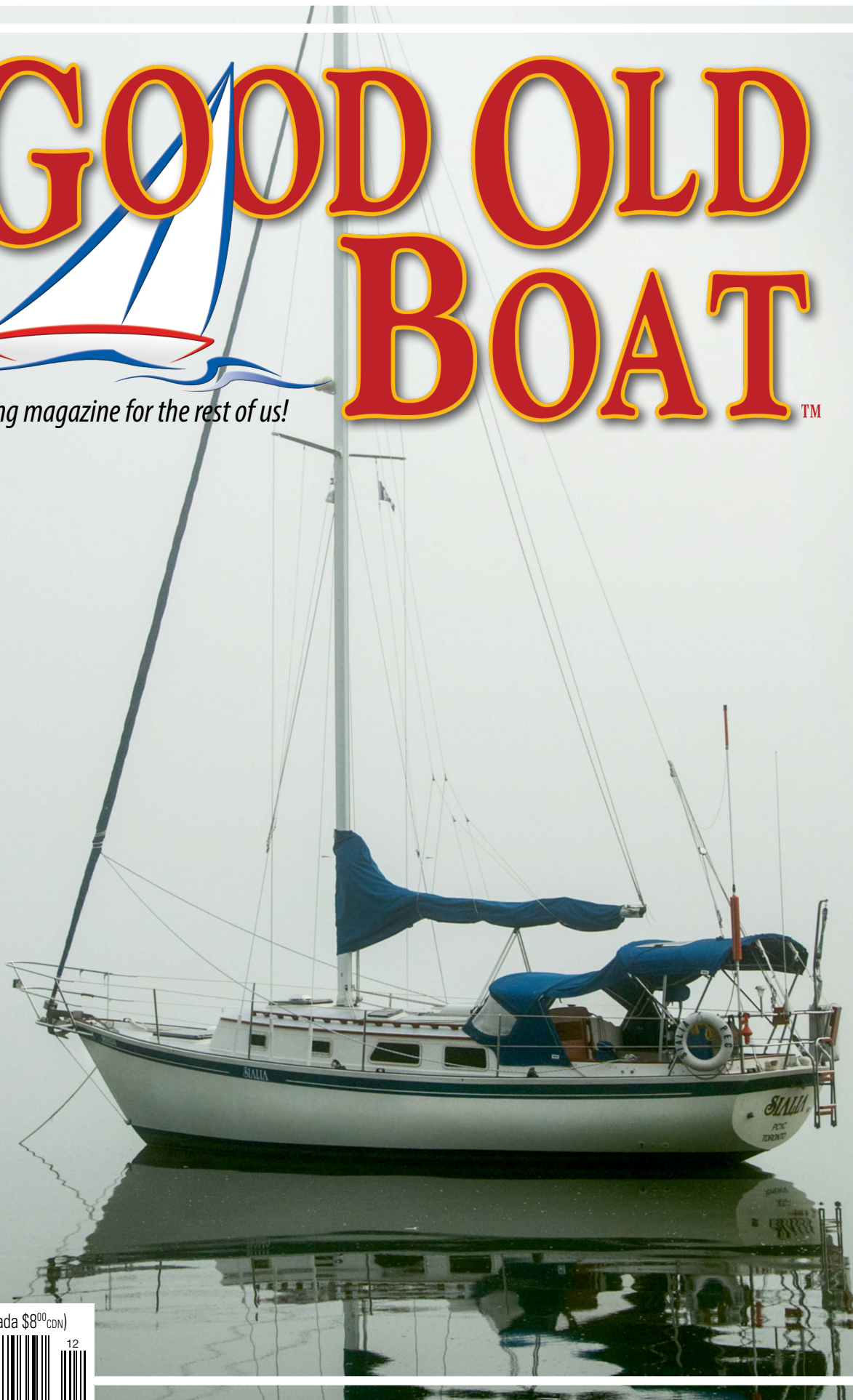


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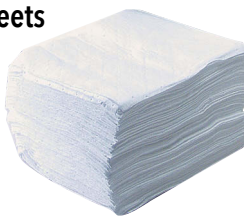
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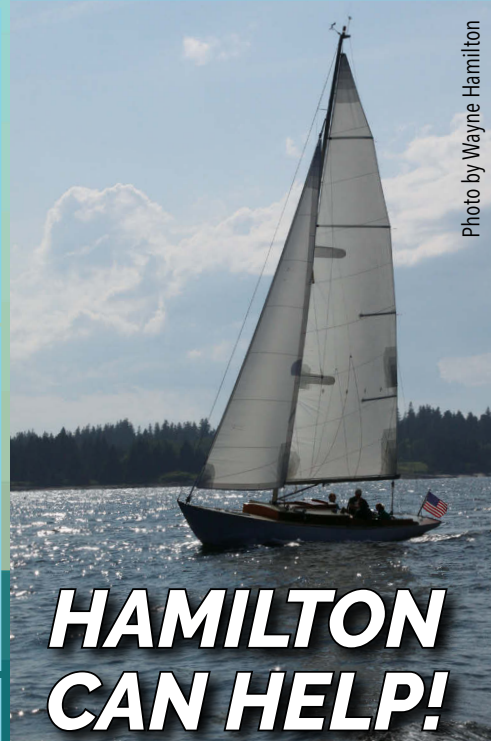
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On the cover . . .



Lawrence Lilly used a Nikon D300 to snap this photo of *Sialia*, his 1985 Aloha 32, sitting on her mooring behind his home in Prinys Cove, in the northeastern part of Lake Ontario. "A

thunderstorm had raged overnight, but at dawn the water was unusually still and the light was amazing."

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News from the world wide web



Young sailors

Jack O'Neill, the father of the wetsuit, passed away last year at age 94, but his huge legacy lives on, and not just on the bodies of surfers and divers, but in O'Neill Sea Odyssey, an organization he founded in 1996 and that recently enrolled its 100,000th student. The non-profit teaches 4th- to 6th-graders marine-related STEM topics (science/tech-

nology/engineering/mathematics) in the classroom and at sea, without any cost to parents. Aboard the organization's 65-foot catamaran, kids collect plankton samples to study under a microscope and use \$50 hand-bearing compasses (donated by Davis Instruments) to learn the basic geometry and algebra of navigation. The group's website is filled with resources for the young mariner in your life. To learn more: oneillseaodyssey.org.

Mid-youth sailors

Teaching with Small Boats

Alliance (TWSBA) is a collaboration of educators and programs that teach

math, science, and other essential skills through the process of boatbuilding. If you're an educator or a boatbuilder or both, this group is worth checking out. Its website is filled with resources, and member organizations span North America from Nova Scotia to Miami to San Francisco and reach more than 100,000 kids annually. Organizations include Sausalito's Spaulding Marine Center; All Hands Boatworks in Milwaukee; Ballard