast. This boat is a true "full-keel" design. It's hard to imagine more wetted surface for this DWL. The D/L (displacement/length ratio) of this design is 493. I don't think I've ever seen a higher D/L.

"His clothes were almost Eddie Bauer-like in style, but on his gaunt frame they appeared to be two sizes too large."

I love the way the rig bends forward, seemingly under the pull of the headstay and its big Yankee jib. There is a "lizard" on the Yankee sheet, the block and tackle assist. There are no winches on this boat. You could rig the topsail to brail up to the mast when not needed. I think you would have to learn to fly your topsail on this boat.

Below, there is a head tucked between the berths forward. The coal-fired fireplace will keep you warm. And you will cook on what appears to be a kerosene stove.

Before sunset, in the harbor, you can pop your head out of the companionway of the Spice Island Cutter, look around the anchorage at the assembled large yachts, and breathe a sigh of relief that you can be satisfied with the simple life.

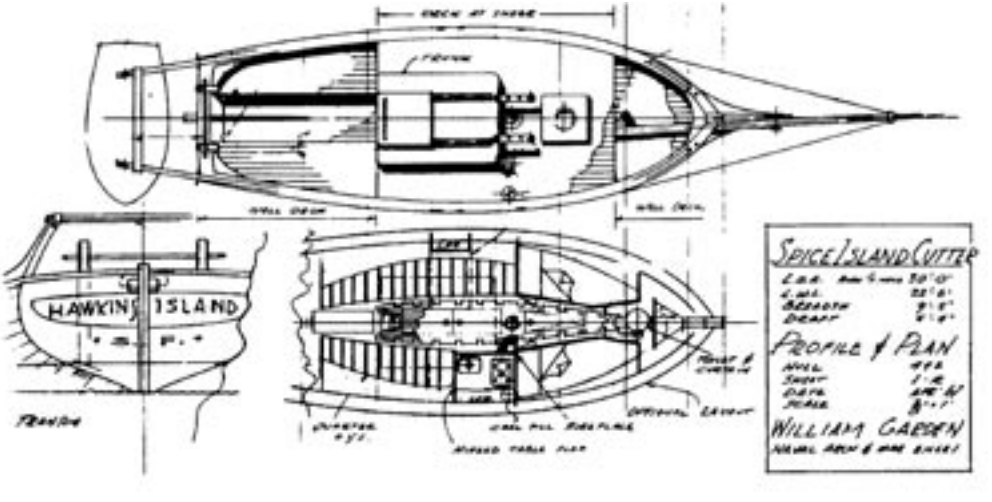
Seal

Seal was in my Garden design catalog. As a kid I would sit and stare at the drawings of *Seal* for hours on end. If things weren't right at home or things weren't right at school, they sure would be right if I just had a Garden *Seal*. You can see lots of *Seal* influence in my own double-enders — Tayana 37, Baba 30 — and so on. *Seal* was their step-grandpa.

This is a design based upon the Norwegian Colin Archer type. It's a very heavy boat with lots of keel and not much rig. If *Seal* were a man, he would have really bushy eyebrows. Bill drew both ketch and cutter rigs. I preferred the ketch as a kid.

The hull lines show broad garboards, but the ballast is external iron. The waterlines show a very symmetrical shape. I think *Seal* would have been a plodder under sail. It's too heavy and under-rigged for any speed. I just love the off-center bowsprit and the unique character of the deck structures.

You can have just as much fun losing yourself in the beauty of Bill's structural drawings as you can the sailplan. His drawings for wooden spar fittings are marvelous and for years have provided a vivid model for my own drafting. Who says the drawing for a spreader bracket can't be art? While they were fun to examine, some builders joked about these drawings, calling them "the funny papers." I still find it hard to tear myself away from the drawings of *Seal*. Boy, if I had a *Seal*, then I'd be happy.



The Spice Island Cutter will forever be known to Bob Perry as "Andy's Boat."

Courtesy of Tiller Publishing, www.tillerbooks.com

Oceanus

To me, there is no boat that says Bill Garden more than *Oceanus*. At 60 feet LOA and with a 12-foot beam, *Oceanus* is almost a canoe. There is nothing about the shape of this boat that I would call "normal."

The bow is a knuckled thing and quite flared. The stern is a strange thing of beauty. I've never seen another stern quite like it. The extreme aft overhang develops out of sections with a high degree of deadrise that right at the last moment go concave at the tip of that stern profile knuckle. It's exquisitely delicate and would have been hard to build in conventional planking.

But *Oceanus* was cold-molded with triple skins, and that was quite unusual for the time. The deep deadrise is carried right through *Oceanus*' hull. In profile, the fore-and-aft rocker appears bizarre to my eye today. The deepest part of the hull is well forward, and the canoe-body profile goes hollow around station 8.5 to roll down into that lovely exaggerated stern overhang. The trick is not to try to justify the shape of *Oceanus* by today's performance shape standards. Just sit back and wonder at the creative powers of Bill in 1953.

I never understood the rig of *Oceanus*. The mast is way forward, but so is the keel. I think in the early days there may have been a weather-helm issue because the mainsail foot appears to have been shortened. Note how much boom extends beyond the clew of the mainsail. The mainsheet was lead to a "Barney post" in the middle of the cockpit. *Oceanus* did not have a vang. In one blustery race, as we close-reached toward the finish, trying to hold off a gray 8-Meter, a couple of us youngsters clung to the boom like monkeys, trying to pull some of the twist out of the mainsail. With the rig that far forward, Bill pulled the backstay well inboard. That left the stern open to stow a hard dinghy.

I can't be objective about this boat. On the one hand, it's a wacky design. The keel and rudder configuration is unusual. But it's 2003 and Bill drew *Oceanus* in 1953, so you have to look at what else was being built 50 years ago to get a true understanding of what he was doing with *Oceanus*. Bill produced great hand-drawn lines perspectives of *Oceanus* superimposed over the lines of a 12-Meter, probably *Vim*. The horse race would have gone *Vim's* way, but *Oceanus* wins the prize for aesthetics. Leaving my objectivity aside today, I prefer to look at *Oceanus* through the eyes of a 16-year-old boy.

"Like a radical jazz musician, Bill may take you to the fringes of possibilities for any given key signature, but when he's done, the entire piece is tied together perfectly."

On reflection

Several things struck me as I went through my extensive collection of Garden designs for this article. The sheer volume of the work is impressive, even more so when you consider that Bill seldom employed draftsmen. The work you see is Bill's. Don't even *dream* that he ever used a computer.

Then there is the variety of the work. Bill excelled in every conceivable style of boat from craggy-looking workboats to pea-coated pocket cutters, to slicked-back fast power yachts. Each example is a unique vision of Bill's that stands alone in the field.

I'm also impressed with the courage and imagination of Bill's clients. Where are they today? Holed up in their plain white plastic sloops? Bill's clients certainly were never wimpy about bold, soaring sheerlines or proud and prominent bows. Clearly, in many of these designs Bill and his client were far more concerned with the style of the boat than its performance.

There's an old yachting word: "yare." It means "right." When everything about the boat is just perfect, the boat is yare. Bill's boats are yare. Like a radical jazz musician, Bill may take you to the fringes of possibilities for any given key signature, but when he's done, the entire piece is tied together perfectly. Now, juxtapose over this thought the fact that Bill designed the Bayliner Buccaneer 305 and several other boats that to my eye and knowledge of yacht design definitely poke out through the edges of the envelope. It's an enigma. But I think it's just Bill having fun while ignoring the key signature. I've never been able to listen to John Coltrane's *A Love Supreme* all the way through either. Some great artists enjoy making you uncomfortable.

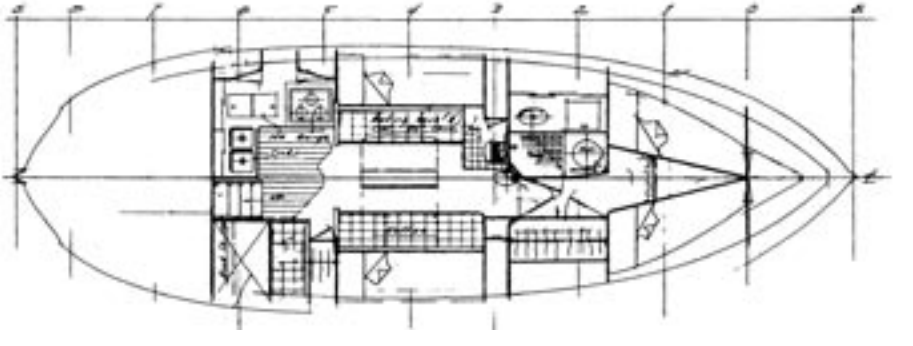
Don't do it

When I told Bill that I had been asked to write this article he said, "No, don't do it. Give the space to a youngster who needs the publicity." I told Bill this wasn't *about* publicity for him. It was about giving his admirers a better glimpse into his world of design. In short, this is about *our* needs, not Bill's.

"OK," he said. "If it will do you some good, then go ahead." He still didn't get it.

He's a fascinating old bird.

Readers interested in seeing more Garden designs may wish to read *Yacht Designs* and *Yacht Designs II*, both by Bill Garden.



***Seal* provided inspiration for a teenaged Bob Perry.**

Seeking perfection

A determined sojourner ends a long search for the right boat

by John McCann

IT WAS THE WAY THE SAILS SEEMED more like wings than cloth that held me transfixed that summer morning as I stood looking out over the open sea. In my fancy I saw the two billowing white pinions carrying off the boat and its privileged occupants to some other, perhaps more perfect, world than the one my fellow mortals and I lived and walked in … a world infinitely freer, less subject to the demands of time and place.

Only recently retired, I was strolling the beach at Long Beach Island on the New Jersey coast (to the best of my awareness a contented man) when I saw it. The sleek, 30-something-foot yawl shone like a jewel in the sun, and something within me stirred. Was it the memory of the small daysailer I had sailed on Barnegat Bay back in my college days? I had named her *Israfel* after the angel in Poe's poem. Was it the memory of feeling close to the heart of things, of trusting to the wind and the tide, and of having the solid wooden hull beneath me?

Whatever it was, that morning as I stood watching the yawl make her slow majestic way south toward Cape May, I could not prevent from passing in front of me all the many years that had come between then and now: marriage, children, a divorce, a second marriage only years later, and throughout it all a long and satisfying career as a professor. There had been the usual dreams, of course, some fulfilled and others forgotten, that had been lost to the daily give-and-take of a man's life. But all in all, it had been a good run. Yet here I was picturing myself at the helm of a fine sailing vessel far out at sea, following a star whose name I had yet to learn.

I bought a magazine … a book … another book. I walked the docks of yacht clubs and marinas, went to boat shows in Atlantic City and Annapolis, read a brochure.

One week to learn

"Achieve your sailing dreams in just one week," the Bay Island Sailing School in Rockland, Maine, promised me, and I wanted to believe them. There I learned a jibe from a tack, how to read telltales, and what to do if someone fell overboard. At the end of the week I was presented with a certificate of proficiency and told the world was my oyster … the sailing world at least. All that remained for me to do was narrow my list of preferred boats and make a final choice.

Three years and many sailing experiences later — a charter in Florida, several in Maine, cruises on friends' boats from Bar Harbor to the Chesapeake — I set out to find my boat. Due to finances and aesthetics, it was to be a good ol' boat. It was to be sloop-rigged, big enough to cruise in but not so big I couldn't handle it alone. There was a vintage Pearson 28 in Port Clyde, Maine, whose solid hull, narrow beam, and moderately long overhangs satisfied my longing for the traditional; an Alberg 30 whose combination of rugged stability and seakindliness made her an excellent bluewater cruiser; most notably a Cape Dory 26D with its classic full keel, bronze portholes, and enough interior teak and brass to make an old sea captain envious.

But as difficult as the right choice of boat could be, there were other,

sometimes even more pressing considerations: the limited finances of a fixed income, unsolicited advice from family and friends warning me about the "two best days in a boatowner's life," the decision whether to keep the boat in Barnegat, New Jersey, near our home in Pennsylvania, or in Port Clyde, where we summered in Maine.

Without a doubt the most challenging of concerns was fear … fear of being inadequate to the task … fear that, as the fantasy of owning my own boat was fast turning into reality, I would not measure up to the demands of so arcane an art and science as seamanship. It was that part of me that ever since childhood had driven me to do better than my best and to compare myself to others no matter how experienced and expert they might be. And yet, along with the fear came the realization that if I did not pursue my dream, if I did not at least try to "follow my bliss," I would come up feeling empty, depleted, less than the man I wanted to be. So I pushed on.

Experienced friend

Fortunately, I had the help of a friend who, while much younger than I, was vastly more experienced and knowledgeable in the ways of sailing and boat ownership. He was Brad Wildauer, a former student and successful businessman who sailed his Catalina 25 off the New Jersey coast. He had been sailing since he was a boy, had owned three boats, each successively bigger, and next to sailing itself enjoyed introducing others to its manifold mysteries and satisfactions. It was he who, in a generous expenditure of time and in an ironic reversal of student-teacher roles, went with me, no matter where, to look at boats — the Chesapeake, Maine, Long Island. It was he who encouraged me to go on looking when I felt overwhelmed by the mounting collection of statistics, the exorbitant prices some owners asked for their boats, the growing sensation that the ideal boat I so ardently coveted simply did not exist.

"At the end of the week I was presented with a certificate of proficiency and told the world was my oyster … the sailing world at least."

It was also he who, when necessary, served to moderate my impatience. The temptation to finish up with the search, have my own boat, and set forth at last on life's newest adventure would at times overpower both reason and the constraints of budget.

I found myself, more often than I'd like to remember, overlooking a boat's shortcomings, allowing aesthetic considerations to outweigh structural problems, wanting a boat so badly that, if left to my own desires, I would discount cracks at the chainplate, lack of good ventilation, corroded keel bolts.

"Are you sure?" Brad would caution. "Why don't you go home and sleep on it? The boat'll be here tomorrow." The next morning I would awake boatless but grateful.

There was also the question of a name. I would, of course, be satisfied with nothing but the most appropriately nautical — a sign or witness to whoever cared to notice that this was, indeed, a serious boat … that while sailing was fun, it was also about connecting with life's elemental forces: with the wind, with the sea and tides, with oneself.

Nowhere too sacred

And so I found myself, while reading at night, at dinner parties, at church — no place was too sacred — probing mind and spirit for a suitable name, choosing one only to replace it a moment later with another just as perfect. "Avoid the word 'wind,'" some counseled. "Nothing too pretentious," others insinuated. "No more than two or three syllables," several old salts cautioned. Thus was I forced to abandon *Deo Volente* as too Latin and too long; the French *Aile de mer* — who

could pronounce it? — *Southern Lady*, in honor of a wife who wasn't even remotely interested in a boat or what I called her.

In the end, frustrated and still at a loss for the perfect name, I turned the decision over…though to what or to whom I'm not quite certain. Either the boat's original name would claim my fancy — wasn't there an old superstition about changing the name of a boat? — or the right one would magically present itself when first I saw her.

And then one fine fall day, when all I could think of was sailing a boat I did not yet own, I found her.

"I have something you might be interested in," Bryan Winter of Winter's Sailing Center in Riverside, New Jersey, had informed me that morning by phone. "It's along the lines you've been looking for: traditional, seaworthy, all in all a good old boat." My spirits rose only to fall just as quickly on arriving at the yard and seeing the Bristol 27. She lay in her slip, much too tired and disheveled-looking for a lady her age. When I expressed my disappointment that it had a gas, rather than a diesel, engine, Bryan came to the rescue. "There's another boat that might fit your needs," he said, "although it's a bit more money."

Fitting name

It was the proverbial love at first sight, a 1990 Catalina named *At Last* — how fitting a name it seemed at the moment! — whose single owner and meticulous captain had been forced after much resistance to surrender his boat to time and age. For me the Catalina now seemed suddenly the most logical of choices, its shallow 2-foot, 10-inch draft appropriate for Barnegat Bay, its solid hull and dependable Universal 12 diesel more than enough to handle coastal cruising north to Long Island or south to the Chesapeake.

There was more than just logic to her appeal. I liked the apparent yet pleasing contradiction that, while a relatively new production boat, the hull retained some of the older classic lines; that the cabin's antiseptic white fiberglass interior was softened by an abundance of teak and brass; above all that I felt at home at the tiller.

"The temptation to finish up with the search, have my own boat, and set forth at last on life's newest adventure would at times overpower both reason and the constraints of budget."

Much like the younger man I once was who, when it came time to marry, prepared a long list of preferred attributes in a partner only to fall hopelessly in love with someone totally different, so was I now with my Catalina 25. And yet love her I did! There was a sea trial, negotiations, the thrill — I've never until now admitted this to anyone, least of all to my wife — of paying my first bill for a slip, and the changing of the name.

Sojourn was to wait for spring at Winter's boatyard on the Delaware where she would be recommissioned in early May for her first voyage, a 200-mile trip to her permanent home in Mariner's Marina in Barnegat, New Jersey. It would take three days and two nights, allowing for stopovers at Cape May and Atlantic City, to sail down the river and through the bay, around the cape and up the coast to Barnegat. We would leave the dock at midnight, the tide in our favor, would snake our way out the narrow channel with its blinking red and green lights, onto the deep, dark rolling waters of the river, a river destined to take us, at last, on that first voyage, that first sojourn.

For each of us the adventure is different, the challenge unique. Some set out across an ocean, others a bay. There are the few — a Robin Knox-Johnston, a Bernard Moitessier — whose dreams are grander, more daunting, but it is, nonetheless, for all of us the same call to freedom, the same need to follow one's bliss, to find fulfillment on a boat out on the water, a particular boat … our boat, no matter how modest.

We love our boats as men love their wives, their sweethearts. We see in them what only we can see, the quiet beauty of a line that eludes others, the perfection of a dream meeting reality. In the end it is the journey that counts, not the destination or how impressive the vessel. It is the awe-filled sense of achievement, of allowing ourselves to be who we truly are, men and women at sea, on a sojourn.

The Comfort Ratio

All you ever wanted to know — and much more

by Ted Brewer

***Tree of Life*, a 68-foot schooner with an exceptional Comfort Ratio rating.**

Webster's Dictionary:
scend (send), n. [< send, assumed to be a contr. of ascend], the upward heaving of a ship: correlative of pitch. v.i. to be heaved upward as by a wave: said of a ship. Also spelled send.

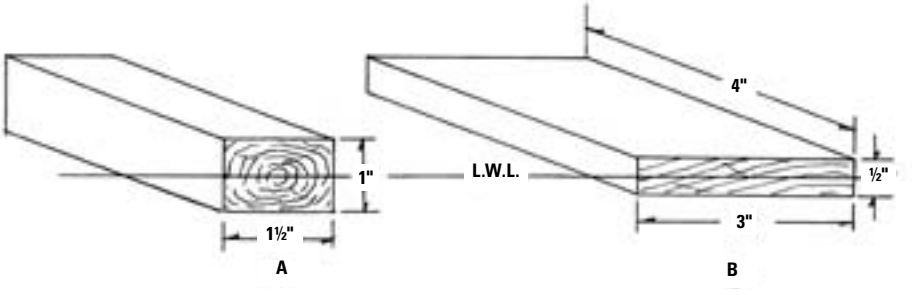
More than 20 years ago, I spent a few days at the Stevens Institute in Hoboken, N.J., attending the tank test of a new 100-foot motor yacht. The design was a pure displacement hull and on the narrow side — about 22-foot beam — so Paul Spens suggested that, along with powering tests in calm waters and miniature 9-foot seas, we do a rolling test. That sounded sensible to me and, as it was the client's money and he was there watching the tests with me, we quickly agreed to it.

The 6-foot-long model was fitted with instruments amidships on the centerline and on her "weather" rail and placed crosswise in the tank, tethered with lines to her bow and stern so she could roll freely. The wave maker was started and, as the waves, scaled to represent 9 feet from trough to crest, moved down the tank, the hull began to roll. The instruments then measured the G force, or speed, of acceleration developed by the scend and rolling as the wave passed under the model. Scientists had established that an alternating force of 1 G was sufficient to cause seasickness in the average person, so the test could determine if this particular hull would prove disconcerting to her passengers and crew in heavy seas.

In effect, motion comfort depends on the rate of acceleration of the human body. The faster that body goes up and down, the sooner that body is going to chuck it up. The test of the motor yacht proved to us that she badly needed bilge fins to slow the roll and, once these were fitted to the model, further tests the next day proved satisfactory.

I thought little more about it until a year or two later when a sailing magazine asked me to do an article for them. For some reason, I came up with the idea of writing a semi-humorous article about motion comfort. That, in turn, led me to the idea of a formula or calculation that would be fun and useful in comparing boats of similar size and type for motion comfort, just as we have Displacement/LWL, Beam/LWL, Ballast/Displacement, and Sail Area/Displacement ratios to compare the performance potential of sailing yachts.

Home "science experiment"



Make waves in your bathtub. Both wood blocks have the same displacement. Note how B, having twice the "beam," will be more stable and will have a quicker motion when a wave passes under it.

Not quite true

At first it may seem apparent that a floating body is going to scend x feet when an x-foot sea passes under it. But once you think about it, you realize that is certainly untrue. Obviously a floating body scends when a wave passes under it but, as in any object that is put into motion, the speed of the motion is going to be determined by the mass, or displacement, of the body and the amount of force acting on it. The lighter the mass or the greater the force, the faster the acceleration of that body and the higher it will rise in the brief time that the wave passes beneath it.

According to data I derived from Juan Baader's *The Sailing Yacht* and *Barnaby's Basic Naval Architecture*, a 24-knot (Force 6) wind, with a fetch of 200 miles will develop a sea close to 15 feet high, moving at a speed of about 35 feet per second, with 250 feet between crests. In essence, a 15-foot wave will come

along every 7 seconds, so an air mattress in such a sea will scend 15 feet in 3.5 seconds and descend 15 feet in the next 3.5 seconds. Greater mass slows the acceleration, however. A barge loaded with pig iron will move more slowly due to its inertia and may be lifted only five feet in that 3.5 seconds.

Conversely, due to momentum, it may fall six feet in the next 3.5 seconds before returning to its original floating waterline. Obviously the motion aboard that barge is going to be a great deal more stately and more comfortable than the whoop-de-doo aboard the air mattress! Once I grasped that concept, it was a simple step to decide that a figure that gave us the number of pounds to be lifted by each square foot of a yacht's waterline would be a good handle for comparing the motion comfort of different craft.

Mass is displacement

Mass, for purposes of the formula, is the displacement of the yacht in pounds. However, designers rarely give information on the waterplane (or waterline) area. Fortunately we can calculate that with reasonable accuracy from readily available information. Typically, the waterline area of a normal monohull sailing yacht is quite close to .65 times the waterline length, times the waterline beam, or .65 x LWL x Beam WL. Since designers rarely provide waterline beam, we'll have to use the maximum beam in our formula. This will skew the outcome a bit, certainly, but the result is close enough for all practical purposes.

"The faster that body goes up and down, the sooner that body is going to chuck it up."

However, as a wave rises around the boat, it's obvious that a hull with long bow and stern overhangs will pick up waterline area more rapidly than a short-ended yacht. To give some weight to the overhangs we can take the "length" in our formula as .7 LWL + .3 LOA. This will give a closer approximation to the actual length that the wave will affect. Now our waterline area formula reads .65 x (.7 LWL + .3 LOA) x Beam.

Beam also affects the yacht in more ways than simply adding to waterline area. Wide beam adds to form stability, so the beamy boat, having more initial stability than her narrow sister will always try to conform to the angle of the surface of the water. If that surface is the face of a steep wave, then wide beam will add to the acceleration at the rail as a beam sea passes beneath the hull. After the crest passes, and the boat is on the back of the wave, the speed of the fall at the rail will be faster and more upsetting to tender tums. To allow for this increased acceleration, I increased the the beam term in the denominator to the 1.33 power. The Comfort Ratio finally worked out as:

$$\frac{\text{Displacement (lbs)}}{.65 \times (.3\ \text{LOA} + .7\ \text{LWL}) \times B^{1.333}}$$

Sailboats almost always have a double-ended waterline shape, so, for powerboats or other craft with a submerged transom stern such as some motorsailers, the .65 should be raised to .70 to get a closer approximation to the waterplane area.

Out of curiosity and to prove to myself that it worked, I calculated the Comfort Ratio for a number of yachts of my design and those of other naval architects. The higher the number, the more pounds that must be lifted by each square foot of area and the easier the motion, of course. I found the results to be both interesting and quite in line with my expectations. A few of my boats are shown in Figure 1.

Note the difference between the world-girdling Goderich 35 and the Morgan 38. The Goderich has a slightly lighter displacement but has a solid edge in motion comfort, being shorter and narrower and so presenting less waterline area to a wave than the Morgan. Indeed, the Goderich should tend to be about as comfortable in a seaway as the larger and heavier Whitby 42. Perhaps that's why one Goderich owner rounded Cape Horn from east to west and enjoyed it so much that he rounded it west to east the next year and just kept on going around the world!

Figure 2, below, shows an interesting assortment of production yachts of widely assorted types by different designers.

The very low ratio of Bill Lee's ultra-light and speedy Santa Cruz 52 was a bit of a surprise. However, an acquaintance of mine circumnavigated on an Albin Vega a couple of years ago, so it's obvious that a Comfort Ratio of 20 is no hindrance

Figure 1

Tree of Life (68' schooner)	
68' x 58' x 19' x 130,000 lb.	64.7
Traveller III (61' ketch)	
61.08' x 48' x 16.08' x 71,000 lb.	51.9
Mystic (56' ketch)	
55.75' x 46.75' x 15' x 55,000 lb.	46.3
Sophia Christina (46' schooner)	
46' x 40' x 13.4' x 48,000 lb.	55.6
Whitby 42 (ketch)	
42' x 32.67' x 13.04' x 23,850 lb.	33.7
Goderich 35 (sloop)	
35.67' x 28.33' x 11.5' x 17,500 lb.	34.0
Morgan 38 (sloop)	
38.33' x 30.5' x 12' x 18,000 lb.	30.7
Amee (37' ketch)	
37.42' x 31.5' x 11.3' x 14,800 lb.	27.0
Douglas 31 (sloop)	
31.25' x 22.75' x 9.25' x 10,000 lb.	31.3
Mystic (32' sharpie)	
32' x 29.33' x 8' x 5,570 lb.	17.8
Nimble 30 (yawl or sloop)	
30' x 25.66' x 9.33' x 7,200 lb.	20.9
Chappaquidick (25' catboat)	
25.25' x 24' x 12' x 10,100 lb.	23.2
Cape Cod (22' catboat)	
21.58' x 20' x 10' x 5,850 lb.	20.4

Figure 2

Santa Cruz 52 (sloop)	
53' x 46.5' x 14' x 21,000 lb.	19.8
Valiant 40 (cutter)	
39.92' x 34' x 12.33' x 22,500 lb.	34.0
Crealock 37 (cutter)	
36.92' x 27.75' x 10.83' x 16,000 lb.	33.7
Morris 36 (sloop)	
36.25' x 29.5' x 11.58' x 15,602 lb.	29.0
Alberg 35 (sloop)	
34.75' x 24' x 9.67' x 12,600 lb.	34.6
Westsail 32 (cutter)	
32' x 27.5' x 11' x 19,500 lb.	42.5
Island Packet 31 (sloop)	
30.58' x 28.75' x 11.83' x 11,000 lb.	22.8
Nonsuch 30 (catboat)	
30.33' x 28.75' x 11.83' x 10,500 lb.	20.5
Bristol Channel Cutter (28' cutter)	
28' x 26.25' x 10.08' x 14,000 lb.	37.0
Fisher 30 (motorsailer)	
30' x 25.17' x 9.5' x 14,300 lb.	41.1
Albin Vega (27' sloop)	
27.08' x 23' x 8' x 5,070 lb.	20.1
Flicka (24' cutter)	
23.58' x 18.17' x 8' x 5,500 lb.	26.7

to either a solo voyager or a racing crew, as long as they are equipped with cast-iron stomachs. I did expect that the Bristol Channel Cutter would have an easy motion. Her ratio of 37 certainly bears that out in spades. It is no wonder the Pardeys fell in love with the type for their voyages.

It's also interesting to compare the figure for the Nonsuch 30 with my Chappaquidick catboat. They are of almost identical displacement and beam, but the greater length of the Nonsuch increases her waterline area. That results in fewer pounds per square foot for the wave to act upon and a slightly lower comfort figure as a result.

Finally, out of pure curiosity, I ran the figures on a few famous yachts from the past, three racing yachts and three circumnavigators shown in Figure 3.

Like the Albin Vega, John Guzwell's *Trekka* is another small and corky boat that carried her one-man crew around the world safely. *Wanderer III* gets a remarkably high figure for a small yacht and, of course, she took the Hiscocks over many thousands of miles of blue water in both sedate comfort and safety.

It becomes obvious that higher-rating yachts have one or all of the following features: short waterline, narrow beam, heavy displacement. The incredibly high figure for *Endeavour* is a result of her extremely narrow beam and short waterline, despite the fact that she has quite a moderate Displacement/LWL ratio of 241.3. Conversely, low ratings develop from long waterline, wide beam, and light displacement. As a general rule, smaller yachts have higher Beam/LWL ratios in order to obtain form stability. This tends to lower their comfort factor. On the other hand, older yachts, such as the Alberg 35, were designed in the era when short waterlines and narrow beam were *de rigeur*, so she gets relatively higher marks for motion comfort.

However, we must not compare apples to oranges and claim that the 68-foot *Tree of Life* would be less comfortable in heavy seas than the 30-foot *Wanderer III* simply because her Comfort Ratio is .7 lower. I feel safe, though, in saying that *Wanderer III* would have a much easier motion in heavy seas than my Nimble 30!

Figure 3

Endeavour (J-class sloop)	
130' x 84' x 22' x 320,320 lb.	81.8
Windward Passage (73' racing ketch)	
72.83' x 65.83' x 19.33' x 80,000 lb.	35.0
Intrepid (12-Meter sloop)	
64' x 48.75' x 12' x 59,850 lb.	62.9
Spray (Slocum's 36' yawl)	
36.5' x 32.17' x 14.17' x 36,300 lb.	48.7
Wanderer III (30.5' sloop)	
30.5' x 26.5' x 8.42' x 20,160 lb.	65.4
Trekka (21' ketch)	
20.83' x 18.5' x 6.83' x 3,125 lb.	19.3

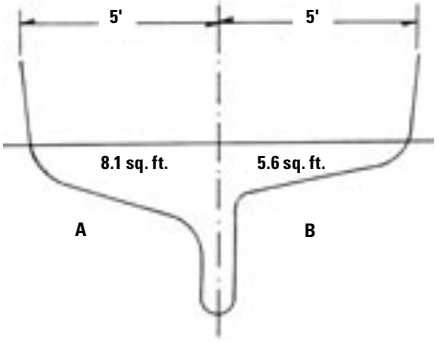
However, nothing is free, and it is obvious that the same factors that detract from motion comfort will, by and large, add to performance. I have no hesitation in saying that the fin-keel Nimble would handily outperform *Wanderer* in average weather conditions, largely due to the Nimble's much lighter displacement, slightly greater beam, and lower wetted area.

There are other factors that affect motion comfort and which cannot be covered by any simple formula. For example, a yacht with a very light rig (carbon fiber spars?) will lack the inertia of a sister with a heavy rig, so she may tend to roll more quickly. And yachts with great form stability derived from hard bilges and shallow deadrise will react faster than a boat of similar displacement and beam but with slack bilges, deep deadrise, and full garboards. The Comfort Ratio does not pretend to take these factors into account. Even given all that information, no formula could.

As I mentioned before, a vessel with a high rating, like that barge full of pig iron, will scend more slowly as a wave passes beneath her and so will not rise as high as a yacht with a low rating. Of course the speed of her descent will depend on how quickly that wave is moving but not having risen as far in the first place, the boat with a high rating will not have as far to fall. On the other hand, it is quite possible that a low freeboard yacht with an extremely high rating may scend so slowly that she is swept by the seas like a half-tide rock, as was many a World War II destroyer on the stormy North Atlantic. That can certainly be disconcerting, if not uncomfortable!

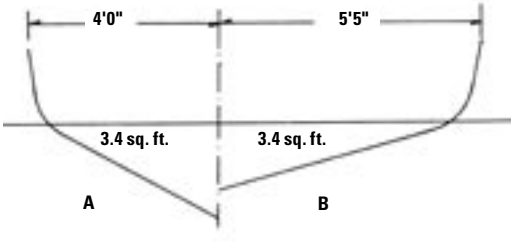
In truth, I first developed the Comfort Ratio as a bit of a spoof at those who were entranced by the various performance ratios. However, it has a definite basis in fact despite its limitations. While it cannot consider the effects of different underwater hull forms, it can provide a probable assessment of the motion comfort of yachts of reasonably similar size and type. For this reason, and to my considerable surprise, it has been widely accepted by others in the field of small-craft design, although I'm sure that the Europeans use metric figures to compute the comparative results. Whether Imperial or metric, the Comfort Ratio provides a useful rating of a yacht's upchuck potential for comparison purposes, and it can be quickly calculated with the numbers that are readily available for most designs. Have fun with it.

The effect of displacement on motion comfort



These two yachts are 32 feet LOA, 26 LWL. With a prismatic coefficient (Cp) of 0.55, A displaces 14,825 pounds, and B displaces 10,250 pounds. A has a Comfort Ratio of 38.1, compared with B's of 26.3.

The effect of beam on motion comfort



These two boats are 30 feet LOA, 24 feet LWL, and each displaces 6,000 pounds. However, A has a Comfort Ratio of 23.4, compared to B's very low 14.9.

The miracle of the tides

Simple ebb and flow results from highly complicated physics

by Don Launer

Poets and ancient cultures have long compared life itself with the tides. Historically, a flood tide has been considered an omen of good fortune, and an ebb tide has been looked at with foreboding; in fact along the North Sea coast of England it was believed that most deaths occurred at ebb tide, as when Dickens wrote: "He's a-going out with the tide."

In A.D. 77, Pliny described tides in his *Natural History*, but it wasn't until centuries later that this phenomenon was explained more fully when Sir Isaac Newton presented his Theory of Gravitation in his book, *Principia*, one of the greatest scientific works of history.

The earliest known tide table was compiled by the monks of St. Albans, near London, in the 13th century. It predicted the tides for each day of the moon's age for the waters at London Bridge. This tide table, or "rutter," copied by hand, was made available to the mariners who navigated the Thames.

Now, tides are no longer wrapped in mystery. They are created chiefly from the gravitational effects of the moon and the sun, as well as from atmospheric pressure and wind. Even though the sun's mass is 26 million times that of the moon, the moon is 400 times closer, so it is the major force in creating tides. The moon's gravitational pull is more than two times that of the sun, so our tides usually "follow the moon," but are slightly modified by the gravitation of the sun.

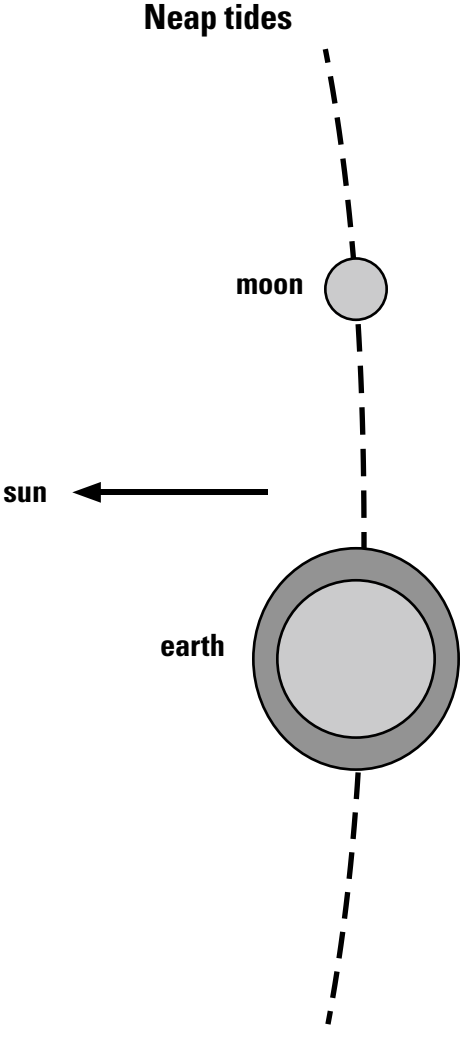
In most parts of the world, the gravitational effects of the moon and the sun create two high tides and two low tides every day (or, to be more accurate, every 24 hours and 50 minutes). These are semi-diurnal tides. One of these semi-diurnal high tides each day is when the moon is overhead and the other is when the moon is on the opposite side of the earth.

One tide change

There are a few places on earth, such as parts of the Gulf of Mexico, where there is only one tide change each day, due to local coastal and bathymetric configurations. These are diurnal tides. Mixed tides ("diurnal inequality") are an amalgam of the two, where one is usually stronger than the other. Accompanying these vertical rises and falls of water are various complex lateral movements, known as tidal currents. A current flowing toward shore or upstream is called a flood current; and one flowing away from land or downstream is an ebb current. During the period of reversal between a flood and an ebb, we have slack water.

The moon rotates around the earth so that it passes over the same longitude about once every 24 hours, 50 minutes, and 28 seconds. This means that at any given location, celestial tides, those created by the moon and sun, occur 50 minutes and 28 seconds later every day. If you see high tide at 9 a.m. Monday, you can expect a high tide to occur about 9:50 a.m. Tuesday, at about 10:40 a.m. Wednesday, and so forth.

Due to several variables — the shape of continents and estuaries, the depths of the sea beds, the frictional drag between the water and the earth, the Coriolis effect, changes in the moon's orbital plane, and so on — the difference in time from when the moon passes a certain point's longitude and when that point experiences high tide is called the lunitidal interval or high-water interval. The low-water interval is the time difference from the moon's meridian crossing until the next low tide.



Neap tides occur when the moon is in its *first* or *last quarter* and produce smaller ranges of tides because the sun and the moon are attracting the earth's waters at right angles to each other.

"Windy conditions can also dramatically affect large bodies of inland waters, such as the Great Lakes."

Spring tides

When the sun and the moon are in line with the earth, which happens at the time of a new moon or a full moon, the gravitational pull is greater than average, and so-called spring tides occur. In this case, spring does not refer to the time of year but rather the welling-up of the water, as from a spring. When the sun and the moon are at right angles to each other with the moon in its first or third quarter, the gravitational pulls of the moon and sun tend to cancel each other out slightly, and we have less than average, or neap tides. Near the times of the equinoxes (March 21 and September 22), the spring tides are usually larger, and near the time of the solstices (June 21 and December 22), spring tides are usually smaller than normal.

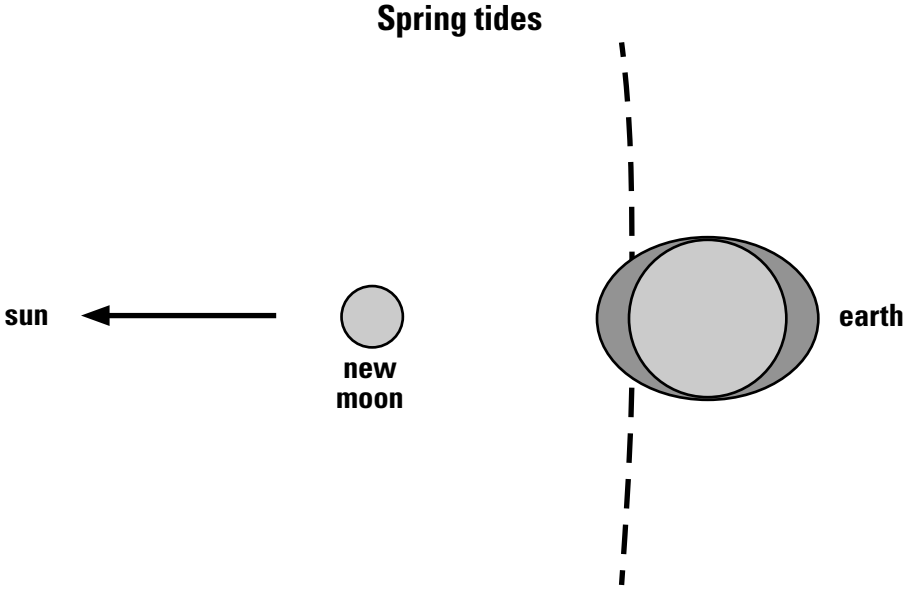
The moon's orbit around the earth is not circular, but like that of most heavenly bodies, elliptical. So the moon's gravitation is stronger at its perigee (when closest to the earth) than at its apogee (farthest from the earth).

Also, the moon's orbit around the earth is inclined in relation to the earth's equator. Its declination is over the southern hemisphere part of the time and over the northern hemisphere part of the time and only directly over the equator twice a month, at which time the two daily high tides will be about the same height. When north or south of the equator, these daily tide heights will be different (semi-diurnal inequality).

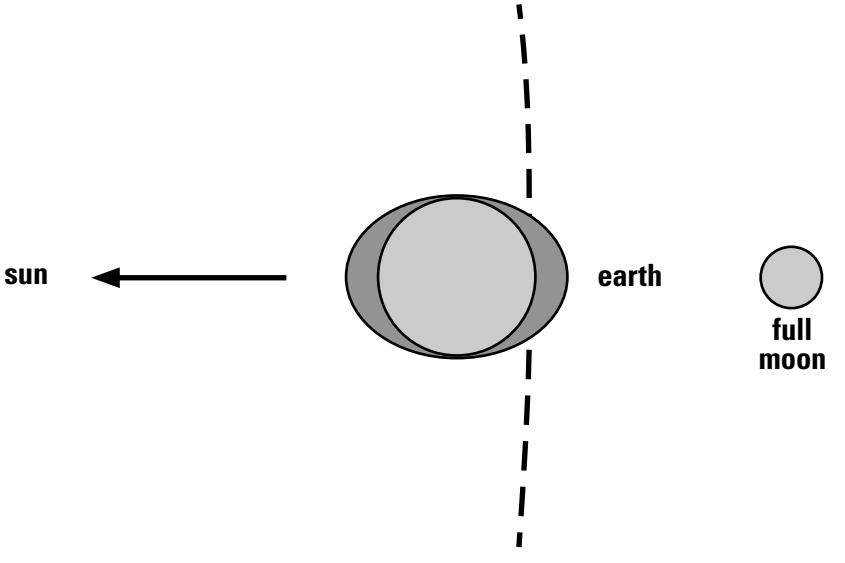
Orbital tides

Although this scenario is one that most people know well, it actually becomes more complicated. We can imagine the earth and moon to be traveling around the sun as a single, combined mass. Visualize a barbell, with a heavy weight on one end of the bar (the earth) and a small weight on the other end of the bar (the moon). See illustration on Page 32. The bar connecting the two represents the gravitational attractions of the earth and moon. Now, if we go to pick up the barbell with one hand, we will have to do it with our hand on the bar very close to the heavier weight. This position is the center of mass of the barbell's two weights. If we were able to fling the barbell through the air in a rotating motion, we would find that this center of mass follows a smooth trajectory, while the heavy and the light ends of the barbell rotate back and forth across this smooth trajectory — rotating around the center of mass. The same holds true for the earth/moon combination. It is this center of mass that rotates in a relatively smooth orbit around the sun. Thus, since the earth and moon are rotating around this center of mass, it means that both the moon and, to a lesser extent, the earth, swing inside and outside of the orbit of this center of mass. So instead of the earth rotating around the sun in a nice, neat ellipse, as we like to think, it actually swings inside and outside this ellipse with the phases of the moon.

Now visualize a car going down the centerline of a highway. If that car swerves back and forth across the centerline, the passengers will be



Spring tides are produced when the sun and the moon are aligned, creating the greatest pull on the ocean's waters. Spring tides, which occur during the times of the full moon, below, or new moon, above, generate the largest range between high and low in the monthly cycle.



thrown from one side to the other by centrifugal force. This same centrifugal force throws the water back and forth across the face of the earth as the earth swerves back and forth across the smooth orbit — adding an additional factor into our previously simple tide concept.

Intracoastal variations

Intracoastal tides (those tides occurring inland of the coastline) become even more complex. The mainland of the East and Gulf coasts, from New York to the Mexican border, is protected by barrier islands, broken intermittently by narrow inlets to the sea. Inside these barrier islands, on intracoastal waters, the tides are considerably less amplified than those on the ocean side of the barrier islands. This is because the narrow inlets limit the exchange of water between the ocean and the intracoastal bays, rivers, and sounds. This limited water exchange causes low tides on the inland bays that are higher than low tides in the ocean and high tides that are lower than the ocean high tides. This is because at high tide the ocean tries to fill up the inland bays through the narrow inlets, but before it gets a chance, the tide has changed and begun to drop.

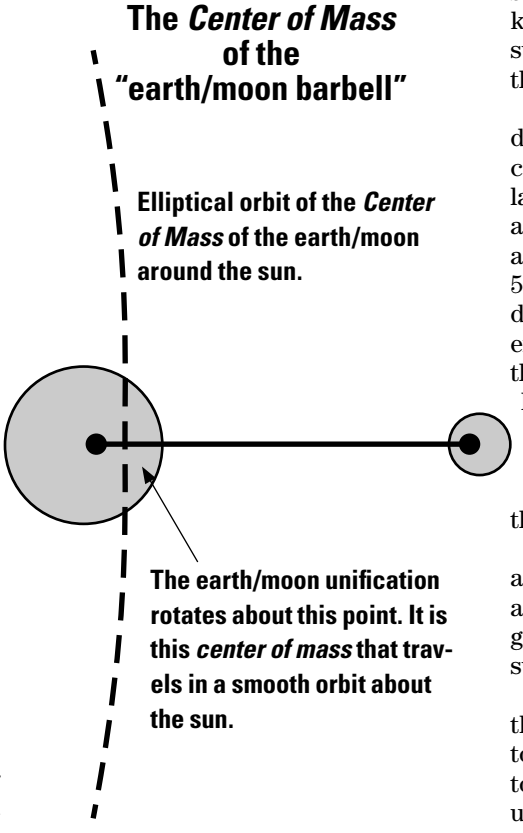
The same thing happens at low tide when the water rushes out of the bays but the ocean tide changes before this can happen completely. Hence, the tide variations in these intracoastal waters never approach those on the ocean side of the islands. But as an ocean high tide starts decreasing, it is still higher than the waters in the back bays, and water keeps flowing into these bays. Thus, the times of high tides in intracoastal waters lags behind those for the ocean. The same scenario also holds true for low tides.