Maritime Academy in Seattle; Boston's Community Boat Building; Islesford Boatworks in Maine; G2g Wood & Boatworks in Illinois — the list goes on and on. We're delighted by the number of organizations out there using the craft of boatbuilding to light up young minds. To learn more: teachingwithsmallboats.org.



Young-adult sailors

National Outdoor Leadership School (NOLS) is renowned for its wilderness-oriented training, including a range of sailing-oriented programs for students aged 17 and up. Programs are held in the Pacific Northwest, New Zealand, and Mexico's Sea of Cortez. A few years ago, we came across about 20 young NOLS students under sail in

four Drascombe Longboats in the remote northern part of the Sea of Cortez. We offered them cold Cokes and learned they were completing a 26-day passage, all part of a 78-day course that saw them sailing, kayaking, and backpacking in an environment of harsh beauty. Each night of the sailing trip, they pulled ashore, made camp, prepared a meal, and engaged in classes covering topics such as sailing, boathandling, rescue techniques, navigation, wind and wave theory, meteorology, and anchoring. To learn more: nols.edu.

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photo by @mikeydetemple



How Sailors Buck the Service Economy

Boat ownership triggers the gene for self-reliance

BY MICHAEL ROBERTSON

Acknowledging a bit of hyperbole, I think that Kenneth Grahame's *Water Rat* was right: "... there is nothing — absolutely nothing — half so much worth doing as simply messing about in boats." But what's the attraction of messing about in boats?

We live in a world far removed from our agrarian ancestors. We're often reminded that they grew and raised and harvested what they ate, but not so often reminded that they lived in a world that required them to fix, by themselves, things that broke. Being a problem solver, being handy with tools, and having a broad knowledge base — these were valued traits and necessary to survive.

Oh, how far we've come.