Atmospheric tides

The tides created by the gravitation of the moon and sun are known as celestial tides, as opposed to those tidal effects created by atmospheric pressure or the wind. Printed tide tables, as well as tide computer programs, allow the celestial tides to be calculated years in advance. One of the things these tables and programs can't show us, however, is the effect of atmospheric pressure and wind on the tides — and both of these influences are of great importance to the boaters and residents of coastal areas.

"One of the things… tables and programs can't show…is the effect of atmospheric pressure and wind on the tides — and both of these influences are of great importance to the boaters and residents of coastal areas."

Storms, hurricanes, and nor'easters pose special problems along coastal shores. During an extended blow, other factors affect the tides. During a long blow (12 hours or more) an ocean current is produced by the wind. The rule of thumb is that this current is about 2 percent of the wind speed, so that during an extended blow of 60 mph toward a shore, a current of 1.2 mph is set up. When this current is directed toward the coastline, it causes the water to mound up against the shore, creating higher-than-predicted tides.



This mounding effect is very real, with the ocean water level along the shore much higher than it is many miles out to sea. On top of this mound of water are the unusually high, wind-created waves. The height of these waves is directly related to the wind speed, its duration, and the distance that these winds are blowing across unobstructed water, or the fetch. This mounding up of the water along the coastline during a storm, created by the winds and the current, forces the ocean waters into the inlets between the barrier islands. Even during celestial low tide, the height of the ocean water, along with the wind, does not allow water to escape from the bays. The next ocean high tide again adds water to the bays until, after a series of high tides, the water level in the bays approaches that of high tide in the ocean.

Unusually high

Also, in a hurricane or nor'easter, the low pressure in the eye can suck up the ocean into unusually high tides, much as soda is sucked up through a straw. The combination of the mounding up of water along a coast due to the wind and the additional increase in height due to the water being sucked up into the low-pressure eye is known as the storm surge. This storm surge is often more devastating than the damage caused by the wind.

But these wind-produced tides don't affect just ocean waters. Windy conditions can also dramatically affect large bodies of inland waters, such as the Great Lakes. In October 2001, a prolonged southwest wind of 30 to 50 mph, blowing across Lake Erie, dropped the water level at the west end of the lake by about 5 feet, while the water at the eastern end of the lake was raised by the same amount. Records show that on Lake Erie there has been up to an 11-foot difference caused by the wind, between the lake levels at Buffalo and Toledo.

Finally, celestial tides don't only affect water levels. The earth's crust also rises and falls in response to the gravitational effects of the moon and sun.

For sailors, the understanding of these concepts not only contributes to our safety on the water but also to the sense of our tiny place in the universe.

by Steve Bunnell

An *Improbable* conversion

Famous wooden ocean racer now modified for shorthanded cruising

IMPROBABLE IS THE WRONG NAME FOR this boat. *Logical* would be better, or *Synergy*, or *Refinement*. I wasn't thinking about names when I first spotted her at Seattle's Shilshole Marina. I simply responded to the boat's great lines, clean open decks, carbon-fiber spinnaker poles, jillions of winches, no real cockpit… all the parts of a serious raceboat. But she was made of wood! I couldn't help but stroll over and meet owner Len Schwab.

Len had singlehanded his 42-foot boat down from Friday Harbor in the San Juan Islands to have covers made for the two beautiful carbon-fiber spinnaker poles chocked onto *Improbable's* deck. The twin poles are the latest refinement, the latest tweak in Len's ongoing effort to improve his singlehanded sailing. Carbon fiber, of course, because there is little lighter or stronger, and Len wanted poles that he could manage alone. Twin poles, notice, because he's worked out a two-pole spinnaker-jibing system he can pull off all by his lonesome with the boat charging downwind.

At the time, Len was 66 years old. His boat was 31 years old. They'd been together since 1976 when *Improbable* retired from a successful ocean-racing career that included an overall win in the 1971 Fastnet Race. This makes sense since the boat was designed for and does best in heavy weather. Built in 1971 as an all-out ocean racer with design input by the Bay Area racing's who's who ("Commodore" Tomkins, Skip Allen, Tom Wylie, and Ron Holland), *Improbable* proved to be a great ocean racer and the breakthrough design her creators envisioned. She set a record in the heavy-weather 1971 Miami-Montego Bay race and won her class in the 1972 Transpac. Those, plus other victories, landed her in

***Improbable*, a 42-foot wooden racer designed by Gary Mull, becomes a singlehanded sailer with the refinements made by owner Len Schwab. At right, a hydraulic autopilot with the power to work in heavy seas.**

Len has worked out a safe procedure for solo spinnaker launch and recovery. He also uses a jackline system with dual tethers so he's never unclipped.

Sailing magazine's 1993 "100 Greatest Sailing Yachts in North America," the only Northwest boat to be included in the "modern racers" category.

Intelligent modifications

It's interesting to take a closer look at the intelligent modifications Len has made for singlehanded or shorthanded cruising, a situation that challenges many of us. An engineer by profession, Len takes a very practical, solid approach to so-called shorthanded modifications. He has a Benmar pilot steering system on *Improbable*, so it's not likely to fail. Adapted from hydraulic units used in fishing vessels, *Improbable's* autopilot has the power to push a 19,000-pound boat around in heavy seas. There are no little plastic gears to explode, just good old hydraulic fluid squishing around inside fat hoses. It's an impressive system.

From the beginning, Len saw the need for the robust autopilot system. He has maintained the same simplicity and ruggedness in all the other modifications he has made to his beloved vessel. A review of one man's visions may stimulate the dreams of others.

But first a bit about the boat. Designed by Gary Mull in 1970 to goals generated by a racing syndicate, *Improbable* is far from the usual production vessel. Nonetheless, she has proved to be a first-rate ocean-cruising vessel precisely because she was designed to go fast under difficult conditions. She was the antithesis of the customer-pleasing assemblage of head-to-bed specifications around which naval architects try to wrap a successful sailing vessel. Stepping below on *Improbable*, the immediate impression is "Gee, this is a working boat . . . a stripped-out ocean voyager." But a second look reveals that it's all there from bed to head to nav station and galley. It's just all in one "room," and it isn't fancy.

"Len modified the cockpit until it had a depth of only 6 inches. Why? He never sat in it, and eliminating the foot well created a usable aft cabin."

Dave Allen, a top San Francisco Bay area sailor, and his syndicate cohorts first planned a 38-foot ocean racer. When their planning efforts did not gel, Dave took many of their parameters to young Gary Mull and asked him for a similar ocean racer but one with standing headroom. In his words, Gary's 42-foot response featured a " . . . fairly fine bow and good stability for windward work, and at the same time (would) maintain a long, light hull for off-wind performance." He configured a deep, stern-mounted, tiller-controlled rudder for maximum steering force.

The design called for a small, shallow cockpit with a low deck box surrounding the mast for the stowing of halyards and control lines. A fin keel was called for, hanging under a narrow hull with a deeper vee than today's ocean racers carry.

Weight concentrated

Beam came out at 11 feet, waterline length is 37 feet, and draft is 6 feet 11 inches. Sail area is around 830 square feet, balanced by 8,500 pounds of ballast. Weight was concentrated mid-vessel with the engine just aft of the mast and the top section of the steel keel holding diesel fuel. To further save weight, the boat was constructed of cold-molded, triple-laminated New Zealand kauri wood over 4-inch laminated kauri frames. Because they were experts in such things, and because the wood was there, Dave Allen had *Improbable* built by the T. K. Atkinson yard in Auckland, New Zealand (remember, this was before the world knew much about New Zealand sailors).

Final displacement came out to just 18,000 pounds (very light for its day). Len figures she displaces about 19,000 pounds today. The hull struc-

Using a deck-circling line led to the tiller, at left, Len Schwab can steer from anyplace on the working deck. The winches are designed with hefty and convenient below-deck driveshafts, at right, linking winch handle to winch.

ture consists of three thin kauri-wood skins wrapped around longitudinal stringers. Hull thickness is 1 inch. Len has since glassed the hull for extra strength and reduced maintenance. There are two sizeable watertight bulkheads forward, joined to stringers that create a strong girder arrangement. The hull has remained stiff and rot-free, a testimony to the design, the builders, and the dense kauri wood, which is now almost a protected species — no logging, no exporting.

The small cabin makes for an open deck space which accommodates 14 spinnaker, sheet, and halyard winches. The setup testifies to the power of the lever. Len doesn't have to manhandle much. *Improbable* even has a unique set of linked winches that allow sheet trim from the opposite side of a heeled deck. The winches are designed with below-deck driveshafts linking winch handle to winch. They are hefty, powerful, and convenient. Len modified the cockpit until it had a depth of only 6 inches. Why? He never sat in it, and eliminating the foot well created a usable aft cabin. The autopilot steers; he moves around adjusting or goes below to eat, rest, and sleep. Course adjustment is often done with a simple joystick.

Rudder redesign

In his quest for strength and efficiency, Len has redesigned the big rudder three times. By the time I met him, he thought he'd finally got it right. He says *Improbable* goes to windward very well in heavy weather, chunking along at 7 knots even in big seas. When not sailing under the autopilot, Len can steer from anyplace on the working deck using a deck-circling line led to the tiller.

Len has worked out a safe procedure for solo spinnaker launch and recovery. He doesn't hesitate to fly the big kite even in blustery conditions. The boat tracks so well, the autopilot steers so well, and the dual spinnaker poles jibe so easily, that Len has been known to drive her solo downwind at speeds up to 12 knots.

Sails and steering aren't the only controls that Len has modified. He has put in a thoughtful system of central pad-eyes that enable him to move about the boat firmly tethered at all times. A dual line clipped to his harness means that he is never unclipped, and the short jacklines protect against projectile falls as well as possible man-overboards.

> "Improbable *retired from a successful ocean-racing career that included an overall win in the 1971 Fastnet Race.*"

Len's engineering training certainly aids his modifications of *Improbable*. Just as important is the wisdom he has gleaned from his considerable sea time. He began sailing in 1964 in southern California. Soon he purchased a Baltic 29 and got in some offshore sailing before taking a job with Boeing, in Seattle, where he purchased a 38-foot wooden ketch and moved aboard. By the early 1970s he was off with his three young sons for what would be a three-year cruise down the Atlantic seaboard and through the Caribbean aboard a 39-foot wooden cutter. Then to San Francisco, where what should catch his eye but the mighty *Improbable*. He bought the boat and returned to Seattle where the boys once again attended school.

Singlehanded passages

Since buying the boat, Len has singlehanded up and down the West Coast several times when he moved between various aerospace firms. He doesn't hesitate to take the old war horse out solo, even when conditions are a bit blustery. He is confident about the boat and confident in his modifications. When sea conditions prohibit sailing, Len can set *Improbable* up with a small backed staysail to lie hove-to, a configuration he's used successfully in more than 60 knots of wind.

For good old boaters, the *Improbable* message is twofold. First, well-built former ocean racers can make great (but not fancy) cruising vessels. And second, even big, powerful, 42-foot vessels can be set up for singlehanded control. More than money, it's the proper application of physics that counts. Don't hesitate to modify your own boat. Keep your eyes open to other setups, let yourself dream new configurations, test modifications in mild conditions, and always think safety, safety, safety. In this world of high-tech complexity, there is much reward in the straight-ahead physics of boat rigging. We can actually see the need, dream the solution, and configure the mechanism, and almost feel like we've got a bit of control in an increasingly technical world.

Looking for a better way

One sailing family's answer to the dinghy problem

by Kim Ode

Cursing while sailing among the Apostle Islands never seems wise, not with a couple hundred feet of melted glacier beneath our keel. Yet there I was, blaspheming into a stiffening wind coming off Lake Superior as it once more flipped our trailing Zodiac.

We've never liked towing an inflatable dinghy. The slosh pi-slosh of its progress adds an extra layer of noise, and its presence mars the clean angle of a diminishing wake. I can never seem to drain all the water that splashes in. An inflatable is often gaudy, butt-ugly, or silvered with duct tape. It leaks. Paddling one is like steering a bathtub. And sometimes, it flips. Arrrghh, indeed.

By the time we'd rounded the north end of Stockton Island, I had tugged and manhandled ours into subservience while my sailing partner was fully occupied with actual sailing. By the time we set anchor in Julian Bay, we vowed that, should the day come when we'd move from chartering to boat ownership, we'd find a better way.

The day finally came and, for us, the better way has proven to be a cedar-strip nesting dinghy. It's beautiful, glides for yards on a single oar stroke, and stores efficiently. But most of all, it's light. Our 9-foot dinghy weighs 60 pounds, compared with inflatables that range up to twice that heavy.

"…for us, the better way has proven to be a cedar-strip nesting dinghy. It's beautiful, glides for yards on a single oar stroke, and stores efficiently."

And because it is a nesting dinghy, you're never lifting the whole thing at once, only half at a time. The emphasis on weight was due to my husband's back surgery, but really, why should any of us lift more than we have to?

It was a given that my husband, John, would build the dinghy. He loves cedar-strip construction, having built three canoes.

Personal experience

"You end up knowing every nook and cranny," he says. "It's personal. You know you've created something. To me, it's more of a boat-building technique." Then he smiles: "Plywood doesn't get the comments. And let's face it, sometimes you want something that isn't available locally."

Our dinghy was the second John built. The first was an 11-footer for his brother, Paul, thus continuing a long tradition of experimenting on a younger sibling. (*See the article about these two brothers and their Cape Dory Typhoon refits in the November 2000 issue. –**Ed.***) Paul, who sails a Cape Dory 33 out of Grand Marais, Minn., was willing, and research began into a plywood design by Dave Gerr.

John took the best of Dave Gerr's work with proportion and, combined with his knowledge of cedar-strip technique, redrew a plan for an 11-foot nesting dinghy. The challenges were apparent from the first.

A cedar-strip boat is built in three distinct stages and starts out upside down. First, plywood shapes are cut and assembled on a form, which looks like the remains of a particularly successful feast. Then long, inch-wide strips of cedar, ¼-inch thick, are stapled to the ribs to make the actual shell. Finally, fiberglass cloth is laid on the outside and inside and coated with epoxy.

Applying the cedar strips is the most time-consuming step, but also the most time-forgiving. Each must be glued to its neighbor and then stapled to the form. Each edge must be shaped with a plane to fit the curve, which eventually narrows to a slim kayak-shaped slot for the last piece. You can do as many or as few strips at a time

as you please. "I like to do about four strips, then walk away," John says.

Sanding aplenty

After the thin shell of the boat is completed, all the staples must be removed. Then the sanding begins, in lengthy sessions with the random orbital sander, evening the edges of each strip and smoothing gaps with epoxy filler. "Sanding the hull, shaping the hull — you can get quite obsessed with it, although you don't need to," John says. Gaps between strips, and unevenness from sanding too aggressively, are more of a cosmetic problem than a structural one. The strength of the boat comes from the epoxy and the fiberglass, which act as the ribs of the dinghy and as its waterproof barrier.

Unfortunately, the fabric doesn't take strong angles very well. This isn't a problem in canoes, which are all lovely arcs and curves. But this dinghy design has right angles where the bow, stern, and come-apart transoms join the hull. The cloth, while seeming to mold to the turn while wet, has a tendency to pull away from the angle as it cures, forming a void and losing strength.

By applying a fillet of epoxy paste — about ¾-inch in width — along the joint, the builder can soften the angle just enough to enable the fiberglass cloth to be laid with a consistent bond to the surfaces. The bead of epoxy — actually a blend of epoxy resin and colloidal silica — also strengthens that joint.

"Our dinghy fits on the cabintop over the skylight, resting on blocks of closed-cell foam and strapped to the handrails. This lets us leave the skylight slightly open for ventilation in the rain and also while we're gone."

For all the challenge of fussing and fitting, John finds fiberglassing the most enjoyable part of the process. "Fiberglassing can be kind of a social thing, someone mixing the resin, someone coating. It needs to be done in one session and in a place that's reasonably warm and dry," he notes. The epoxy transforms the lumpy, opaque cloth into a clear sheath of glass, magically revealing the warm beauty of the wood.

Parts remain

One difference between building canoes and dinghies is that a canoe ultimately is removed from the entire form. In a dinghy, parts of the form remain in the boat, serving as the bow, the two center bulkheads, and the transom. Instead of using staples to attach strips to these sections, John used stainless-steel nails in the first boat and bronze ring-shank nails in the second. Slightly recessing the nails into the wood allowed him to sand over them.

As he applied the long strips, John cut each in half along the joint of the two bulkheads. He likes to apply long strips to minimize the seam and to maintain the flow of the wood grain the length of the boat. Later, after he applied the fiberglass, the boat would be cut again along that line into its separate sections.

Once the boat was "cracked" and removed from the form, each half could be set on end and stored out of the way between finishing sessions — nice if your car has been banished to the driveway all this time.

Before that moment, though, there is sanding . . . endless sanding. A random orbital sander is essential along with a good dust-control system. Finally, though, the first dinghy was smooth and halved, and John could install the thwarts, build the gunwales, and add the skeg before finishing it all with good-quality marine varnish.

The latch system that locks the two halves together couldn't be simpler and comes essentially from Dave Gerr,

***Sybil*, an 11-foot nesting dinghy, facing page, built by John Danicic for his brother, Paul. The dinghy is stowed on the cabintop of Paul's Cape Dory 33, *Femme du Nord*.**
The first of two dinghies built by John Danicic, *Sybil* gets a test on a Minneapolis lake. Mark Bowker, John's nephew, prepares to join the halves, at right.

The 11-foot dinghy is checked for its ability to nest, above. John notes that the latching bulkhead is a critical part of the design: "I built the matching bulkhead section and the brass latches before I built the boat. Getting this bulkhead to fit together properly is the key to this project. Building it first, putting it together and then laying the strips and fiberglass over is the only way you can be assured that things will match up. I made threaded brass handles for the connecting bolts. I found that they were easier to turn than the Dave Gerr-designed sliding pins."

who specifies using bronze for the entire latching system. With a jigsaw, John cut the keyholes from plate brass and used hex bolts instead of Dave's method of welding discs to rods. "I know, I know," John says. "There are people who will berate me for using brass, but it's a lot easier to find than bronze. For now, we only intend to sail in fresh water. If we ever want to go to the ocean, that will be one of the things — on a huge list of things — that we'll have to do to prepare for salt water."

Two into one

Assembling the halves works like this: once both sections are in the water and secured to the boat with lines, you climb down into the bow and guide the stern section, with its protruding bolts, into the "keyholes" of the bow plates. Buoyancy causes the stern to bounce up and be held in place while you tighten the latch bolts.

Of course, this was all theory until we gave her a test float on Lake Harriet in Minneapolis. A quick dip to lock the notches, and she was one . . . more easily than we'd dared imagine and more easily than on land.

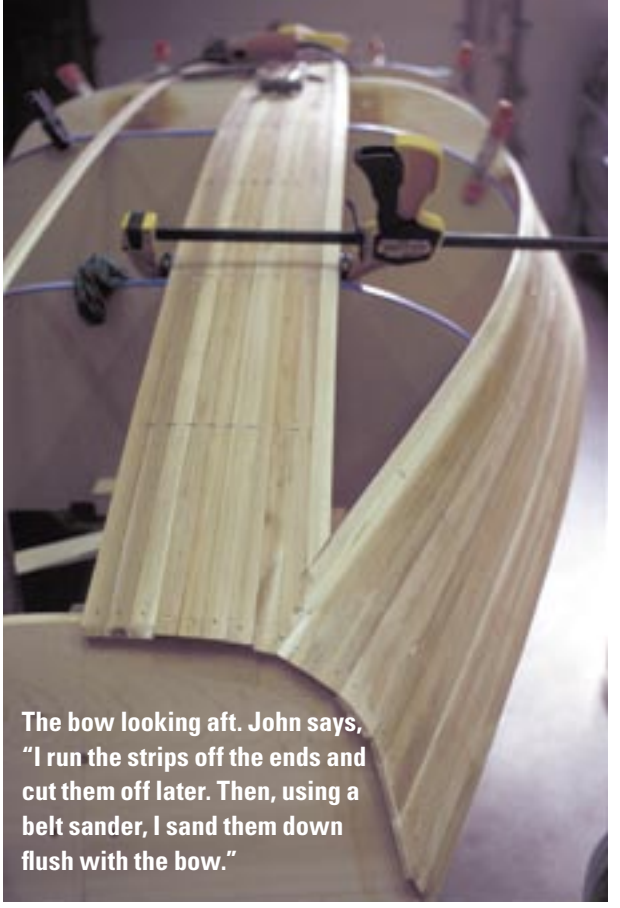
The first oar stroke sent her 10 feet. Stroke, glide. Stroke, glide. Success! Brother Paul was happy, and John was eager to try building another. The reason to do so finally came. With a

The forms in place atop the strongback. The center come-apart bulkhead is constructed first, complete with hardware, and attached as one unit. The boat is essentially built whole and then cut in half. It is good to leave a bit of space between the bow and stern bulkheads to accommodate the saw blade when cutting the strips. It is very important to get the dinghy forms straight and parallel before you start to strip. Any mistake here will be amplified later on. Take your time and measure the distance between forms on both sides to make sure they agree.

check for a Cape Dory 36 deposited in someone else's bank account, John set about refining his original design. Paul's dinghy can be set afloat and hauled in by one person, but just. John wanted to see how small he could go, yet retain the functionality to ferry a family of four from ship to shore.

He reduced the original plans by 18 percent, to build a 9-foot boat. For the first boat, he'd used solid cedar for the bulkheads, stem, transom, and thwarts. But he found it difficult to keep those parts from warping so he switched to ¾-inch mahogany plywood. He also added a footrest and glassed in a stiffening rib in the stern section to keep the boat from twisting when rowed.

Instead of using plastic ½-inch hose for a fender, he screwed into the gunwales a length of braided rope, which looks spiffier. Finally, he refined how the removable thwarts are stowed.



The bow looking aft. John says, "I run the strips off the ends and cut them off later. Then, using a belt sander, I sand them down flush with the bow."

As for cost, the biggest expenses were the cedar lumber, epoxy, and glass. You can be outrageous or basic with what you use for gunwales or what you choose for oarlocks. Specifically, the 11-foot dinghy cost $1,093 when it hit the water. Our nine-footer cost $724. Any typical home workshop will have the tools required for this project. But you can never have too many clamps.

John didn't punch the clock while doing this and therefore can't say exactly how much time it took, but he's always said he'll build one for anybody for $3,000, and that's working cheap. Figure it out from there.

Regarding upkeep, you'll likely find that after a summer of going ashore, the bottom of

Continued on Page 41

"The first oar stroke sent her 10 feet. Stroke, glide. Stroke, glide. Success!"

Down for good

"I wanted the oars and seats stowed on the dinghy so there's no need to climb back and forth," he says. "When you're down in the boat, you're down in the boat for good."

Our dinghy fits on our boat's cabintop over the skylight, resting on blocks of closed-cell foam and strapped to the handrails. This lets us leave the skylight slightly open for ventilation in the rain and also while we're gone. Paul does the same and has a foredeck option as well. Because all boats are different, John stresses taking careful measurements of the deck space available before beginning your plans.

The stripping coming to a conclusion on the starboard side, below. John notes, "I like to do as many straight strips as I can. When they start to curve too much, I start at the opposite side and work up or down toward the others. When they meet, I alternate up and down as the space gets smaller. The strips are shorter, and you can use the cutoffs and short pieces to fill in. Just make sure that you do the same pattern on both sides of the boat for a balanced look. This is like laying tile. You can do it messy or create a mosaic pattern with different wood that illustrates the history of the world, if you want. The wood strips are there to hold up the fiberglass cloth." When the stripping is done, he points out, "It's time for filling and sanding and sanding and sanding." The builder does not need to get overly fussy with filling gaps and holes. This does not affect the structural and waterproof nature of the hull. "However," John says, "I prefer not to see too much light coming through my hull."

Installing the rib, at left, using a steamed piece of teak bedded down with epoxy glue then covered with a strip of fiberglass cloth. This will help keep the hull from twisting when the dinghy is rowed.

Clamping the gunwales, at right. In boatbuilding, John says, you can never have too many clamps.

***Ozma*, below, the new 9-footer, installed on Kim and John's Cape Dory 36, *Mariah*.**

If you build it

Here are some resources if you're contemplating building a cedar-strip nesting dinghy:

How to Build a Nester Dinghy, Part 1, Dave Gerr, N.A., *Boatbuilder* magazine, January/February 2001.

How to Build a Nester Dinghy, Part 2, Dave Gerr, N.A., *Boatbuilder* magazine, March/April 2001.

The Nature of Boats, by Dave Gerr (International Marine).

Canoecraft, by Ted Moores and Merilyn Mohr.

The unglassed inside of the boat, at right, connected together and ready for sanding. Sanding the inside is the hardest part of building this boat, John says. Next the sanded hull is dusted and cleaned with acetone and a reinforcing layer of fiberglass cloth is added to the bow and transom. "On the first boat," John says, "We put the reinforcing cloth on after the overall boat was glassed. I did it the other way the next time. Smooth the cloth out as best you can before you wet it down with epoxy," John suggests. "The flatter you get it to lie here, the less you have to sand later. Unfortunately I did not take a picture of the whole boat covered in glass, which should go on as one piece." Once the boat is covered with glass, use a squeegee to apply the thick epoxy resin. Wet the glass thoroughly with the resin and carefully scrape it down. Get a friend to help mix the resin, which hardens quite rapidly. Once you start this part, you need to finish. Doing a careful job here will save sanding time later. It takes three coats of epoxy to fill in the weave of the cloth and leave a smooth hull. The inside gets only two coats to leave a rougher surface for traction.

Continued from Page 39

the dinghy will be scratched and dull. This is easily repaired in the garage, preferably in the dead of winter.

An afternoon of lightly plying the orbital sander and brushing on a fresh coat of varnish will return your cedar strip to its original luster, while letting you revisit the best days on the water. There's a memory of a great beach behind every scratch.

After 22 years with my husband, I know there's a third dinghy in the offing, probably in the 10-foot range. John found that taking the original plans down 18 percent was a bit too much. Our dinghy rides a little lower in the water than we'd like, and he's contemplating adding two inches to the oarlocks to keep from hitting his knees while rowing.

It's the perfect kids' boat, though, and our son and daughter have reveled in rowing it around the marina where we keep our boat. It should prove a nice fit threading the sea caves of our cruising ground as well.

"She's a looker," John says with unabashed pride. "Building it was a series of little epiphanies, reaffirming that you're going to end up with something quite beautiful."

And not available locally.

The two dinghies, at right. The larger 11-foot version, in front, is back in the shop for repair and modification. The 9-footer has removable center and rear thwarts that can be stored in a bag under the bow thwart. Another bag holds the come-apart oars. The bow section of the 9-footer with the seats and oars in it weighs 42 pounds. It weighs 29 pounds without them. The stern section weighs 31 pounds.

Both sides *of* chartering

Do your homework before you put your boat in charter

by Dee Lawton Smith

Finding a reputable company to charter from can make the difference between a great sailing experience and an unfortunate one, says Jay Kraft, co-owner of Bay Breeze Yacht Charters.

THE PULL TO OWN A SAILBOAT CAN BE understandably strong. So when the temptation looms to save expenses by putting it in charter, examine the plusses and minuses of charter ownership and your personal situation thoroughly.

The charterboat industry surged in the 1980s as the result of attractive tax benefits for boatowners. Jay Kraft, co-owner of Bay Breeze Yacht Charters of Traverse City, Michigan — the state's largest and oldest charter company — says he seized an opportunity when another operation shut down. "The remaining yachts formed the starting point for Bay Breeze when we identified the need and desire for charterboat sailing in the region and recognized the business opportunity," says Jay.

> *"If the idea of someone else using your stuff is upsetting, it may be difficult to put your boat in charter."*

The charterboat business took off when President Reagan signed legislation in 1981 allowing tax credits to buy, depreciate, and write off purchases such as boats and other luxury goods. Skip Van Horn, for 20 years the dockmaster at Bay Breeze, remembers those days well. "People would come in with their W-4s in hand. We'd see what they needed to spend and match them with a boat of comparable value," recalls Skip.

Some of the tax advantages of the '80s have since disappeared, but would-be boatowners can still make a case for choosing charter ownership. Seek advice from the experts — an accountant, financial planner, or other reliable source. The basic premise is that you own the boat, and you can sail it. In some arrangements, all the maintenance is taken care of for you, usually for a contract period of five years. Costs for dockage, insurance, launch, haulout, storage, and annual inspections are paid by the owner. All marketing, promotion, literature, and personnel costs are assumed by the charter company.

Skip Van Horn, dockmaster for Bay Breeze Yacht Charters, readies a 44-foot Beneteau for a week-long charter on Lake Michigan.

Splitting revenue

In the case of Bay Breeze, the company and owner split user revenue 50/50, often creating enough income to cover the annual expenses of ownership. "Basically, there are none of the headaches for charterboat owners," says Jay. "There is the assurance that it's well cared for with a strict maintenance schedule that we adhere to and share with our owners." It's not Jay's favorite part of the job, but he frequently stands in line in the office of the secretary of state, awaiting licensing papers and tabs and saving boatowners the trouble.

Many charter companies will let boatowners assume some of the main-

tenance on their boats. Engine tuning and repairs may not be encouraged, however.

What are the downsides of charter ownership? If the idea of someone else using your stuff is upsetting, it may be difficult to put your boat in charter. Wear and tear on the boat can be expected, and there is the very real chance that when you want to use it, your boat will be booked by someone else…making money but unavailable to you.

"Chartering is not for the person who wants to use a boat as a cottage every weekend, and it's definitely not for the controlling, Type-A personality," says Jay when describing potential charter owners. Since many charter owners are professionals, aged 45 and up, a common complaint is that they are unable to use their boats on the weekends designated for their use, due to career demands and family events. A bargain is only a good deal if you use it.

Another issue is the resale of a boat that goes out of charter. Resale is rarely a problem, according to Bay Breeze, if the company is reputable, carefully screens its charterers, and maintains the boats in the charter fleet regularly and well.

Heavy usage and occasional damage can be a factor, but the more likely problem in the outright purchase of a charter boat could be in winding up with an improperly outfitted boat ill-suited for your needs and therefore in need of expensive upgrades or modifications. In addition, boats used extensively in salt water may be prone to corrosion of fittings and engine parts.

"Some of the tax advantages of the '80s have since disappeared, but would-be boatowners can still make a case for choosing charter ownership."

Reputable firm

Putting your boat in charter can be a smart move if you plan to use it regularly but not constantly, and if distance or commitments don't prohibit you from enjoying your investment. The first step is to find a reputable firm. Check references, look for active marketing programs and boat-show representation, visit the company, and get to know the staff and their level of commitment.

"Some question what the company does for their 50-percent split and feel the boatowner is the one bearing all the costs," says Skip. "But that's simply not true. The business relationship starts with trust and seeing firsthand the care and maintenance provided by the charter company. You get what you pay for, and the outcome is far better."

Consider management companies that also operate well-run sailing schools. It is just one more assurance that all questions are being asked, potential charterers of your boat are well trained, and that answers and help are readily available.

On the other hand

Perhaps all the paperwork, down payments, time commitments, and uncertain economy have you wondering if charterboat ownership is right for you. The perfect solution for some is chartering someone else's boat. You choose your chartering company, the vessel, when you want to sail, and where. You book it, pay for it, enjoy it, and leave the details of ownership behind. Many use chartering as a way to explore other parts of the world by sail. It makes sense and enhances their own boat appreciation and expectations.

Skip thinks chartering is the way to go. "Personally, that is what I would do," he says. "You can spend two grand or less with two couples, have a great time, and just walk away." In the northern climes of the Great Lakes, the short 15-week season is a consideration for winter charters farther south.

Whether it's your boat in charter management or a week-long bareboat charter, look for reputable companies in order to avoid disappointment. A successful arrangement can make the difference between an unfortunate investment and many wonderful hours of exhilarating sailing…on your boat or a charter of your choice.

As Jay says, "How do you put a value on that kind of fun?"

Resources

Bay Breeze Yacht Charters
<http://www.bbyc.com>
877-941-0535

Bay Breeze Yacht Charters has access to the northern Great Lakes from its base on West Grand Traverse Bay and from Drummond Island in the North Channel of Lake Huron.

A charter group, below, sets off for a two-week excursion on Lake Michigan, visiting interesting harbors and quaint small towns along the coast.

Alternative [cruising] lifestyles

Cost-effective sailing vacations; let us count the ways . . .

by Karen Larson

Tom McMaster and Rose Hansmeyer maintain the Sailboat Exchange website because they like to explore new sailing areas.

SAILING AND SAILBOATS (and perhaps life in general) are all about compromises. Sometimes it would be nice to sail in the body of water near home; sometimes you'd rather be somewhere warmer, cooler, or more exotic. Although you may prefer to sail on a boat you're familiar with, you may not have the time or money to own and maintain your own. In fact, having your own boat means maintaining it, which takes away from sailing time. Chartering a boat has advantages and disadvantages. Having a trailersailer solves some problems while creating others.

These days, there are some new and compelling alternatives to consider. These cruising alternatives include trading time on your boat for time on someone else's boat in another location, jointly owning a boat with others in a new kind of partnership, and buying regular timeshare vacations on boats.

Sailboat Exchange

Tom McMaster and Rose Hansmeyer are Lake Superior sailors with an itch to travel and a frustration with long cold winters when their sailing season is on hold. Chartering seemed expensive to them since they also had the expense of owning and maintaining their own Alberg 37. A year or so ago, they discovered a website offering to match sailors willing to trade time on their boats for a like vacation in a different location. They were interested in learning more. The site owner was too busy but looking for a way to continue the service. Before long, Rose and Tom had agreed to take on the site and the matchmaking responsibilities that went with it.

> *"The beauty of a sailboat exchange is that it allows you to avoid the high cost of chartering by simply exchanging the use of your own boat . . ."*

"The beauty of a sailboat exchange is that it allows you to avoid the high cost of chartering by simply exchanging the use of your own boat," Rose says. She is the first to acknowledge that owners have some concerns but believes that exchanging parties would treat the other boat as well as their own . . . or maybe better. The benefits outweigh any concern.

Because Rose and Tom help "likeminded sailors" find each other for a boat exchange, the arrangement between the boatowners is as formal or informal as they wish to make it. Each party chooses whether they want to make the exchange based on feeling comfortable with the other party's experience. They might even choose to spend a weekend or a day sailing together prior to releasing "their baby." The exchange can even be for a few days while they are visiting a city on business. Good friendships are made this way, in much the same way that foreign exchange student arrangements are sometimes reciprocal and often wind up creating lasting relationships.

As Tom notes, "We felt it (taking over the responsibility for this website) would benefit not only us, but also other owners who have a similar desire to explore the world." He points out that the advantages of this informal arrangement include a reduced cost when compared with chartering and the ability, when planning a trip itinerary, to get local knowledge from people who live or cruise in the area. Just as with chartering, sailors can choose a new cruising location. They gain the ability to cruise in areas too

far or unrealistic to reach with their own boats. Northern sailors can extend their cruising season in the winter, and southern sailors can go north to beat the summer heat.

Sailboat Exchange has listings for abut 130 boats from all over the world. There is a small membership fee that helps support the website hosting and program marketing. Tom and Rose do this as a hobby. They agree that this sort of work is done for the love of it and the ability to interact with and help other sailors. Theirs is not an income-producing adventure.

"Fractional ownership is a boat partnership with several advantages and fewer of the disadvantages of most informal partnerships."

Fractional ownership

Fractional ownership is a boat partnership with several advantages and fewer of the disadvantages of most informal partnerships. You no longer have to coerce Uncle Joe and three friends into sharing boat payments and maintenance with you. And you won't lose the goodwill of your friends or family members if the relationship goes sour. Great Blue Yachts, a company founded by Rick and Lisa Sabol, helps you find two co-owners, keeps the partnership on a businesslike level, and leaves you and the others to choose how much maintenance to do and what upgrades to make.

This is a hands-on program. In fact, Rick and Lisa call it a "Hands On" membership. There are no professional cleaners. You take the boat out yourself and clean it up for the next folks. It is, after all, your boat. You and two others share the costs and time aboard in equal thirds through a Limited Liability Company, or LLC. If you already own a boat and don't have much time for it lately, you can place it in this Hands On arrangement with the help of Great Blue Yachts. And you can do it in your own cruising grounds. This is not about long commutes or vacation charters in exotic locations.

If you want to get out of the agreement, you can sell your third share without the tax consequences associated with selling a boat. You are selling a share, after all. Great Blue Yachts began arranging fractional ownerships on the Chesapeake Bay helping sailors there who bought new boats together. But the program is gradually growing up and down both coasts, along the Gulf of Mexico and throughout the Great Lakes. And "experienced boats" (read: good old boats) are also being included these days.

The beauty of the one-third-share arrangement is that the owners share one third of the costs (loan payments, slip and storage fees, insurance premiums, maintenance, and upgrades) while using the boat for just one third of the season. For many sailors, this split is more realistic anyway since family events have a way of stealing precious sailing weekends from even the most dedicated among us.

"Though most of us would love to sail each and every weekend, the reality of it is we can only use the boat about every other or every third weekend," Rick says. "Life happens; you have weddings, graduations, and children's soccer games to attend. Sailing is put on the back burner."

"The advantage of this arrangement (timesharing) is that you come back each year to a boat that you know."

Rick plays matchmaker, connecting sailors. He handles the purchase, along with scheduling, insurance, and marina arrangements. He also ensures that all members are competent sailors before setting them up in their own LLC. The sailboat belongs to the LLC (which is owned by the three members), allowing for tax advantages and limiting liability. The LLC spells out the conditions of the partnership and preserves relationships when one shareholder is ready to move on.

Timeshares

And finally there are timeshare sailing experiences much like those offered by vacation resorts everywhere. One nice feature of this concept, also offered by Great Blue Yachts, is that because the time purchased is aboard a sailboat, the boat is moved from place to place every three or four years in order to give the vacationing sailor a change of scenery. Rick calls this a "timeshare with a nautical twist." So far, this program, which Rick and Lisa refer to as their "Smooth Sailing" program, is available in St. Maarten, Grenada, and the British Virgin Islands.

The advantage of this arrangement is that you come back each year to a boat that you know. However, if in the beginning you need to get familiar with the boat or want to learn about the local sailing area, you may begin this relationship with a hired captain. Like charter boats, these boats are professionally maintained. Cleaning, maintenance, layup, and provisioning (if requested) are provided. Timeshare units of 12 days a year are available. Some members purchase back-to-back shares or several vacation slots per season. In something like a co-op plan, each boat is sold after 12 years, and the proceeds are divided among the LLC members. In the Caribbean there are 21 timeshare periods available in each year with a scheduled layup period to avoid the hurricane season.

Resources

Sailboat Exchange
<http://www.sailboatexchange.com>

Great Blue Yacht
<http://www.greatblueyachts.com>
866-777-0585

Others
<http://www.yacht-swap.com/>

Understanding and using your marine-band radio

by Don Launer

THE PRIMARY SHORT-RANGE RADIO-COMMUNICATION SYSTEM for most small craft is the VHF-FM marine-band radio. It is the communications method of choice for the recreational boater, and a station license from the FCC is no longer required for use within the United States.

VHF stands for Very High Frequency — the band of frequencies between 30 and 300 megahertz (MHz), with wavelengths of 10 meters to 1 meter, respectively. The marine band, with frequencies between 156 and 163 MHz, is located in this broad VHF band, which is home to a variety of services, including FM radio, aviation, police, commercial uses such as trucks and taxis, garage-door openers, scientific and medical uses, cordless phones, amateur radio, radio control, and television channels 2 through 13.

Just like those television signals, this marine band is usually described as "line-of-sight," which means that the higher the antenna is, the greater the range will be. Actually, VHF signals bend slightly, attempting to follow the contour of the earth. Infrequently, when special layers of

the ionosphere form a reflective path, they can travel hundreds or thousands of miles.

FM stands for Frequency Modulation — the same type of signal that brings us our FM broadcast stations static-free, as well as the sound on our TV.

Although some people new to boating eschew the marine-band radio in favor of their cell phones, this is a bad idea. In an emergency situation, when you're using the marine band, you can reach the Coast Guard directly, and other boaters nearby can also hear your Mayday call and come to your assistance. (Mayday is a phonetic way for the English-speaking world to say the French phrase, "Help Me." This term was established in the early part of the last century, before English took over from French as the language of diplomacy and international travel).

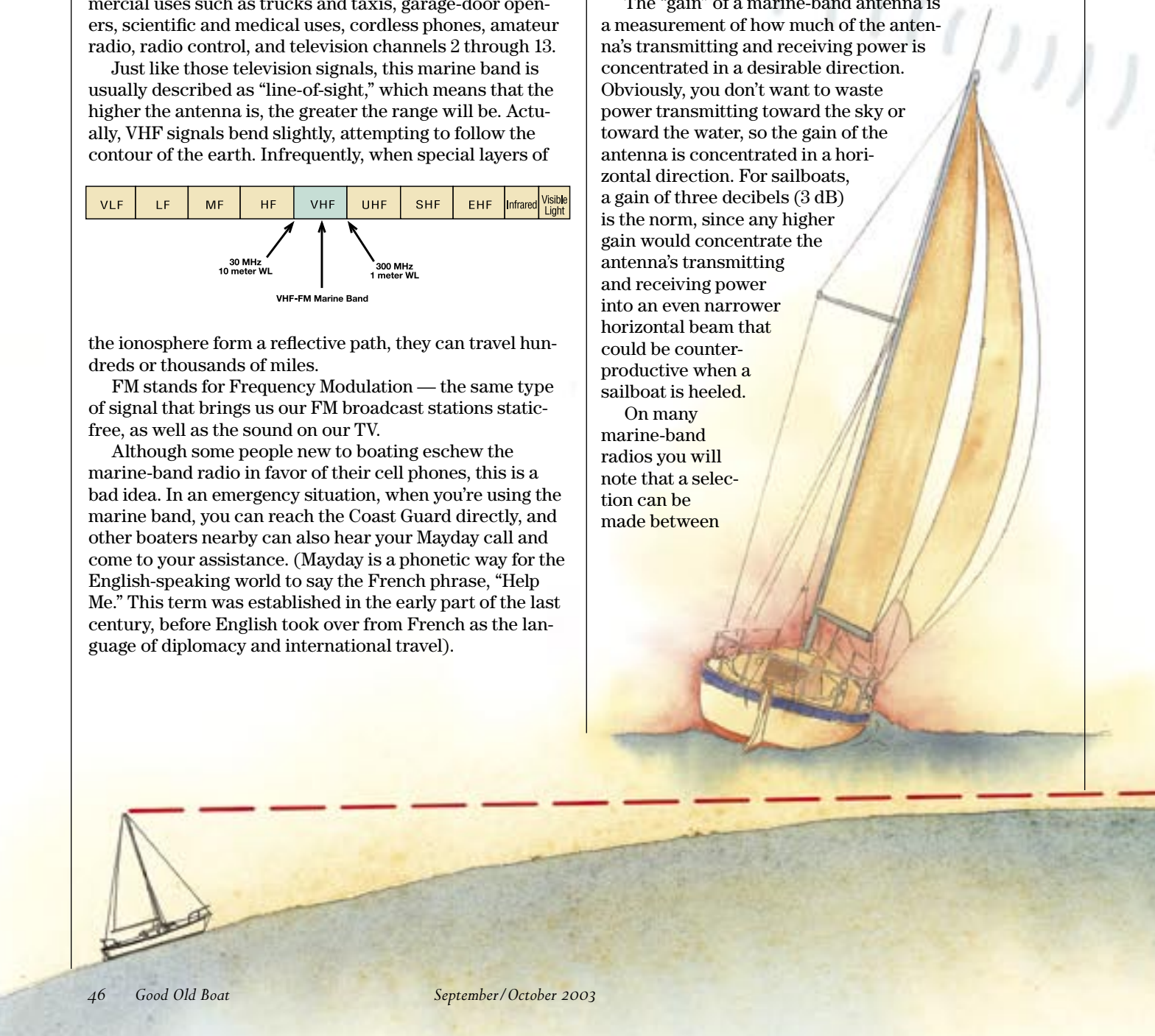
Power limited

The power of a marine-band transmitter is limited to 25 watts, the amount of radio-frequency energy that goes into the antenna. It is also required that this power can be readily reduced to 1 watt for short-range communications.

Antennas for the marine band are vertically polarized. This means that the transmitting antenna element is vertical and, for optimum performance, receiving antennas should also be vertical. (TV antennas, as we have all observed, have horizontal polarization).

The "gain" of a marine-band antenna is a measurement of how much of the antenna's transmitting and receiving power is concentrated in a desirable direction. Obviously, you don't want to waste power transmitting toward the sky or toward the water, so the gain of the antenna is concentrated in a horizontal direction. For sailboats, a gain of three decibels (3 dB) is the norm, since any higher gain would concentrate the antenna's transmitting and receiving power into an even narrower horizontal beam that could be counterproductive when a sailboat is heeled.

On many marine-band radios you will note that a selection can be made between



Layout and illustrations by Ted Tollefson

"International" and "USA." This is because on some channels there is a frequency difference between the two. Thus, for routine communications with the U. S. Coast Guard, you must tune to Channel 22 with the American frequency (which is easily remembered by the suffix "A"). Hence, the Coast Guard is listed as Channel 22A. If you were to transmit on the International frequency of Channel 22, the Coast Guard wouldn't hear you.

Relatively simple

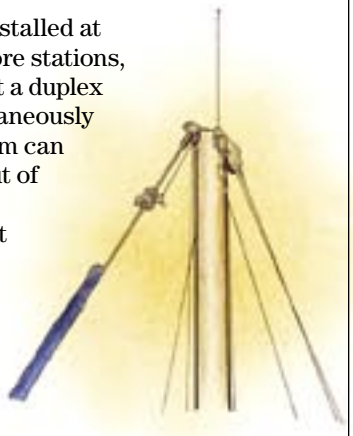
As originally conceived, the marine band was relatively simple and straightforward. Channels were allocated for distress, safety, and calling; the Coast Guard; commercial vessels; recreational boats; ship-to-ship calls; ship-to-shore calls; marine operators (who can connect you into the land-line telephone system); and weather forecasts.