In today's world of specialization, it no longer makes sense (at least not financially) to even change the oil in our cars ourselves. Today, when an appliance breaks, that's often when it gets replaced, not repaired. And if it does get repaired, it gets repaired by someone else. Need a new roof? Call a roofer. Pipe leaks? Call a plumber.


But boats take us back, no matter who we are. Only in the most rarefied circles do boat owners not tend to the basics of maintenance and repair. Sure, there are boatyards, and all of us need to rely on their expertise and resources from time to time, but for most of the things that demand a boat owner's attention, it doesn't make sense to do anything else but roll up the sleeves and take care of them. We may bring our Chevy, Ford, Honda, or Toyota to Jiffy Lube every 4,000 miles or so, but when the fluids need changing in our Atomic, Perkins, Universal, Westerbeke, or Yanmar auxiliary, we get out the wrenches and get to work.

And we know this going in; there are no surprises. When most of us buy a home, we don't then buy a library of books

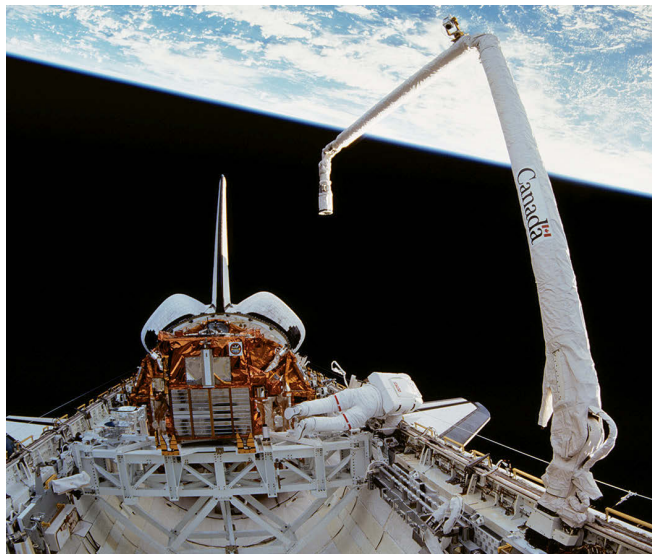


and begin educating ourselves on drywall taping, tree-trimming, framing, and AC repair. But within weeks of buying a new-to-us 20-year-old sailboat, we've acquired every book ever written by Calder, Casey, Leonard, and others. And armed with the knowledge contained within those covers — knowledge that may never serve us beyond our boating lives — we do unthinkable things, like tackle projects well outside our comfort zones. We learn to be careful when we mate dissimilar metals, and we buy our first tub of LanoCote. When the first electrical gremlins stir, we get a multimeter, tinned wire, and a set of 12-volt connectors and learn about amps, ohms, and volts. Soon we own a respirator and we're mixing epoxy.

But so what?

In lives where we often don't make even our own coffee, a boat can be a bastion of the arts of self-sufficiency and self-reliance that are increasingly difficult to acquire. Boats are outlets in that sense, even when we're not fixing them, but using them. We may no longer crank our car windows up, but to crank on a winch to raise or trim a large sail, and to then feel the boat surge ahead as a result . . . that's pretty neat. And that same winch turned and clicked smoothly not because you called the Maytag repairman to service it, but because last year you bought a pair of snap-ring pliers and, under Don Casey's gentle guidance, tore down that winch yourself and applied fresh grease and new pawl springs. What could be half so much worth doing as that? 

Trade-Trouble Fallout, Inboard Outboards, and the



Good old trade-trouble fallout

Due to the current trade dispute between Canada and the USA, and the behaviour of the current US president, I won't be renewing my subscription. I love the magazine, but I can live without it.

—George Kuipers, Fergus, Ontario

Editor's response

George, we're saddened and very disappointed that we're the target of your understandable frustrations. But please reconsider. After all, we're practically Canadian. We have Canadian sailboat-design legend Rob Mazza on our team (plus a few Canadian contributing editors), our world headquarters is only 140 miles south of the border with Canada, and we didn't correct your Canadian spelling above. And regardless, perhaps cut the USA some slack. We're not a perfect nation, but we adopted your William Shatner, have babysat your Justin Beiber for years without payment, and freely acknowledge that our Space Shuttle would never have amounted to anything without its Canadarm.