But the marine band is no longer as simple as was originally envisioned. Digital Selective Calling (DSC) technology is now a part of new 25-watt marine-band radios. Although commercial vessels have had DSC since 1988, it has just recently become available to recreational boaters. With DSC, at the touch of a button, an automatic Mayday call can be transmitted that includes your Maritime Mobile Service Identification (MMSI) Number, which describes your vessel. Also, through an interface with your GPS or Loran, your latitude and longitude can be automatically transmitted, and these DSC-equipped radios can continue transmitting the emergency message even when the boat has been abandoned.

Unfortunately, in many parts of the country the Coast Guard is still a couple of years away from having DSC receiving equipment, but many towing companies and yacht clubs can monitor DSC Channel 70 and will relay emergency information to the Coast Guard. The Coast Guard is expected to be fully online with DSC by 2006.

DSC can also be used for making direct calls without going through the marine operator and ship-to-ship calls to other DSC-equipped vessels. As one way of relieving the congestion heard on channel 16 in some areas, the hailing part of these calls will not be heard by every other boat in the vicinity. Once the hail is completed and the radios are connected, however, the voice part of the call is conducted on ordinary analog VHF channels so anyone with a scanner or who happens to be tuned in to that channel can hear the conversation.

Big asset



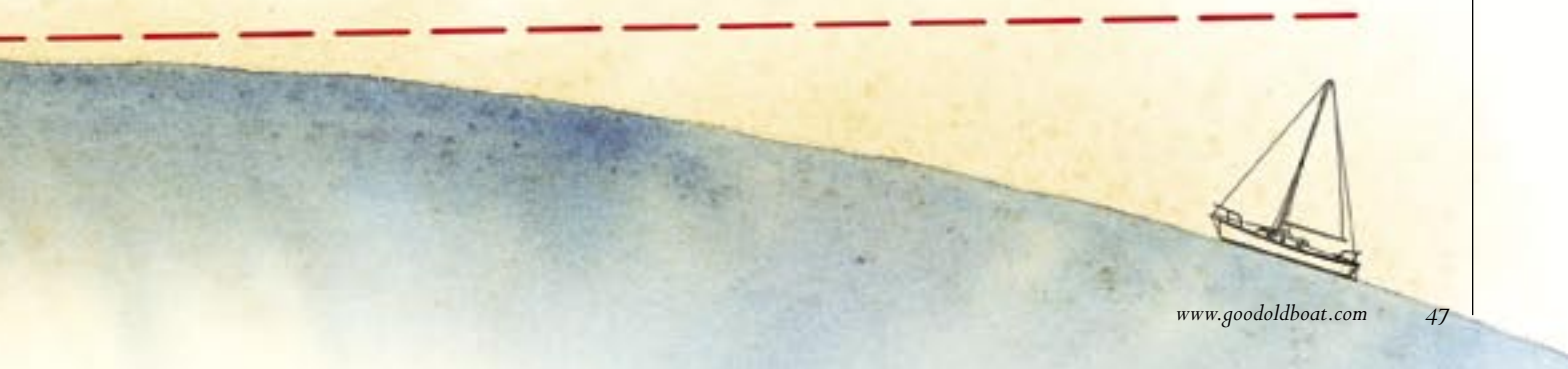
DSC capability is still being installed at MariTel's marine-operator shore stations, and although the system is not a duplex system (where you can simultaneously talk and listen) this new system can be a big asset when you are out of range of a cell-phone tower.

A DSC-equipped radio must be registered with the FCC, which can be easily done through BoatU.S. The MMSI number of each of these radios is similar to a telephone number, so when making a DSC ship-to-ship call, you must know the MMSI number of the other party.

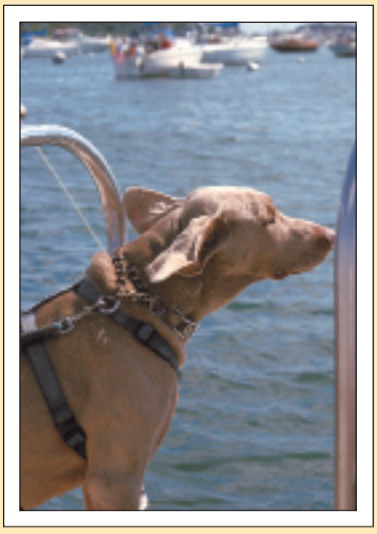
Hand-helds

Hand-held VHF radios have decreased in size and increased in reliability. Many are now submersible, which makes them great for your abandon-ship bag. Since most sailboats have their 25-watt, fixed-mount VHF radio in the cabin, a hand-held can be a great asset in the cockpit, especially when entering a strange marina and receiving directions from the dockmaster or when talking to a drawbridge operator. But for newer cabin-installed radios there is an alternative: remote microphones that allow channel-selection, entire LCD displays, and a speaker, all in the palm of your hand.

New battery technology has also given longer life to hand-helds, with the new nickel-metal-hydride batteries providing twice as long a time between chargings as the old nickel-cadmium rechargeable batteries. But it's still a good idea to keep alkaline batteries in your abandon-ship bag, since they have a shelf life of more than five years, whereas a rechargeable battery can self-discharge in a few months.



Salty dogs



by Mary Jane Hayes

Gunkholer's delight

The Com-Pac 23 is a trailerable pocket cruiser with sturdy, traditional lines

by Ed Lawrence

Don and Kathy Gaye sail their 1984 Com-Pac 23, ***Southern Exposure***, near St. Petersburg, Fla.

Florida resident Jim Lennox seems to have figured things out pretty well. He's the antithesis of retirees who become so bored that they take jobs flipping burgers in fast-food restaurants or as greeters in department stores just to have something to do.

Not Jim. "I try to go sailing almost every day," he says, "and I don't miss many opportunities." Who says it's possible to have *too much* fun?

Jim earns my vote as having his priorities in order. He has his Com-Pac 23, *Wonderful One*, tied up within footsteps of his home. From there, it's a five-minute sail to the Intracoastal Waterway near Clearwater. And he isn't a slave to a large lawn or landscaping chores.

> *"If I run aground, I step overboard, push off, and we're back in business."*

Not only does he have the right attitude and environment to pursue his hobby as avidly as he chooses, but Jim is the skipper of a boat that's well suited to his taste and temperament. The Com-Pac 23 is a tremendously versatile, low-maintenance sloop suitable for daysailing and for Jim's annual voyage from northern Florida to Key West, a trip he usually makes as a singlehander.

Sailing in skinny water is no problem. With depths in the Florida Keys ranging from deep to less than 2 feet, his boat's 2-foot 3-inch draft is a plus. "If I run aground, I step overboard, push off, and we're back in business. I can also cruise shallow water and coves other boats can't get into," Jim says.

Com-Pac Yachts has been in continuous operation since it was founded in 1957 by W. L. ("Hutch") Hutchins, Sr., an entrepreneurial tool and die maker who operated a metal-stamping fabrication shop in St. Louis…which, if you check a map, isn't exactly the sailing capital of the United States. Prior to his transformation to boatbuilder, Hutch was credited with the invention of many automobile accessories.

Ship in box

In 1970, he commissioned Clark Mills to design the company's first boat, a 16-footer, and added a unique twist: he wanted to be able to ship the boat in a box. His goal was to "build a small but highly efficient sailboat that could easily be trailered behind a car."

Curtis and Tara Villamizar sail ***Remote Access***, a 2001 model (#629), which is still trying to become a good old boat, out of Pleasant Bay on Cape Cod, Mass.

"Many describe the boat as being old fashioned; I say she's appropriately traditional."

Clark Mills, by the way, is renowned as the designer of the Windmill and Optimist prams.

In 1974, Hutch formed a partnership with Buc Thomas, a Florida boatbuilder, to begin producing the boat, initiating a tradition of building conservative, durable sailboats.

These days, the company thrives under the direction of Hutch's sons, Rich and Gerry. Rich, who began working for his dad as a child in St. Louis and now lives aboard a Com-Pac 35, is Mr. Outside. Gerry, a graduate engineer who began his career at Gulfstar, is Mr. Inside. The company produces 16- to 20-foot catboats and daysailers, as well as 27- to 35-foot cruisers designed by Bob Johnson and Charley Morgan comparable to those coming off the production lines of the largest sailboat manufacturers in operation.

The firm operates in an inconspicuous building on a side street in Clearwater that camouflages a 15,000-square-foot compound where 20 full-time employees spend their days. Com-Pac typically produces 100 boats annually.

Traditional mini-cruisers

Hutch envisioned producing boats designed to look like traditional mini-cruisers in the style of the 1970s and 1980s. They were characterized by a rounded entry, traditional stern and sheer, and cabintops that produce space belowdecks. They bear no resemblance to the plumb bows, flat decks, and reverse sterns of modern yachts.

The Com-Pac 23 is typical of the breed, though she suffers in appearance from a tallish cabintop, the result of an attempt to increase living space in a short boat. She also has bow and stern pulpits that are disproportionately high when viewed from abeam. The first of the line suffered from excessive weather helm. As a result, she was redesigned, and the Mark II was introduced with a bowsprit that changed the center of effort of the sailplan. Coupled with upward-sloping backrests in the cockpit, the 'sprit actually improves her profile, and adds a bit of sail area. Many describe the boat as being old fashioned; I say she's appropriately traditional.

The 23-footer was introduced in 1981 with a sticker price in the low $20,000 range, including sails but without outboard or trailer.

No delamination

Though Com-Pac boats were designed primarily for use on lakes and relatively protected water, the company hasn't taken a cost-cutting approach to construction. Older boats that have been well maintained, as Jim's has been, are in seaworthy condition without the delamination problems encountered by the low-priced alternative. At 3,000 pounds, the 23 is heavy compared to many of her contemporaries, but weight may produce a more comfortable ride in a blow.

As with other boats the company builds, including the 35-footer, the construction of hulls and decks is farmed out to a local fiberglass shop with excellent results.

"We are not interested in being in the glass business because it is so specialized and requires a huge commitment for space," Rich says. "However, we dictate lamination schedules and are diligent about the storage and maintenance of the molds." This allows the fabricator to produce consistently smooth finishes when hulls and decks are popped from the molds. Since the construction of spars and rigging also is farmed out, the company could be considered an assembler as much as a builder.

Hulls are molded of solid fiberglass, a mixture of mat, roving, and

Photos from top: Steve Drakesmith's 1985 Com-Pac 23, *Jungle Love*, rests on a trailer. He and his wife, Whitey, sail near New Smyrna Beach, Fla., with their children. The cockpit of John Schnoering's 23. In the bottom two photos, a look at the interior and the Bimini of Trey Harris' *Vela*, a 1987 model. Trey and his wife, Kat, sail with their family on Galveston Bay.

multi-directional cloths. Typical of smaller trailerable boats, the interior is constructed of plywood sections tabbed to the hull, rather than being formed as a one-piece liner that is then dropped into the space and bonded with putty. Either technique provides hull stiffening.

Screwed bulkhead

The forward bulkhead provides support for the deck-stepped mast, in lieu of a compression post that would reduce living space. The bulkhead is secured to the hull and deck with a number of screws, rather than being taped around its entire edge. That's not a construction method you'd want to employ with an oceangoing vessel but for her anticipated use, the construction is adequate.

The deck is a fiberglass section cored to provide stiffness and sound deadening. The hull-to-deck joint is an outward-turned flange onto which the deck is laid, bonded with 3M 5200 and bolted. A rubrail conceals the exterior joint and the interior is caulked, so leaks are uncommon.

Since she's designed for gunkholing, her 2-foot 3-inch draft is created by constructing a long, shoal-draft keel ballasted by a mix of lead and concrete poured into the keel sump. The process may not sound scientific, but it works. The head of her kick-up rudder is cast aluminum. The rudder itself has a squared-edged, ⅜-inch section.

Jim boat's was constructed in 1988, so she was fully mature when we sailed her. She's sailed many miles, some in the open sea, and showed little sign of construction defects.

"A stroke of genius is the layout of the galley in two sections that place the stove to port and the sink to starboard. Mounted on sliders, these sections disappear into quarterberths when not in use."

Simple layout

Her rig and deck layout are as simple as imaginable, as you would expect on a pocket cruiser. The deck-stepped mast is a straight section that looks almost brutish, and spreaders are tubes in sockets connected to a pair of lower shrouds with open-faced turnbuckles that facilitate tuning. The rig can be tweaked but won't be tuned for race conditions.

The mainsheet is led from the end of the boom to the stern, creating an awkward, but typical, 45-degree angle that's an impediment to producing good mainsail shape. That's a minor concession to comfort, however, since a mainsheet traveler located in the aft section of a 23-footer would make about as much sense as adding a hot tub belowdecks. A vang adds the ability to improve sail shape at little expense.

The cockpit is seven feet long, and comfortable for three full-sized adults, as I discovered on our test sail. And there's adequate space for a fourth. Seatbacks are high enough to be comfortable, and the tiller is long enough to facilitate steering from either rail without being excessively intrusive. Winches are single-speed Lewmars.

The two pulpits and a single lifeline will retard crewmembers' attempts to escape overboard. When owners complained of stanchion bases breaking on early models, subsequent boats were fitted with stanchions that had beefier backing plates. Given that the sidedecks are wide enough for traffic and that two handrails are located on the cabintop, the overall arrangement produces a safe environment.

Illusion of space

It would be a wild exaggeration to say that stepping below produces the impression that she's 23 feet long outside and a 35-footer belowdecks. Nonetheless, the illusion of spaciousness is created by her beam, the height of her cabin, and sightlines forward. A six-footer can sit comfortably on the settees without fear of banging his head on the overhead. Areas amidships and forward are divided

The interior of John Schnoering's 1986 Com-Pac 23. John is a "collector," buying, restoring, and sellling 23s. He and his wife, Joyce, sail on the lower Chesapeake near Virginia. They also own a 1982 and have owned a 1998 model. The 1982 is undergoing an extensive interior refit.

by a bulkhead with large cutouts that produce view corridors to the bow. The forepeak may be enclosed by a fabric door.

Interior joinery, even on an aging boat, is still-attractive teak-faced plywood, and hull sides are covered with teak battens fitted over shiny fiberglass. The gelcoat overhead is finished to resemble planking, and a teak-and-holly sole is underfoot. She gives the appearance of a proper yacht. Teak cabinets and storage shelves line both sides of the main saloon, accented by

Vela, the Harris' Com-Pac 23, at left, is a lot of boat in 23 feet. John and Joyce Schnoering's 1998 Com-Pac 23 diesel, below left. Debi and Gerry Sutton's *Windrose*, below right, a 1985 model, cruises on the Patuxent River in Maryland. They enjoy gunkholing on the creeks and rivers off the Chesapeake Bay.

six bronze opening ports that add a salty touch. Settees will seat four to six crewmembers or sleep a six footer.

Among the first things I noticed about the test boat was that Jim has found space for a lot of extra gear. He's mounted a liquor cabinet on the starboard bulkhead to store airplane-sized whiskey bottles, and he's found spaces for clipboards, books, and navigational aids on the bulkhead and shelves lining the hull.

A stroke of genius is the layout of the galley in two sections that place the stove to port and the sink to starboard. Mounted on sliders, these sections disappear into quarterberths when not in use. Of course, that means passengers 5 and 6 will be sharing sleeping quarters with a coffeepot or faucet. Storage space for a cooler and a silverware drawer is under a lifting companionway step.

Saloon table

In another space-saving design element, the dining table is a wood section cut to fit in the space in the bulkhead, like a hatchboard in the companionway. It is supported by a post, so there's no need for hinges or bungee cords.

The V-berth is more than 6 feet long, about right for most adults. Jim is 6 feet 4 inches tall and says it's a comfortable berth. Unfortunately, the space allocated for a Porta Potti is under the berth's pillow, which presents an interesting predicament. The anchor locker in the bow drains overboard, preventing the intrusion of water and the accumulation of odors from the ocean floor.

Jim, who lives just a stone's throw from the ICW, replaced a 1981 Com-Pac 23 he sailed for several years with *Wonderful One*, a 1988 model. The PHRF rating, for a sailor interested in competition, is somewhere in the mid-200s. However, her displacement and outboard sheeting angles will present a performance challenge for a skipper racing in a light-air venue.

Com-Pac 23

Designer: Clark Mills
LOA: 23 feet 11 inches
LWL: 20 feet 2 inches
Beam: 7 feet 10 inches
Draft: 2 feet 3 inches
Displacement: 3,000 pounds
Sail area: 250 square feet
Ballast: 1,340 pounds

As I discovered during our sail, she performs best in 8-plus knots of breeze and is fastest and most responsive on a reach, when the sheeting angles produced by outboard shrouds may be an advantage. We sailed with a full mainsail and 110-percent jib and managed to coerce 4 to 5 knots of boatspeed beating to weather. She's tender in a puff, heels quickly, but stiffens at 15 degrees of heel with her shoulder buried as she slides forward without burying the rail. Jim's boat is equipped with a vang, which improves her pointing ability. She tacks through 100 degrees.

Tiller holder

Since he sails alone most days, Jim has attached a knob to the underside

of the tiller with a line that runs to a cleat on the coaming. This arrangement holds the tiller where he wants it. With the main doused and the jib backwinded, he can enjoy a leisurely lunch or peruse a magazine.

To minimize weight, he leaves a 12-volt battery on the dock during daysails and uses handheld instruments — windspeed indicator, GPS, and VHF. These tools weigh less than fixed instruments, are always close at hand, and live comfortably and warmly indoors, just like the skipper.

An 8-hp Johnson outboard powered us into 10 knot winds at 4 to 5 knots.

Interior joinery, even on an aging boat, is still-attractive teak-faced plywood, and hull sides . . . she gives the appearance of a proper yacht.

There must be much that's attractive about this boat because scads of Com-Pac 23 owners strap them onto single-axle trailers and head for distant shores.

Regardless of her portability, I've come to appreciate her sailing characteristics, comfort, and versatility. She won't beat to weather as well as a Catalina or Santana 22, but she's a long way from being sluggish. She's fast and steady off the breeze, so easing sheets to sail 10 degrees lower is a good option. The cockpit and spaces belowdecks are well conceived, especially the galley arrangement. And I like being able to step overboard and shove a boat off a sandspit when I've neglected my navigational chores.

All things considered, including her price in the aftermarket, she qualifies as a good old boat.

Com-Pac Resources

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1195 Kapp Drive
Clearwater, FL 33765
727-443-4408
<http://www.Com-PacYachts.com>

Com-Pac Yacht Owners' Association
<http://www.com-pacowners.com>
An active email discussion group is accessible from the website.

Com-Pac discussion list
<http://members.sailnet.com/email_lists/index.cfm>

The [boat] name game

by Karen Larson

GOT A FAVORITE BOAT NAME? SEND it to *Good Old Boat* magazine by mail or email. You could win a prize: new vinyl graphic lettering with your boat's name by Vinyl Image or a tough-as-nails Weekend'R Products duffel bag personalized with your boat's name. Why these prizes? Because they're about boat names. Because we like and use products from both vendors. And because they offered the prizes. It's that simple.

This is not a contest. There are no rules. Send your favorite names (name of your boat, other folks' boats, or boats you'd like to name someday). Send as many as you like. We'll select our two favorites completely arbitrarily. Those folks will win prizes. The rest will share their favorites for the pure joy of telling others about some pretty good boat names. We'll announce the winners in the December *Good Old Boat* newsletter.

Not familiar with the *Good Old Boat* newsletter? It's a between-issues informal communication between the *Good Old Boat* publishers and subscribers. We print one version which is mailed to folks who don't have email addresses or for whom we don't have email addresses in our database. The vast majority of our subscribers receive posting notices for their newsletters every other month by email. If you're a subscriber and don't receive a newsletter in the mail or an announcement by email, it's because we're sending your email announcement into outer space to an old or misspelled email address or to an address which filters our note out thinking it's spam. Let us know, and we'll improve matters.

Weekend'R duffel bags, above, are available in large and larger. See the *Good Old Boat* endorsement of these bags in the May 2003 issue.
For the past several years, Vinyl Image has provided all lettering for *Good Old Boat's*: truck and boat, above left. We've been pleased in every case.

Choosing a trailerable

Making that seemingly impossible choice

by Gregg Nestor

So, you're in the market for a trailerable sailboat. Great! There are more than 50 new trailerables currently in production, ranging in size from 14 to 32 feet. The number of models on the used-sailboat market is probably double that.

So how do you choose? You'll need to define your requirements, expectations, and likes to narrow the field down to just a handful of candidates. One way is to ask yourself the following How, Where, When, and Why questions. Answer them — in as much detail as possible — *before* you open your checkbook. After having done this, you'll have a clearer picture of what that "right" trailerable sailboat might be.

How will you use your boat?

Are you new to sailing and want to learn to sail? Or are you a novice sailor who wants to build a solid foundation of sailing skills for racing? Maybe you're interested in the close-to-the-water experience or the simplicity of off-the-beach sailing. If so, consider a dinghy, boardboat, or even a small multihull. These boats afford a close "cause and effect" relationship with wind and water, which is an ideal platform for learning how to sail or for building solid sailing skills for racing. These boats are usually simple to rig, launch and retrieve, and easiest on the pocketbook.

> *"If your goal is to spend weekends or vacations aboard, you'll need berths, a galley, a head, and somewhere to eat."*

If you want a drier boat that will accommodate you and two or three others, plus some gear for a day's sail, consider the bigger, more stable "daysailer." These boats traditionally have large cockpits with little or no cabin space. If there is a small cabin or cuddy, it is useful for storing sails, extra gear, and that picnic lunch. Daysailers are perfect for taking the family out for a day's cruise or honing your sailing skills. Daysailers include both centerboarders and keelboats. While launching and retrieval are relatively easy, rigging can range from the simple to the more complex, with cost directly related to size and complexity.

If your goal is to spend weekends or vacations aboard, you'll need berths, a galley, a head, and somewhere to eat. To accomplish this adequately, you'll want a "pocket cruiser," starting around 22 feet in length. These boats may have fixed keels, swing keels, or centerboards.

This type of craft will enable you to daysail, affords liveaboard "creature comforts," and also allows you to entertain at your dock. You'll spend more time rigging and at the launch ramp with this type of boat. As is the case with daysailers, the amount of money you'll spend is a direct reflection of the boat's size and complexity.

The O'Day 19, above, is a stable daysailer. The Rinkercraft, the pocket cruiser at right, offers some liveaboard creature comforts for those who would like to stay out overnight.

Dinghy-type daysailers, like the O'Day 12, at left, and the Jester, at right, are drier than their boardboat cousins and will accommodate a crew of two or three. If you're interested in a close-to-the-water experience or the simplicity of off-the-beach sailing, a boardboat like the AMF Minifish, below, may be the boat for you.

Or perhaps you have your eye on that Wednesday-night race trophy, but your family has other ideas. They want to cruise the coast during next year's summer vacation. Don't worry, a performance cruiser may be just what you need. Several pocket cruisers have been designed for this dual role. They may carry a generous amount of sail, sport more aggressive keels, have a longer waterline, and exhibit less wetted surface. While they offer many of the amenities of the pocket cruiser, be prepared to make some sacrifices in comfort (headroom for one). Since this can be considered a variation of the pocket cruiser, your outlay of time and money spent will be similar.

With racing in your blood, speed will be your highest priority. Since speed comes in different sizes, check with your local sailing clubs to determine if there are any one-design fleets or what type of boats are being raced locally. Consider matching a boat type with that of the majority of local racers. You want a boat that fits into a class so you'll have someone to race against. If you're really serious, look at the one-designs that can lead to national competitions. As a dedicated racer, prepare to spend time and money tuning and tricking out your boat.

Where will you sail?

Should your sailing grounds be the Great Lakes or coastal areas where sailing conditions are challenging, boat construction quality and size will be of great importance. Boardboats and daysailers are only acceptable close to shore. Larger boats will be more comfortable farther from shore. However, the vast majority of even the largest trailerables are not bluewater boats. Regardless of boat size, pay close attention to the weather and water conditions. Make sure that your sails can be reefed. Also, prepare your craft with a greater level of safety equipment. Backups for VHF and GPS are a good idea. Having charts and knowing how to use them is essential.

"Should your sailing grounds be the Great Lakes or coastal areas where sailing conditions are challenging, boat construction quality and size will be of great importance."

Many sailors sail only on a specific inland lake. In relatively protected bodies of water such as these, almost any trailerable sailboat will work fine. Knowing the water depth, the shoreline configuration, and the facilities available will aid you in your selection process. Since you may be tacking more often, consider a smaller boat which will require less effort. Bear in mind that small lakes frequently exhibit changing winds, caused by trees and other shoreline obstructions. This makes these bodies of water great places on which to learn.

If you're a purist and want to be a true "trailersailor," make sure that the boat you select is easily launched, retrieved, and trailered. Consider a boat of around 22 feet as being the maximum for these conditions. Also, the type of keel will play a big role here.

Stay away from deep, fixed keels. Swing keels, shoal drafts (with or without centerboards), and centerboard boats go a long way in making launching and retrieval easier. They also offer the best versatility when it comes to thin-water sailing, beaching, and contending with underwater obstructions. How much time you're willing to spend on rigging is something you'll also want to address before you buy. If you're not quite sure what to do, you may want to select a boat based on the body of water you will sail on most, while keeping in mind some of the other sailing destinations you're interested in.

When will you sail?

One of the main reasons to own a trailerable sailboat is the ability to experience a variety of sailing destinations with relative ease. If you intend to sail on differ-

ent lakes for days or a week at a time, rigging time may be less important than the size of the boat and the creature comforts it has to offer. On the other hand, if your plans are to daysail different lakes, the amount of time spent rigging should be kept to a minimum. Also, you may want to consider a small boat that will allow you access to shallower bodies of water.

Many trailerable sailboats are trailered only twice a year, once to the mooring or slip and once back for storage. If this is your plan, rigging may be the least of your concerns. You may want to move up to the maximum-sized trailerable.

Why do you want a trailerable sailboat?

The previous three questions deal specifically with the more tangible aspects of how you plan to use a trailerable sailboat. This last question addresses choices that are common but more subjective.

If not wanting to pay slip or mooring fees is your motivation, look for a boat that is quickly rigged, launched, and retrieved. If it isn't, you won't use the boat as often, and it will become an expensive liability rather than an enjoyable asset.

"Swing keels, shoal drafts (with or without centerboards), and centerboard boats go a long way in making launching and retrieval easier."

Perhaps you want to save on storage costs. True, a trailerable can be stored on its trailer. However, do you have the space to keep boat and trailer at your home? If not, will you need to rent space at a boatyard or self-storage facility?

Yes, you can trailer your boat almost everywhere. But do you have a tow vehicle capable of pulling a large heavy boat? If not, you'll need to either get a larger tow vehicle or set your sights on a smaller trailerable sailboat.

If you think trailerables are less expensive than non-trailerables, think again. A sailboat is a sailboat, regardless of whether or not it's trailerable, and new ones are more expensive than older ones.

So it's all been decided?

You've answered the questions, there's storage space next to the garage, your SUV can pull a Sherman tank, and you and your family have mapped out sailing destinations for the next two years. Sounds like a plan. But before you start touring the boatyards and visiting dealers with checkbook in hand, you might want to give a little thought to a few personal preferences such as: new boat vs. used; wood vs. fiberglass; sloop vs. cutter vs. catboat vs. yawl; masthead vs. fractional rig; motor vs. no motor; 2-cycle vs. 4-cycle vs. diesel; lots of brightwork vs. minimal brightwork; traditional vs. leading edge . . . ah, decisions, decisions. So many boats and so little time!

Facing page from top: Shark, a performance-oriented pocket cruiser; Chrysler 22, a pocket cruiser meant for cruising rather than racing; Flying Scot, a popular one-design racer with a strong national racing organization; and Pearson 23, another performance-oriented pocket cruiser.
Above from top: Lightning, another popular one-design racer; O'Day 222, a performance-oriented pocket cruiser; and Sunfire 17, a stable daysailer perfect for taking the family out for a day's picnic cruise.

A new wheel to wrap

Advancing age leads to the delicate decision to downsize

by Marilyn Palley

Time to sail, again. *Unlikely* nuzzles patiently at the sea wall alongside our house. Her bow leans yearningly toward the channel entrance. *Unlikely* is, as always, eager to go to sea.

We had been planning a passage to Honduras in August to visit our friend, Dale Westin, at his marina in La Cieba. We were scheduled to leave the boat in his loving care for some refinishing work. Our plans were to then head out to sea for another Atlantic crossing.

As the time of departure grew closer, a thought surfaced that I had been avoiding for some time. Considerations leapt to mind that could no longer be ignored. Reese, my husband and mate of 27-plus years had recently turned 80. A quarter of a century earlier he introduced me to sailing on a Westsail 32 with my first bluewater passage. A few years later we asked Ted Brewer to design an ocean-capable 46-foot cutter with a pilothouse and a cute roundy stern. She was built to the highest specs and, fully aware of the arrogance of the undertaking, we christened her *Unlikely*. She sat in drydock while all the necessary paperwork was completed. With excitement we climbed the ladder to inspect our new home.

> "Unlikely *had been the core of our lives and the stuff of our dreams.*"

While Reese, with boat plan in hand, explored from bow to stern and port to starboard above and below deck, I started my first project, wrapping ⅛-inch line around the stainless wheel with half-hitches. I used a wrench to tighten each knot, lest the line unravel. And so a spiral pattern grew. The ridges from the knots felt strong and firm and have lasted through many nautical miles and much egregious weather, including a few hurricanes. Each time at the helm with my hands on my wrappings, I still recall that exhilarating first day aboard.

Facing reality

But now, 24 years later, the time has come to face reality, a condition that few sailors ever achieve. How do I ask the man I love to think about tearing *Unlikely*, his other love, out of our lives in favor of a smaller, more manageable boat? Unthinkable. *Unlikely* had been the core of our lives and the stuff of our dreams. She had bonded Reese to me and me to Reese for life as best friends, shipmates, companions, and as sailors of the great oceans. I had learned from her much about myself and others in terms of trust, sharing, and the acceptance of equal responsibilities. Flashes of passages, adventures, quiet moments on watch at sunrise, satisfaction of reaching the next port, emotional peaks, and inward calm . . . all had made so painfully difficult the decision to let her go. But now she seems too much for us to handle.

Waiting for the right moment to approach the formidable suggestion seemed interminable. With a deep breath I finally spurted the question, "Would you ever consider selling *Unlikely*?" Before I could complete

> *"It was the most difficult question I had ever asked my husband, and I knew how profoundly challenging it would be for him to even consider the idea."*

my thought, Reese had closed his eyes. A few minutes — which seemed like hours — passed. It was the most difficult question I had ever asked my husband, and I knew how profoundly challenging it would be for him to even consider the idea.

"We could trade down in size to a boat which I could handle alone, if necessary." I rationalized, "Wouldn't it be fun to refit a new boat… every decision made together?"

Another moment passed. A wry smile and a nod passed between us.

Sometimes it is best to batten down the hatches, heave to, and weather the storm, a lesson learned in a wild passage off the coast of Sicily. I decided to do just that and let the matter rest until Reese could gather his thoughts. While waiting for him to react, we went about our normal routine of life at home, with *Unlikely* reprovingly in full view out of every window, her mast peaking high above our roof.

Hired help

No matter what the outcome of the discussion, *Unlikely* still needed some attention to fiberglass and paint on deck and teak work below, so we hired some help, offloaded everything stowed on board, including hatch covers, doors, and anything screwed down.

While hauling all of the sail bags through the hatches, I noticed a twinkle in Reese's eyes. Until that moment, I was careful not to push. He sighed, "It's time, but if we are going to sell her, then we are going to sell her in the Bristol fashion that she came to us. She will have to be perfect before we let her go. And if we let her go, it will be because we can find another, smaller, Ted Brewer design. One good old Brewer deserves another."

Reese telephoned Ted, who pointed us to his Morgan 38. Perfect size, 12 inches less draft and with the same sailing characteristics we love about *Unlikely*.

We have rummaged ship completely. On deck and below, all is being refinished. *Unlikely* is being prepared like a bride for a new mate. Right now I am sitting in the cockpit while Reese unwraps the wheel that I knotted together a quarter of a century earlier. The line comes off reluctantly. The sea has glued the line as tight as our marriage.

It is a bittersweet vision. At one moment memories flash of past joys. In the next moment flash the joys of new horizons on our next boat.

A new wheel to wrap. A new life for us in yet one more *Unlikely*.

Born to sail

Both Paul Niland and his beloved Bristol 35.5 sail their hearts out

by Mary Maynard Drake

The best days for Paul Niland are days spent on the water. The best of these are spent sailing *Boston Belle*, his Bristol 35.5, a Ted Hood design.

"Sailing is not a matter of life and death. It's much more important than that," believes Paul Niland. Now that he has spent four years renovating his 1980 Bristol 35.5, he can live that philosophy — with the full blessing of his wife, Peg.

"None of our neighbors goes out sailing as often as Paul does," she says. "He loves every minute when he's sailing."

Their sleek, black 35-foot sloop is frequently seen in Charlotte Harbor, a sailor's paradise on Florida's west coast. Paul often sails alone on that 10-by-20-mile, elbow-shaped bay, day and night. Sometimes he sails with Peg and occasionally with their visiting grown children or fellow members of the Isles Yacht Club. "Sometimes we go out with a sandwich and watch the sunset…just letting the boat drift," says Peg.

Paul can have *Boston Belle* under full sail in minutes; the dock of their canal-front home in Port Charlotte is only three lots from the harbor. "We moved here from Hingham (a Boston suburb) so we could sail all year," says Paul, 69, who retired from his Massachusetts electrical contracting business in 1989. Paul gravitates to the helm. "It's my job," he says.

"Paul's a go-go person, and sailing relaxes him. He's the sailor. I just go along for the ride," says Peg, who often reads or does needlework as they cruise (though she takes the helm while Paul handles sails). "He knows just how he wants things done."

> *"We moved here from Hingham (a Boston suburb) so we could sail all year."*

> *"I like everything about this boat…She's very forgiving. The bigger they are, the easier they are to sail."*

the weather's crisp and clear."

Once familiar with the harbor, he got bored. "I needed a bigger boat."

Paul searched for a Bristol because "they made a quality boat in the 1980s, and the draft of 3 feet 9 inches (with the board up) is very important here." He found his Bristol 35.5 in Oriental, North Carolina. The boat was a disaster — it had a rat's nest of old wiring, a leaky fuel tank, and was just plain dirty. After two weeks spent working on *Boston Belle*, Paul began a six-week cruise home.

"The first night, I headed for a recommended anchorage off Camp Le Jeune. I dropped anchor in the middle, prepared for the predicted 'possible showers.' By 2 a.m. the wind was howling 45 knots, gusting to 60, the boat was jumping around, and it was pouring rain." He dropped a second anchor and powered into his anchors, unable to see anything through the rain. At first light, he found he had dragged to within 50 feet of a steel bulkhead, despite having 50 feet of ⅜-inch chain out. "There was no bottom, just gunk. It took me five hours just to clean the boat."

Spruced her up

The rest of the cruise — down the Intracoastal Waterway, around the Florida Keys, and up to Port Charlotte — was uneventful. He stopped for a week in Hollywood, Florida, to spruce up the boat. "Peg'd throw me out if I brought it home the way it looked."

In reality, she was thrilled. "He worked so long, so hard for so many years, he deserved it," she says.

Once at home, Paul put *Boston Belle* in a do-it-yourself boatyard in Placida (14 miles away) and began work. He installed a new fuel tank, "a beast of a job" which required taking out partitions, removing the water heater, and fitting the new heavier-

In his search for a Bristol, Paul discovered a "disaster." But he has since turned his discovery into a dreamboat.

Besides sailing in Charlotte Harbor, they daysail and weekend among the islands, bays, and sounds along southwest Florida's Gulf Intracoastal Waterway. Paul loves to anchor in unspoiled coves on the uninhabited barrier islands. Peg enjoys Cayo Costa, Keewayden, and other gorgeous island anchorages where "we could fill a dump truck with shells in an hour," but prefers cruising to Naples, Sanibel, and other towns with shops and restaurants ashore. "We try to mix it up, with some of each," Paul says.

Minimal cooking

For longer cruises, Peg bakes and cooks ahead, packing *Boston Belle's* refrigerator and freezer with frozen prepared meals. "I just take what we need and do minimal cooking on board," she says.

Paul discovered sailing at age 35. "Hingham's a big sailing town, and it looked like fun," he says, "so I bought an old 18-foot Hustler sloop, fixed it up, and went daysailing. I'd take our girls out one weekend and our boys the next. That's how the kids learned to sail." He did a lot of night sailing in Hingham, because the short season, running a business, and raising five children didn't leave much other time.

Their 18-footer didn't make the move to Port Charlotte. Once settled in Florida, Paul bought a daysailer and spent months exploring Charlotte Harbor. "Prevailing winds are southeast, about 16 knots…less in summer," he says. "Winter means better sailing but lower tides (which are affected by the winds). "Best is a winter norther, when

gauge tank in through the port cockpit locker. He rewired the whole boat, removing a tangle of vintage wires. He stripped and revarnished the mahogany interior. He replaced the cane inserts in the cupboards. He rebuilt the Edson steering. He repainted the hull. He added all new canvas, an electric Autohelm, and two dinghies: an inflatable with a 6-hp Evinrude and a sailing dinghy. "Paul did everything," says Peg. "He can do anything."

All lines lead to the cockpit, which is covered by a large navy dodger and Bimini. Sails total 589 square feet and include the main, a 135-percent jib, a 120-percent jib, a storm jib, and a staysail. Paul retained the original Universal 24-hp diesel engine.

The cabin is traditionally laid out — a U-shaped galley with a gimbaled, three-burner propane stove, a stainless-steel sink, a refrigerator/freezer, and cabinets aft to starboard. There is a quarterberth and nav station with GPS, VHF, and chart storage aft to port, with the instrument readouts visible from the cockpit. The main saloon's port and starboard settees flank the bulkhead-mounted table and pull out to become full-sized bunks. Forward, there is a hanging locker to starboard and a head with shower to port. A V-berth fills the forepeak.

Now that he's redone the boat from stem to stern, inside and out, Paul says, "*Boston Belle's* like a new boat. She's very fast for an old girl and loves to flaunt her stern to other boats.

"I like everything about this boat," he continues. "She's very forgiving. The bigger they are, the easier they are to sail. If you make a mistake in a small boat, you're in the water."

Totally renovating their home, maintaining their rental house, redoing an old Cadillac, plus the usual home-maintenance chores keep Paul busy ashore. "But I can tell when he needs a fix on the water," says Peg. "He still sails more than any of our neighbors and friends. He loves it so much."

The interior of *Boston Bell*, the Nilands' Bristol 35.5 is spacious and comfortable. Paul redid the boat from stem to stern, inside and out.

Bristol 35.5

by Ted Brewer

Ted Hood's lively centerboarder still a great performer

The Pearson 35 and Tartan 34 first saw the light of day in the late 1960s, the Bristol 35.5C and Tartan 37 in the late 1970s. This galaxy of cruiser/racers thus illustrates the changes that occurred in the design of keel/centerboard yachts over that 10-year stretch. The most noticeable change, due to the shift from the CCA handicap rule to the IOR rule, is the shorter ends and reverse transoms on the two 1978 models compared to the long overhangs and more traditional sterns on the older boats. Speaking of tradition, the Tartan 34 has a very traditional and lovely Sparkman & Stephens sheerline and is far and away the prettiest of the four yachts to my eyes.

The Pearson 35 is, very definitely, the most conservative of the group and much more akin to an early 1960s CCA cruiser/racer than the others. She is the only boat to have a full keel/centerboard hull while the others all sport moderate fin-keel/centerboard underbodies with skeg-hung rudders. Not one of these boats is a lightweight by today's standards but the Pearson, carrying her beefy *avoirdupois* on a short waterline, has a displacement/LWL ratio of 371, quite hefty indeed. Another sign of her older heritage is the typical CCA rig with its low-aspect ratio mainsail, having a luff/boom ratio of only 2.23 compared to the taller 3.3 to 3.4 ratios of the other three.

The Pearson's performance may not be as competitive as the others, but she is still a desirable yacht for coastwise cruising, with roomy accommodations for her era and a spacious cockpit. She carries a good ballast ratio and has a reasonably low capsize screening factor (CSF). Still, her large 9-foot long cockpit could pose a problem in storm conditions offshore, so I would not recommend her for long ocean passages.

Speaking of the CSF numbers, these boats all have reassuring figures for offshore use, but it must be remembered that their shoal draft reduces the effectiveness of the ballast. If capsized, they may well right more slowly than the CSF number would appear to indicate.

The three fin-keel/centerboard yachts, with their lower-wetted-surface underbodies and taller rigs, are considerably more performance-oriented, but they are still of husky displacement by contemporary standards. Part of that weight is a big chunk of ballast, and all the boats have higher ballast ratios than are seen in most of today's beamy lightweights. Of course, by being shoal-draft centerboard designs, the ballast is not carried as low as on a deep-keel hull, so it is not quite as effective, pound for pound.

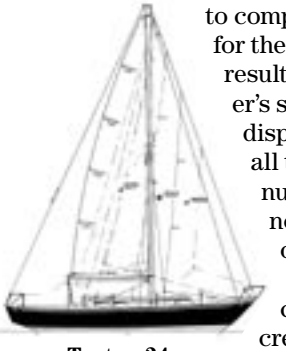
With the exception of the Tartan 37, these vessels are also considerably narrower than modern yachts. This adversely affects their form stability. Obviously, heavy ballast is necessary to compensate for this as well as for the higher center of gravity resulting from the centerboarder's shoal draft. The husky displacement that results gives all the boats a high comfort number so — even if they are no longer viable as first-line ocean racers — they still have much to offer as fine cruisers and, given a good crew and sails, club racers.

The Tartan 37 — having the widest beam, the deepest draft, the heaviest displacement, and the highest ballast ratio — is likely to be the most powerful of the four yachts by a good margin. The 37 has a small edge in sail area/displacement ratio as well and, given her other characteristics, might appear to be the pick for best performer. However, Ted Hood has a deserved reputation for designing fast centerboarders and the 35.5C was noted for being a lively boat in her day. I'm confident that a well-sailed Bristol can still put up a good show against any yacht in her size range, regardless of age.

Bristol 35.5C

Tartan 37

Pearson 35



Tartan 34

	Bristol 35.5C	Tartan 37	Pearson 35	Tartan 34
LOA	35' 6"	37' 3"	35' 0"	34' 5"
LWL	27' 6"	28' 6"	25' 0"	25' 0"
Beam	10' 10"	11' 9"	10' 0"	10' 2"
Draft	3' 9"/9' 6"	4' 2"/7' 7"	3' 9"/7' 6"	3' 11"/8' 4"
Displacement	15,000 lb.	15,500 lb.	13,000 lb.	11,200 lb.
Ballast	7,000 lb.	7,500 lb.	5,400 lb.	5,000 lb.
Disp./LWL ratio	322	299	371	320
Beam/LWL ratio	0.394	0.412	0.40	0.41
Bal./Displ. ratio	0.466	0.484	0.415	0.45
Sail area	589 sq. ft.	625 sq. ft.	550 sq. ft.	481 sq. ft.
SA/Displ. ratio	15.5	16.1	15.9	15.4
Comfort ratio	32.2	28.7	33.2	28.1
Capsize screening factor	1.76	1.89	1.70	1.82

Diesel hiccups

How a mysterious mechanical malady was finally cured

by Bill Sandifer

The other day we were out sailing and headed home when the wind died. We turned on the engine and motored back to the harbor. The engine ran fine for about the first hour. After that it ran, but it would vary its speed without my moving the throttle. It was as if it was hunting, up and down, up and down. It would go from 2,200 rpm to 2,600 and back to 2,200, wait a little while and then do it again.

We had had this condition last year, and I couldn't figure out what it was or find anyone who actually knew about it. This year I was determined to fix the problem once and for all because we were planning a Florida cruise and did not want to have questionable engine control.

After calling around to several people, most of whom did not have a clue what the answer was (like me), I found a fellow who said, "Oh yeah, that's air inhalation."

"Air inhalation?" I thought, "When the engine increases in rpm?"

The answer was yes, it does that. It is a known phenomenon and yes, it is caused by air inhalation affecting the governor. The advice I got was to check the filters and check the suction tube to be sure that there was a free flow of fuel to the engine and that air is not entering the line at some point. The air disrupts the governor control of the speed of the diesel and allows it to speed up momentarily. He said when we had a free flow of fuel to the engine and found the air leak, the problem would go away.

Unbeknownst to him, fuel filters had been on my mind since they hadn't been changed in a while. As a matter of fact, I had bought a brand-new Racor filter and new filter elements only to put them in the spare parts locker thinking I would get to it one of these days. Now "one of these days" had arrived! In addition to the filter changes, I had to look for an intermittent air leak as well.

Impossible to reach

The reason I was reluctant to change the filters was that the primary filter (the one off the engine) was mounted alongside the engine underneath the water hoses, underneath the bilge pump hose, and screwed to the bulkhead. It was impossible to reach (see photo on Page 68). There was no way I could check it, clean it, and put it back. Even lying on top of the engine, it was a one-handed proposition if I could get to it at all. I decided it was necessary to redo the entire fuel system, start from scratch, rip all the old stuff out, and replace it with new.

"The moral of this story is that fuel filters and an air-tight fuel supply are vitally important to the health of your diesel engine."

Easier said than done. The old primary filter was extremely difficult to loosen from its lines and didn't want to come out at all. The lines actually draped down into the bilge and had obviously been spliced at some point into two or three sections. This was very unsatisfactory as far as I was concerned and might, in fact, be where the air leak was located.

After much ado, the original primary filter came out with its attendant fuel lines. It was filled with an incredible amount of water and black goo. I don't know how the engine ran at all. I took the secondary filter canister off the engine so that everything was removed.

The only problem I had was the fuel supply to the secondary filter from the mechanical fuel pump underneath the manifold on the port side was totally inaccessible. I could feel the fitting, but I couldn't see it. There was no way I could reach it. I decided the better part of common sense in this case was to cut the line and splice it because it was otherwise impossible. I cut this and took all the lines off the boat.

Better access

The next day I decided where to put the new filter to improve access. Up forward in the engine compartment on the port side is a piece of bulkhead with nothing on it. It is accessible by removing the companionway steps. I thought this was a perfect place for

a filter (see photo on opposite page). I could get at it and under it. I could drain it, put a new element on it, and do anything I needed to with it. The new filter was installed in that location and new lines, selected especially for their fire resistance, were run from the tank to the filter. I added a new gadget called a filter gauge that measures the pressure drop through the filter. At a pre-determined reading, it is time to change the filter cartridge. I mounted this gauge on the bulkhead adjacent to the galley so it would be easy to see and easy to read.

After running all the new lines, I filled the primary and secondary filters. I thought I had bled the system. Well, I hadn't. I started the engine; it ran for 10 seconds and shut down. So much for that! I had to bleed the system … a real pain considering I have to lie on top of the engine to get at the injection pump to bleed it. I followed the manual exactly, but no matter what I did the engine would not start. I gave up and called a qualified diesel mechanic for help.

He arrived and could not start the engine either. Two hours later, we were no better off than when we started. He recommended changing the old mechanical fuel pump for a new electric model, thinking the air problem might be coming from the 25-year-old mechanical pump. It would also make future fuel filter changes a lot easier, as all I would have to do was flip a switch, and fuel would be pumped through the system. No more lying on the engine and physically pumping the mechanical pump under the manifold.

Never be sure

I agreed to the work, and we set a day aside to do the changeover. I was sure this would solve the starting problem once and for all. But you can never be sure of anything when working with an engine!

We did all of the work and installed the new pump under the new primary fuel filter. We had to completely isolate the old mechanical pump by removing the fuel lines but left the pump body in place, as it connected to the oil gallery where it was driven by a lobe on the camshaft. If we removed it, we would have been left with a hole in the block. Anyway, there was no way to get at it without removing the engine from the boat.

"… the primary filter … was mounted alongside the engine underneath the water hoses, underneath the bilge pump hose, and screwed to the bulkhead. It was impossible to reach."

The new electric fuel pump worked fine, except we could not get it to prime the engine. Back to the drawing board. I decided to remove the secondary filter as we had proved we had lots of fuel to that point. When I looked at the new secondary filter I realized the fuel was supposed to exit the filter at the rim. This path was being blocked by the gasket that is supposed to prevent leakage. What to do? The filter was full of fuel that could not get out to prime the system. The filter I had removed, the old one, had a series of half-moon holes around its perimeter to let the fuel out. The new one, bought with the same part number as the old one, did not have these holes (see photo). In an attempt to remedy the problem I took an ice pick and carefully punched a ring of holes in the top of the secondary filter just like the old contaminated filter had, reinstalled the secondary filter, primed the system per the manual, and the engine started. Problem solved!

There is good access to the new primary filter, facing page. But the fuel has to be able to get out of the filter. Two identically numbered parts from the same manufacturer: the old, above right, and the new, above left.

Roundabout cure

This was a really roundabout way to solve my mysterious diesel problem, but it is finally solved. Two people spent two days trying every trick they knew.

The moral of this story is that fuel filters and an air-tight fuel supply are vitally important to the health of your diesel engine. This is not to slight gasoline engines because filters are important there, too. I replaced the old filters on the gas engine in my Pearson Ariel and put the new ones in an accessible spot. Every few months when I checked the filters, any water that had accumulated could be drained.

The filter could also be easily topped off so that the engine did not have much of an air bubble to contend with. But gasoline engines are more tolerant and can digest a little air now and then. A diesel cannot stand any air at all. My current engine is 25 years old and was not the self-bleeding type. It can now self-prime with the electric fuel pump.

I called the engine manufacturer and explained my problem with the secondary filter. They sent me a new secondary filter, free of charge. It had a set of half-moon holes just like the original filter. Two different filters with the same part number? Yes, but now I know which one to use.

The total bill for all of this work was about $600. One cannot buy a new engine for $600, so it was worth it. Not only that, but now I have confidence in my fuel system and engine for the trip I have planned.

If there is any question about access to your fuel filters or fuel pump, take the time (it will probably take you about a week, working part time) to find and remove the old filters. Run the new lines, install new

filters, install a new electric fuel pump, and bleed the system back. Be sure the replacement parts look exactly like the ones you are replacing (except for the new fuel pump, of course) lest you have my problem.

It is unusual in today's quality-conscious manufacturing environment but mistakes still happen. I have proof of that.

Cheap insurance

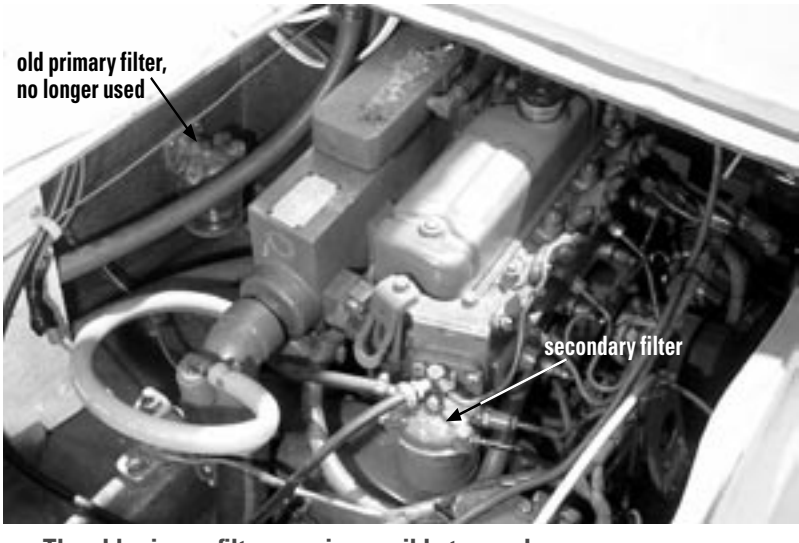
Clean filters and an electric fuel pump are cheap insurance for the trouble-free use of your boat. The new electric fuel pump is definitely an improvement. I did not know you could add one so easily. It costs a couple of hundred bucks, but I think it's worth it.

"The new electric fuel pump is definitely an improvement. I did not know you could add one so easily. It costs a couple of hundred bucks, but I think it's worth it."

Now that I think of it, the old gasoline Atomic 4 had an electric fuel pump added at some point before I bought the boat.

As a final thought on another engine auxiliary part, the external voltage regulator for the alternator on my engine quit this spring and could not be removed easily. I found that I could buy a regulator that mounts on the side of the alternator in place of the old one and it is easily rewired. At the rate I am going, nothing will be original on this engine except the block. That's OK as long as it keeps running. Sometimes after-market products make life easier. They certainly improved mine.

If you run into any problems with your engine, send me an email message at devilsel@datasync.com. I'll help you through the crisis, and we'll both learn something.



The old primary filter was impossible to reach.

by Greg Delezynski

Accessible bilge pump

Greg used a heat gun, at left, to bend PVC pipe to fit his bilge. The pump and switch are held to the pipe with clamps, above at left. A thumb-screw release allows for quick access, above at right.

Paint this picture in your mind: you are at sea after dark, the waves are a bit more than you like, and the shaft packing is leaking. It's not life-threatening. The automatic bilge pump can handle it. Then the pump stops!

Now you are lying on the cabin sole while the boat is bouncing about. Your job is to reach into the bilge with cold salt water up to your armpit and figure out why the *@#%^$# pump stopped working!

When our Nor'Sea 27, *Guenevere*, adopted us, the bilge pump was held in place in the deep bilge with a small board screwed into the side of the compartment. This board had an L-shaped bracket on the bottom of the board that the pump was attached to.

About two years ago, I came home to the boat to find the bilge-pump circuit breaker popped. During the troubleshooting, I had to remove the pump by removing the screws and fishing out the pump. As it turned out, a small screw had found its way to the impeller and jammed it. Once removed, all worked well.

After that incident, I began thinking about what that job might be like at sea in heavy weather. It gave me a chill, so I began thinking about how I could improve the pump mounting to make removal easier. A few weeks ago I was helping a friend rewire her fuel pump aboard her Rafiki. I noticed she had a short length of aluminum tubing holding her pump in place. That looked a bit better than a board that was bound to give out sometime soon. But it still had two screws holding it in place. I went off in search of a better idea.

"…I began thinking about how I could improve the pump mounting to make removal easier."

A better idea

At first I thought about using a short piece of stainless-steel rail tubing. I thought that would work better than the aluminum tube. As I was looking at the rail tubing in the local marine store, the better idea hit me.

I bought three ⅞-inch plastic rail clamps for about $70. I had a short length of ⅞-inch stainless-steel tubing on the boat and intended to use it, but it didn't fit very well because of the curve of the bilge. I thought of having a local rail shop bend it for me, but I had an even better idea.

I bought a piece of ½-inch Schedule 40 PVC pipe at the local hardware store for about $3. I used my trusty heat gun to make two shallow bends in the pipe so it would fit the bilge. It ran from where the old board was attached to where the pump needed to be.

I mounted clamps at the top and bottom of the PVC pipe. Then I used two screws through the rail clamp to hold a hose clamp large enough to go around the top of the bilge pump, thus securing it to the pipe. I used a fender washer with each screw. A small square of inner-tube rubber protected the pump motor and allowed the clamp to hold the pump securely.

I used the third rail clamp to mount a Water Smart pump switch. As it turns out, the mounting holes on this switch are spaced just right to allow it to use the pre-drilled holes in the rail mount. I chose this switch because it runs the pump for an extra 8 seconds after the water level drops below it.

This is important in the Nor'Sea, as the deep bilge is very narrow. If a float switch is used, the pump will often cycle from the water that drains back down the outlet hose. By mounting the new switch with the rail clamp, I can adjust it up and down to get it at the exact position needed.

Once it was all mounted up, I ran the wires up the PVC pipe, and secured them using plastic electrical ties. To check the pump these days, I need to loosen just one wing nut and pull up on the PVC pipe. PVC will last almost forever if you keep it out of the sun. This is not a problem for our bilge!

The shower solution

How to shower without having a shower aboard

by Connie McBride

A CRUISER FRIEND ONCE SAID ABOUT HER FIRST TRIP UP THE Intracoastal Waterway, "We had to stop at a marina every few days for showers." This fact helped explain why their cruise was so short and financially draining. At the time my husband, three boys, and I were weeks from dropping our docklines and beginning our new lifestyle as frugal cruisers. Even monthly marina stays were out of our budget.

Though I thought I knew the answer, I asked anyway, "What about a solar shower?" The rolling of her eyes told me what I had suspected. They are great…unless it's chilly, raining, really windy, you're in a busy anchorage, you want some privacy, you'd like more than a trickle of water at a time, or you want to get really clean everywhere. I knew that before our paths diverged I would have to show her our shower.

> *"Our tank holds 2½ gallons, and the five of us take two showers each from one tank of water."*

Like many old boats, our 1979 Creekmore 34 did not come equipped with a shower. When our cruising consisted of four-day weekends, a solar shower was adequate.

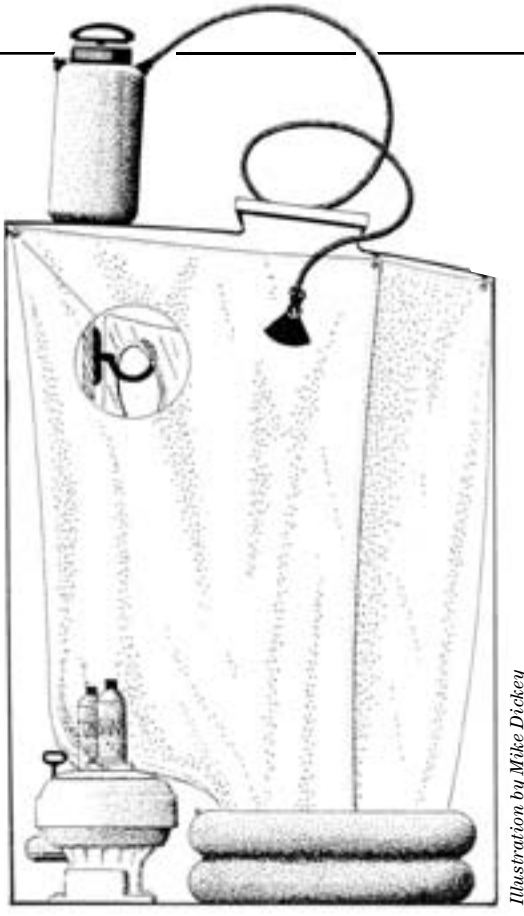


Illustration by Mike Dickey

But once she became our home, we needed a real shower. It seems that most good ideas start with what worked for someone else and evolve into what works for you.

In one of her books, Lin Pardey mentions using a pressurized chemical sprayer as a shower. She simply gives it a few pumps and voilà! — pressurized shower water. Lin's idea is the source of our shower water, with a few changes. Though I originally wanted the tank in the head, there was simply no room. Since the tank is 9 inches around and 18 inches high (without raising the handle), our little head could not sacrifice the space. Instead, we strapped it to the mast tabernacle on deck until we could figure out what to do with it. To our surprise and delight, it is out of the way up there, not eating up storage space. And the water is preheated on most days. You have to have the foresight to pump before you get in the shower, but you only forget that once.

Continued on Page 72

Continued from Page 71

Cracked open

Our head has a hatch that happens to be inches from the mast. The hatch can be cracked enough (even on yucky days) to accommodate the hose (modified to 10 feet long). We replaced the original little nozzle with a garden hose sprayer complete with on/off switch. Though most of the water arrangement is simply a matter of taking someone else's idea and making it work for us, it is inside the head where things get creative.

"You have to have enough forethought to pump before you get in the shower, but you only forget that once."

Yes, we are cruising with three boys on a 34-foot boat and no, we are not crazy…yet. Though it has been nine years since the youngest was a baby, I clearly remember bathing him in an inflatable bathtub. I had to invest the $10 to be sure, but it turns out that the head sole is inches from being the exact size as the inflatable baby bath. With the tub in place, shower curtains (clear so you don't feel so confined) are overlapped and hung from six cupholders. The bottoms of the shower curtains hang in the tub, collecting the shower water.

By hanging the curtains to cover the wall, the top of the shower is exactly as big as the head. It takes three shower curtains to cover all of the walls in our average-sized head. This gives us lots of elbow room. With about 10 minutes of preparation, including blowing up the bath, we have a warm, private, comfortable shower.

When we are finished, we lift the tub so the drain is over the head sink and pull the plug. The inflated sides of the tub make it rigid enough to lift even when holding the water from five showers. The last person in the shower hangs the tub and curtains on deck. When they are dry, we fold them into a small 12- by 4-inch package. No power use, permanent installation, or smell from a shower sump. Best of all, the entire setup cost less than $50.

Our tank holds 2½ gallons, and the five of us take two showers each from one tank of water. One suggestion: make sure to hang the shower curtains at a height that allows enough slack to make a shelf out of the head seat for soap and shampoo and yet still drain into the tub.

Despite what my family may think, we are hardly roughing it. Our boat is slowly becoming a lovely comfortable cruising home. Safe sailing and happy showering!

Another approach to showering

by Jerry Powlas

It's nice to have a shower now and then. Nice for you, nice for your shipmate. Even fairly small new boats may come with at least an optional shower stall and all the equipment to take a hot shower. But many older boats have none. No place to shower and none of the gear needed either.

If you decide to convert some other space or add shower equipment to an enxisting head, you need a pressure water pump, a water heater, a shower head with mixing valves, and a shower sump with overboard pump. The cost for all that gear, not including the piping and possible labor to install and connect it, is roughly $900.

Here's the kicker: many boatowners who have showers installed refuse to use them because of the mildew they acquire. *They* don't shower on board either. Given that discouraging state of affairs, it's time to think outside the box.

How about an alternative system design? Go to your favorite gardening supply store and buy a flower-watering can. Splurge and buy a big one. You're going to be out approximately $7.50 for the can, but you are done buying parts for this project. You might want to pick up a bouquet for your lady love so you don't feel cheap.

To use your new shower system, put your foul weather gear over the cabin seat cushions, maybe even use the mainsail cover to protect things. Get out a couple of pans from the galley and fill them with water. Heat the water until it feels like the right temperature for a shower, and pour it into the watering can.

When plumb full, our sprinkling can holds about 7 quarts, enough for one comfortable shower. You'll be amazed how fast you can heat 7 quarts of water on the galley stove. We find that while the first person is showering, water for the second shower can be heated. The galley stove keeps up nicely. It is about as fast as a domestic water heater. One of us pours water for the other, although I have found that I can rest the watering can at the top of the companionway ladder and tilt it to pour over myself when I sail alone.

The water runs off into the bilge. That is not necessarily the best, but it is not so bad either. We have been showering in the cabin of our boat for years when vacationing remote places.

After showering, we pump the soapy water out of the bilge. Then we fill the shower can with a seawater rinse, pour it in the bilge, and pump out again. Once we're back in our slip, where water is easy to get, we spray the bilge down with a hose and pump it out once more. Because it has better circulation, the cabin does not acquire the mildew which grows in a shower stall. These rinses help keep your bilge clean, and the showers keep you clean, too.

Total cost for the project is $7.50 for the sprinkling can and $5 or $10 for the flowers for your lady love. It's hard to say which will make you more popular with your shipmate.

by Jerry Powlas

Plotting tools

Two very different aids to navigation

Karen Larson checks out the new navigation tool aboard *Mystic*, a Weems & Plath Chartkit Plotter. The plotter comes with a case, facing page at left, to protect it when stowed. It fits flat against one side of *Mystic's* wet locker. Facing page below right: a portable charting table which can be used in the cockpit. What a concept!

Back in 1968 when I was a navigating officer on the *USS Newport News*, we had a chart table that would hold a full-sized chart without folding it. Loran coverage was extremely sparse in the western Pacific, and GPS didn't exist, so navigation near shore consisted of plotting visual bearings and radar ranges to get a cross-fix.

The plotting tool was a parallel-motion protractor. We called them PMPs for short. It was almost exactly the same tool used by engineering draftsmen until CAD came along. The device was a pantograph with a vertical and horizontal rule locked at right angles attached to a very spiffy rotating mechanism so you could align the vertical or horizontal rule with any bearing you wanted — either set the bearing or read the bearing between two positions on the chart. I've missed that thing ever since I left the ship.

Now Weems & Plath is selling one that is much more compact but still has a pantograph system that keeps the single straightedge at any preset angle as you move it over the chart. It's forte will be plotting cross-bearing fixes and laying out courses.

It's unlikely that anybody will come up with anything non-electronic that beats this tool for speed, short of the old Navy parallel-motion protractor and chart table (which was way too big to fit inside our boat's cabin).

As soon as I saw the Weems & Plath version, called the Chartkit Plotter, I understood it. First you align the compass rose to either true or magnetic north and lock it down. Now you're done with that adjustment until you change charts.

Lock straightedge

The other thumb wheel allows you to rotate and lock the straightedge at any angle you wish, calibrated in 1-degree increments. You can either loosen it, lay it on the chart and pick off the heading between two points, or set it to a bearing and draw that line on the chart. This last would be the way you'd do a cross-bearing fix.

These days, the cheap and ubiquitous GPS receiver encourages you to simply plot position by latitude and longitude, which is ordinarily fast and accurate, however it's just good practice to be proficient in visual piloting — the heart of which is the very non-electronic cross-bearing fix.

Even if you depend exclusively on GPS, this nifty Chartkit Plotter is a cockpit-sized mobile navigation station. It's not exactly a "laptop," as computers have redefined the term, but it is portable and can be used on your lap or on the cockpit seats for plotting GPS coordinates or for doing visual piloting. The tools are all attached, which is handy in the cockpit (or below whether you have a navigation table or not, for that matter).

"Even if you depend exclusively on GPS, this nifty Chartkit Plotter is a cockpit-sized mobile navigation station."

The chart is held down by a plastic shield that keeps some of the rain off the chart, prevents the chart from blowing away, and allows you to write on the chart (actually on the plastic) and erase at will. No more careful and neat pencil marks right on the chart. Weems & Plath supplies four colors of dry-erase markers that can be used on the plastic and can be erased with a moistened tissue (or by the rain or mist, despite your wishes to the contrary).

Shallow tray

The Chartkit Plotter was developed by MapTech with a shallow tray below the plastic chart sized expressly to hold a Chartkit book. However, larger charts can be folded and used with this tool. These charts can also be used on top of the plastic shield if you prefer to leave pencil marks on paper charts to show where you've been.

At $89.99, the Chartkit Plotter is not inexpensive (although Weems & Plath tells us that the production and distribution has been taken over from MapTech and the price is now lower than it was due to an anticipated higher sales volume. And it is a rather large tool (22.5 inches by 20.25 inches) for use on a small boat. But if you're cruising on a small boat, particularly one without a navigation table, this may be *just* the thing you need. It's a solution for any sailor wanting to do cockpit navigation on a boat of any size.

Because we liked it so much, the Chartkit Plotter is available from *Good Old Boat* <http://www.goodoldboat.com>; 763-420-8923; and from Weems & Plath <http://www.weems-plath.com>; 800-638-8713.

Ted Brewer's navigation tool

While we're on the subject of simple and portable aids to navigation, here's a tip and a tool recommended by Ted Brewer. Not long ago he sent a clear vinyl sheet to Karen with a note saying, "Here's a little gift for you from Betty and me. It's a navigation device I first saw aboard *Storm* back in 1960, so I bought one for my own boat and used

Ted Brewer discovered a navigation shortcut in 1960: a lined grid on flexible vinyl, above. Line it up with the compass rose to get a course and (if the chart has the right scale) use the gridlines to determine distance. He used this grid for more than 40 years and then passed it along to *Good Old Boat*.

it right up until we sold our little motorboat last summer. Unlike parallel rules, it can be used anywhere, even on your lap in the cockpit, and it's hard to break!

"As you can see, it's simply a sheet of flexible plastic with parallel lines printed on it. You lay one of the lines over your course, making sure that the rest of the sheet is over one of the compass roses on the chart. Then simply read off your compass direction on the magnetic scale. A point to note is that the marks along the edges and on the heavy lines are just about one nautical mile apart at 80,000:1 scale, or a half-mile apart at 40,000:1 scale, of course. The lines are a bit shy, perhaps from shrinkage of the material over 40 years, but close enough for all practical purposes. It saves you from stabbing your leg with dividers when you're working in your lap. Try it, and I'm sure you'll like it — it's always been my favorite navigation gizmo. In fact, that would be a good name for it: The Nav Gizmo."

We did try it and found it to be a useful tool for figuring out a course to steer, even though most of our local-area charts are not of the scale that would make it the most useful by also providing distance. For readers who would like to make their own clear plastic overlay, Ted says, "The mile marks should be 0.91 inches apart for a nautical mile at 1:80,000." It occurs to us that other sheets with different measurements could be made up for local charts with differing scales.

by Don Launer

Emergency starting button

Don's emergency starter switch is located inside his engine compartment next to the runaway plug, discussed in the July 2003 issue of *Good Old Boat*.

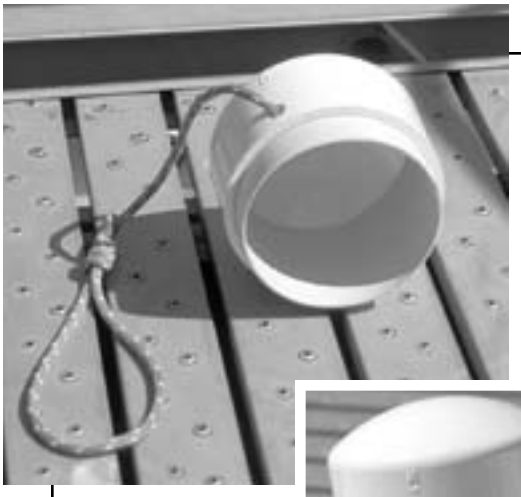
MANY DIESEL ENGINES ABOARD SAILBOATS HAVE COMPRESSION-release or decompression levers on top of the engine for each cylinder. As their name implies, these levers hold open the engine valves and prevent normal compression within the cylinders. Although seldom used, they can become very important when you find that your batteries don't have enough juice to turn over the engine for starting. It is then that those decompression levers are worth their weight in gold.

Since diesel engines have very high compression, they require lots of amperage from the battery to turn them over. If the batteries are too low for the job, or if the batteries and engine are very cold (cold batteries have less cranking capacity, and a cold engine is harder to rotate) you're left stranded — that is, unless your engine has decompression levers.

By opening these levers and eliminating engine compression, the engine can usually be turned over by the starter, even when the battery is very low. Then, once the flywheel is rotating at a decent speed, and while still holding in the starter button, a compression-release lever on one of the cylinders can be returned to normal. Usually this cylinder will start the engine running, and the levers on the other cylinder(s) can then be thrown into the compression position.

The trouble is, to do this requires more than one person: one in the cockpit operating the ignition key or starter button and another next to the engine to throw the compression-release levers at the proper time.

Since I frequently singlehand my boat, I have installed an emergency starter button inside the engine compartment next to the engine. This back-up starter button can be operated with one hand while the other hand is on the decompression levers. This push-button-type momentary switch is wired across (in parallel with) the engine control panel's starter button (if there is one) or across the starter terminals of the key-switch.



by Gregg Nestor

Hard-body winch covers

LIKE MOST SAILORS, I take pride in ownership. Every item not in use is stowed in its proper place, and anything with a cover is covered. It is because of this attention to detail that *Splash*, my O'Day 222, routinely receives compliments from other sailors.

I recently needed a couple of winch covers. Wanting something more substantial than the conventional cloth covers, I paid a visit to the local home-improvement store. There I obtained a pair of 4-inch PVC end caps and a 13-inch scrap piece of 4-inch PVC pipe. With a minimal amount of work, these were transformed into a pair of hard-body winch covers.

Fabricating the covers was a snap. I cut the scrap length of pipe to match the height of the winch and sanded all cut ends and rough spots. Using PVC cement, I glued the pipe into the end cap. To finish off the winch cover, I drilled a small hole into the side of the end cap and attached a short lanyard of ⅛-inch line.

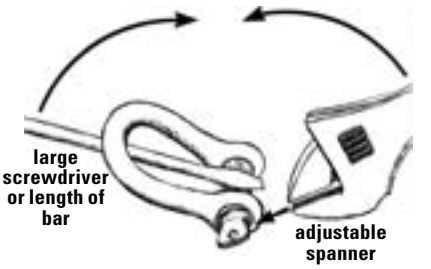
PVC end caps come in many sizes, however the ones best used for making winch covers are 4, 5, and 6 inches. All of these are wide enough that when a short piece of PVC pipe is inserted to accommodate for winch height, the internal diameter is still greater than the nominal pipe size. Measure the diameter and height of the winch before purchasing the materials.

Not only do the hard-body winch covers afford protection and look good, when turned over they are convenient receptacles for storing springs, pawns, and associated parts while servicing the winch.

by Nikki Perryman

Double the muscle

A second screwdriver increases the leverage on slotted deck-filler caps.



Unscrewing a slotted deck-filler cap with a screwdriver can be hard work, especially if the cap has corroded in place. Small screwdrivers tend to turn within the slot, and even large ones don't give you much leverage.

Employ a second screwdriver, however, and you'll find the job much easier.

Cross the screwdrivers, locate their heads at opposite ends of the slot, then rotate the handles counter-clockwise. By bracing each screwdriver against the other, you greatly increase leverage on the filler cap.

And while we're on the subject of undoing things, here's an effective way to attack that stubborn shackle pin you can't budge with a marlinspike. Prepare for battle with one large screwdriver (no lightweights please, they'll bend) and an adjustable wrench. (A steel bar will serve in place of the screwdriver if you don't have one large enough.)

Grip the shackle-pin tab firmly with the wrench and thread the screwdriver through the shackle so that its head sits squarely on the pin. Check to make sure you'll be turning the pin in the desired direction, then squeeze the two handles toward each other until the pin turns. If you can't dislodge the pin using this method, it's time for desperate measures indeed!

by Alan Lucas

Handyman's hand bag

WHEN YOU'RE USING THROW-AWAY BRUSHES TO APPLY resin to small fiberglass jobs or saturating timber with rot-proofing epoxy, things can get pretty messy. By cloaking your hand in a freezer bag, runs, drips, and splatters cannot get on your skin. When the job is done, the drips and splatters are contained inside the bag when it is turned inside out over the brush before being discarded.

A plastic bag and a disposable brush simplify small jobs by reducing cleanup time.

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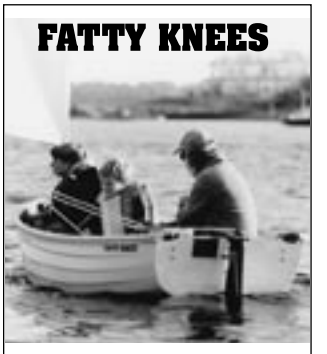

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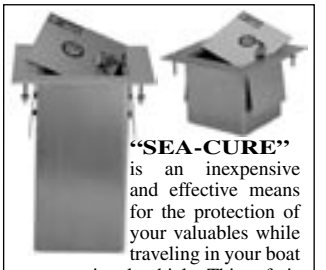

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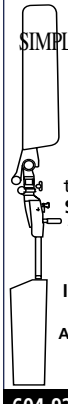

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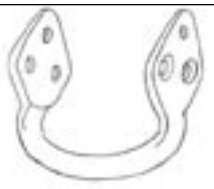

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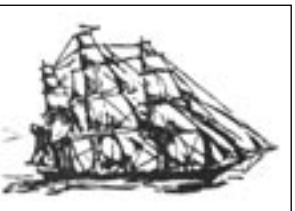

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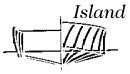

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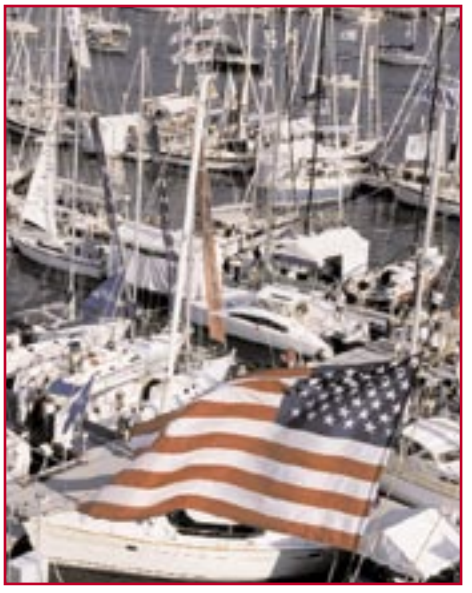

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Advantages of the indirect drive

I just read the first part of Don Casey's interesting article on repowering that appeared in the December 1999 article. (I know: where have you been?) After some 25 years of checking the alignment on our engines and painfully aligning the engine, sometimes with professional help, I found — on a canal boat in England — thrust plate drives. On the steamships that I served in, the propeller shaft pushed (or pulled) with a thrust bearing against a thrust plate. The force of the propeller did not push against the transmission and engine as in an auxiliary sailboat, but rather directly against the hull!

What a rediscovery! No more meticulously aligning the shaft and engine, no more noise and vibration transferred from the engine to the hull through the shaft! No more wrenching forces on engine mounts if a line wraps around the prop at cruising RPM!

So, when repowering an auxiliary sailboat, think of also installing an indirect drive. New diesel engines are usually smaller than older ones for the same or slightly more horsepower, so extra space is available for some new things. One source for information on indirect drives in North America is Dave Lee at <hppt://www.drivelinesnw.com> or 800-552-7647.

The initial cost is steep — no question — however if there is money available for integrated electronics or a fancy dinghy, then there should be some thought put to spending the kitty on an indirect drive for a good old boat.

Knick Pyles
Point Roberts, Wash.

Screw slots, for Pete's sake!

I just picked up my first copy of your fine magazine. Where has this publication been all my decrepit boatowning life? I have one beef, though; I read Ted Brewer's otherwise excellent article "Searching for Quality" (May 2003), and Aaarrrgggghhh! There it is again! What anal-retentive moron was the first guy to say all screw slots must face the same way? In Ted's defense, he was talking about machine screws, which implies there is a nut involved. (Must all the flats on the nuts also be parallel?)

Unfortunately, I often see this practice applied to wood screws. This is akin to turning all six tuning pegs on a guitar the same way as a perverse sign of "guitar quality." The look may appeal to a misguided aesthetic, but the out-of-tune guitar would sound awful! Likewise the random tightness of parallel wood screw heads would likely result in ½ thread pitch gaps and transfer most of the loads in the bolt pattern to the tightest screw. Will someone PLEASE debunk this myth?

By the way, I have the utmost respect for Ted Brewer and his outstanding achievements in yacht design, even if his high standards only give my beloved 1964 Cal 40 about a B+ for quality. I'll try for an A in the next 40 years of continuous upgrades, even if my screw heads are all ahoo.

John Egan
Marblehead, Mass.

Loss of RPM

I have a Universal M-25 marine diesel in my Westsail 28. The engine has 1,100 hours and in the last year has lost some RPM potential. I used to be able to reach 3,000-3,200 RPM. Now I can only reach about 2,500 RPM. The fuel system seems fine, and everything else is well maintained. Any guesses?

Mike Rosauer
Sausalito, Calif.

Our response: a few things to try

Every time my diesels have acted like that the fuel system was the problem. When you say it seems fine, I don't know exactly what that means. If you have not already done so, try the following:

Remove all the fuel from your tank, passing it through a good filter like a Baja filter or one of the latest and greatest from West Marine. This will clean the fuel and get the water out of it. Put a little additive in when you replace the fuel to about a quarter tank (or less). Use the kind of additive that kills the bugs that thrive in the interface between the water and the fuel. It is critical that you follow directions with this stuff. Don't use more than the directions suggest. After the fuel is clean, run the engine for maybe half an hour, preferably on rough water to stir up the fuel.

Jerry Bates sends us a photo of his 1964 Pearson Vanguard at her mooring in Buck's Harbor, Maine. It reminded us of the misty day at Mystic Seaport on the cover of our July issue. Another great shot. –Editors

Then go home and replace both the primary and secondary filters. If you only have one on-engine filter, plan to install another after you solve this problem.

At this point, my problems have always been corrected. If the problem is not fuel, check the air cleaner if you have one; make sure it's not restricted. You leave the engine at this point unless you are a pro.

Left behind are the following:

- Tappet clearances are off. Set your tappets or have them set before you consider any of the other alternatives because all the rest are much more expensive.
- Loss of compression from blown head gasket, burned valve, worn or damaged rings.
- Injector problems, air leaks into the fuel system.

There are certainly other possible problem areas from a diesel, but that exhausts my list. Now, away from the engine, there are places to look.

- ***Weight gain.*** Is your boat much heavier than it used to be? Depending on the reserve power you have and the prop, you may simply be going slower because you are pushing more.
- ***Dirty/rough hull.*** Is you hull smooth, or has it gotten fouled? A fouled hull is much harder to drive through the water.
- ***Fouled prop.*** Same with the prop.

Jerry Powlas
Technical editor

Westsail contact

Pat Tilson, who calls himself "the Editor-and-Sort-of-Head-Guy of the Westsail Owners Association," has moved closer to the boat and has a new address and phone number: 705 5th St. South, Safety Harbor, FL 34695, 727-797-4934.

*He writes, "The magazine has come a long way and is my first read these days!" We love it when folks talk like that! –**Editors***

Removable trailer lights

Rosie Too is an 18-foot catboat by Nowak and Williams. She has an inboard diesel, wheel steering, and a tabernacle. I saw an article in your magazine a few months back (January 2003) on removable lights on a trailer to prevent water damage. I install an extra set up high because I travel I-95 (1,200 miles) to Florida and back each year so I can sail all winter. The light bar just bolts to the rudder fitting, and I spliced plug-in taillight wires. Also see mast, boom, and gaff yoke for travelling.

Ted Lange
Columbus, N.J.

Impeccable taste

I don't fall in love very often. When I do, I like to think my taste is impeccable! I fell just once for a member of that oh-so-much-fairer sex, and that flame burns brightly after nearly three score years.

I occasionally fall for a truly beautiful boat. When I can, I take a photo to remember her by. When I read "Facelift for a Teak Lady" in your July 2003 issue, I said, "I know that beauty! Going to my gallery of old-but-not-forgotten loves, I found the enclosed photo. While on a vacation trip to Alaska, I walked the marina at Seward looking for beautiful boats and found the *Esmarelda*. Given the date on the back of the photo, I would assume that is Drake Diteman aboard her. The back of my photo reads: "Confucius-class all-teak sloop built in Hong Kong, 19 feet overall (including boomkin), 16 to 17 feet on deck. 1930s design. 1950s model. *Esmarelda* at Seward 7/28/91." I presume that I got that data from Drake. Small world, isn't it?

I also fell in love, the same day and marina, with the *Susie Q* of Anchorage, a 1979 28-foot Ed Monk design built by Windward Marine, for sale for only $28,000. Mary Lu declined to drive our ¾-ton pickup and 35-foot fifth wheel camper home so I could sail that sweet double-ender home!

John Butler
Rogers, Arkansas

Fond memories

Nostalgic ramblings as a result of the July 2003 issue: Jerry Montgomery was working for Arthur Marine in Costa Mesa, builder of the Balboa 20 and Balboa 26, when I first met him. Great guy and talented boat builder, as was Richard Arthur who founded Arthur Marine in 1968. You've heard the story of how I got into the boat business…I bought a Balboa 20 for the Lake of the Woods Regatta in 1969 to replace my O'Day Daysailer (#706). I spent a weekend in L.A., met and sailed with Lyle Hess and Jerry on his demo B20 while Richard Arthur was on the committee boat. I bought the boat, became a dealer, spent the first six months of 1971 working half time for Arthur (one week in Costa Mesa and one week on the road establishing dealerships, with the balance of the month running Midwest Trail and Cruise Sailboats Inc. (shortened in 1972 to Sailboats, Inc.). Great experience and fun! Coastal Recreation (Aquarius) bought Arthur Marine in July 1971, at which time I was a superfluous marketing manager and have been self-employed ever since.

Jack Culley
Superior, Wis.

Jack's job loss was the beginning of something big for the rest of us. He's been very successfully self-employed ever since. Sailboats Inc. is a major marine business on Lake Superior and Lake Michigan, offering sail training courses, charters, and marine services through marinas in Manitowoc and Superior, Wisconsin.

Congratulations on five years

You found your niche and you cheerfully pursued it, reaching for the highest standards and ethics. It just goes to show you that sailors are some of the most persistent, patient, talented people on the planet! You've treated everyone you work with courteously. I am sure I'm not alone in appreciating the consideration and camaraderie. I was very jealous that Scott had a rendezvous on the canal (through Michigan's Keewenaw Peninsula) with you last summer. Maybe this year I'll be aboard when *Mystic* and *Chip Ahoy* cross paths.

Cindi Perkins
Houghton, Mich.

Cindi, last summer we took a 600-mile trip around Lake Superior in just over two weeks (way too much distance for the time we had between magazines). Scott and John

Stewart, whose letter runs next, were practically the only sailors we ran into during the trip since we were mostly in the wilderness. Thanks for the memories. This summer in early August, while this issue is at the printer, we'll be working at cruising s-l-o-w-l-y. Fewer miles. Less frantic. More fun.

Kayak to boat and back?

Last summer a friend and I met you in Otter Cove on the east side of the lake. You guys (Karen and Jerry) paddled over in your kayak to say, "Hi." This provided me with the inspiration to build an 18-foot cedar strip kayak in my basement this winter. I hope it will be completed for our annual trip 'round Lake Superior the first two weeks in August.

My question is: have you worked up a good way to transition from the boat to the kayak? I have a ladder on the stern of *Caledonia*, and it seems that it will be clunky to get into a kayak from the ladder. How did you overcome this?

John Stewart
St. Paul, Minn.

We've just added a one-step that allows us to step off the side of the boat and into the kayak with no problem. We used to step from boat to kayak without the step (see the photo at right, that we took some years ago for an article in Sailing *magazine's October 1999 issue.) In that photo we had just repainted our topsides and had made a protective "apron" out of an old sail. We still use that apron, although the topsides paint is no longer brand-new. If anyone wants copies of the article, we'll mail them. Anyway, don't knock it until you've tried it. We don't do anything special to climb down and back up, yet it works. We just love paddling about in that kayak!*

Out of the closet

Congratulations on your fifth birthday! I have been a subscriber for several years now and look forward to every edition. I know it's difficult to get a boating publication off the ground, and I applaud your excellent efforts on your work so far. Expect me to be a subscriber until I am too old to see the printed page.

Here's the thing: **I don't sail!** You "wind-baggers" refer to my kind of boating as "stinkpotting." I love the smell of diesel exhaust and the roar of the engines! I don't know any more about roller-reefing than I do about roller-derby, **But I do know this:** your magazine is a quality publication written and produced by people who still practice an almost forgotten act called B O A T I N G. Most of the

maritime publications available today (and I get just about all of them!) are for people who want to go Y A C H T I N G. Difference? Size, you say?! NONSENSE! It's cost and focus! I like big, fast, expensive boats — power or sail — but can I *afford* one? Good grief, no! I have to make do with an ancient power cruiser that lives up to the old saying, "The only thing that works on an old boat is the owner."

Your magazine is for guys (and gals) like me: we just want to be out on the water as much as possible, and the only people we're out to impress with our boats are ourselves. *Good Old Boat* also actually tells readers how to do the work illuminated in each edition and gives real-world commentary on the state of boating as we, the "little people," see it. **Thank goodness for no fluff or spin!**

As a powerboating stinkpot of almost 40 years experience, I'm now looking for a second boat to have around. I really like the look of an old Irwin 32.5 center cockpit sloop; if I can just find one needing enough work and cheap of price, I'll have it made! If you see an old Irwin 32.5 out there really needing love, let me know!

Thanks for all your magazine is doing for **boaters** and keep up the good work!

Bill Draper
Hillsboro, Ill.

Finish your chores first!

I have been enjoying your magazine for at least two years. My wife knows not to give me the latest issue until I have completed my evening chores, otherwise my nose is in the magazine. I have just moved up a notch to my second good old boat, a 1980 O'Day 23. My wife and two young kids appreciate just a little more room and stability as compared to our (now for sale) Catalina 22.

Austin McHugh
Logan, Utah

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

by Jerry Powlas

Understanding distance

Your boat takes you to places you can't reach any other way

How far is it to somewhere else? It's a relative thing. It's straightforward to lay a tape measure on something and measure the "distance" between two points on it. If you were simply taught, measuring the distance between two points on a chart is also straightforward. If you were taught the complexity of representing a roughly spherical planet on a roughly flat paper chart, you carry the disadvantage of knowing that picking off a distance with dividers is not simple nor even guaranteed to be accurate. The problem is that you are not measuring a distance on the thing itself, you are working with an abstraction. That's OK because, oddly enough, in the pastime of sailing, it may be the abstraction that is significant.

Albert Einstein told us that distance is relative. If you think about what he said regarding the relativity of distance, it can make your head hurt. Fortunately, Einstein's relativity is only required for understanding motion across great distances at very high speeds. A fast cruising sailboat is slower than a slow bicycle, so we don't need to worry about Einstein's relativity theory here. Still, in sailing, distance is relative.

Excluding recreation, travel and transport by sailing craft have been almost entirely replaced by faster and more effective means. The sailing craft we are familiar with today is a recreational craft. It continues to exist because it can take the sailor places he cannot get to any other way. These are not the external geographic places; rather they are the internal places of the mind. They are an abstraction.

When you board your sailboat, you have a destination in mind or will soon decide where you will go. In part, that decision is determined by the "distance" to the destination. This is a practical matter and an elegant personal and philosophical matter as well because in the case of travel by sail, the journey and destination are blended into a continuum of experience that starts when the first line is cast off.

> *There is no guarantee that the far destination will be any more rewarding than the near one. In this sense, distance is truly relative. The voyage is on the inside after all.*

There is no guarantee that the far destination will be any more rewarding than the near one. In this sense, distance is truly relative. The voyage is on the inside after all.

How far is it to somewhere else? It depends on how far you want to go.

by Mary Maynard Drake

The Dance

A memorable magic moment in the moonlit Marquesas

"COME IN . . . COME IN . . ." the call floated across the water like a melody. The coconut palms on Tahuata shimmered in the moonlight as my husband and I looked at each other, tempted. After a slower-than-expected passage, we had arrived at dusk, off the Marquesas Island village of Hana Moi Noi in *Scud*, our homebuilt engineless *Spray* replica. We were alone in the bay. No anchored cruising boats. No sign of life ashore.

Hesitant to pick our way in through the coral heads and anchor in the dark, we prepared to tack back and forth in deep water until daylight. During our second tack, a bonfire blazed up on shore where our chart showed a village. The natives seemed to be signaling us. Still we hesitated. Then the full moon rose above the island's spiky peaks. The ocean bottom 60 feet below and its hazards became as visible as if it were daytime. Cautiously we ghosted in close enough on a zephyr, dropped our 60-pound Danforth and watched it bury itself in the sandy bottom. Secured, we sat down on deck to savor this South Seas landfall before we went below to our bunks.

"Come in . . . come in . . ." the haunting cry wafted out, mixed with the murmur of wavelets on the beach, the rustle of swaying palms, and the intoxicating jungle scents of drying copra, moist vegetation, and fragrant frangipani. The natives waded out into knee-deep water, forming a human chain beckoning us ashore. We couldn't resist. Launching our dinghy took only a minute. Our dog assumed his figurehead stance on the bow. Our two sons squeezed onto the forward seat. Our daughter and I shared the stern seat, and George manned the oars. A few hard pulls, and we slid ashore on the moonlit white sand.

The village chief welcomed us heartily in English. We responded with greetings and big smiles. The formalities over, ukuleles appeared. We leaned against coconut palms as one by one the young people caught the rhythm and began to dance. Not the tame swaying-hips hula of Hawaii, but the tamarae's erotic undulations where maidens and young men almost, but not quite, touch each other. Like the village elders, married women, and children, we could only watch. This was not a performance for tourists. It was an expression of *joie de vivre* by teens in colorful pareos and cut-off shorts, their raven hair shining in the moonlight. The dance ended abruptly. Spellbound, we rowed back to our boat. Though we spent the next week swimming, trading souvenirs, and partying with the villagers, they never duplicated that dance.

I've never experienced anything like that Marquesan landfall, before or since. But whenever I see palm trees glimmering in the light of the full moon, "Come in . . . come in . . ." echoes through my mind, and I'm back in French Polynesia where young people dance with abandon on the sand. Even after almost 30 years, the memory still brings bittersweet tears to my eyes and sends shivers down my spine.

***Scud*, a homebuilt *Spray* replica. Author Mary Maynard Drake and family top of page.**