—Michael Robertson, editor

Reader Jamal Kazi was in Vietnam earlier this year and captured this aid to navigation near the Can Tho floating market in the Mekong Delta. Jamal says these home-built outboards are commonly used for navigating shallow waters. "That's a small one," he wrote. "I've seen what must be truck or WWII fighter-aircraft engines mounted in a similar way."



Advice on inboard outboards

Regarding James Baldwin's article in the September issue of *Good Old Boat* ("Mounting the Outboard Inboard, Part 1"), I have a few suggestions. My comments are based on experience with my good old Bristol 24, which was constructed with a well for mounting an outboard motor along with a cutout on the transom to allow it to be tilted when not in use. The well-mounted outboard has been a fine and useful feature of this boat.

Sailors with outboard wells should be cognizant of the size of the power head of the motor they plan to use, and whether the well is large enough to allow the motor to be fully tilted out of the water, and, if desired, wide enough to allow the motor to swivel to aid in steering the boat. These are not concerns for the more typical transom-mounted outboard motors.

The motor I use (a Yamaha 9.9 four-stroke) is large enough to prevent easy swiveling inside the well. The location of the outboard's prop behind the rudder and below the well makes maneuvering the boat significantly more difficult at low speed and in tight places, which means the boat needs to have sufficient headway in order to steer. I keep my boat on a mooring, but find occasional visits to marina slips to be nerve-racking. Entering a slip with enough speed to steer, but not so much speed that I hit neighboring boats, can be a challenge.

Overall, I love the appearance of the boat with the outboard tucked inside the well. The outboard is far easier to remove, replace, and maintain than an inboard. I highly recommend this installation, and James Baldwin's great advice.

—Ed Lawler, East Greenwich, Rhode Island

Polybag Question

I was fascinated reading James Baldwin's article in the September issue on constructing wells for tiltable outboard motors. I have had boats with inboard gas, inboard diesel, and four-cycle outboards. I have found the outboards to be the most reliable and simplest to maintain, and the least expensive. Inboard gas comes with the concern (real or imagined) of explosive fumes, and the theory of diesel reliability is compromised in the real-life boating environment by the need for fuel of near-pristine quality.

Mr. Baldwin mentioned that he is not aware of a builder that offered a sailboat with a retractable outboard in a well. There was at least one.

In the early 1970s, my wife and I journeyed from Connecticut to Huntington, on New York's Long Island, to Brian Acworth's Seafarer factory to look at a Seafarer 29 with a well that provided for the retraction of the outboard. The Seafarer had shutter-like flaps that sprang open when the motor was lowered. When the motor was tilted up, the flaps could be closed by pulling two lanyards that would cause the flaps to snap shut, sealing the lazarette. The Seafarer 29 was also offered with an 8-horsepower Yanmar diesel.

I don't know how many of these outboard boats Acworth sold, but I later saw an outboard version on a mooring at the Milford Yacht Club in Connecticut. I believe a similar well arrangement was also offered on the Seafarer 31.

—Ed McKeever, Osprey, Florida

James Baldwin's response

Thanks for pointing out the Seafarer 29 retractable outboard. I wasn't aware of this, but from what I could see on an online video, the well could only accommodate a short-shaft motor on a mounting bracket that's at (or even below) the waterline. Since the flaps cannot be watertight, this setup looks like it will easily flood the motor in choppy waters. It also does not permit side thrust, which is a big negative. There's nothing about this design that I would want to copy, but it was innovative and apparently is usable within its limits.

James Baldwin, *Good Old Boat* contributor



Why no cat in the rat story?

Ed Zacko's "The Rata of Seville" was a fun read (September 2018). I had the same type of problem in the house. The cat took care of the problem. Why didn't Ed and Ellen try a cat in their endeavor to get rid of the rat?

—C. Henry Depew, Tallahassee, Florida

Ed Zacko's response

Henry, I am happy that you enjoyed "The Rata of Seville." We didn't have a cat on board because traveling internationally with any animal makes for serious, and in many cases unsolvable, immigration problems. During the Seville ordeal, I would have killed for a cat, but for the same reason we didn't have a cat, no one had one for us to borrow.

—Ed Zacko, *Good Old Boat* contributing editor

Store-bought anchor-bridle plate

In 2001, I purchased an anchor bridle plate at a marine store in Oriental, North Carolina. It was very much like the one Drew Frye made, but without the apex hole ("Anchoring with the Bridle Plate," July 2018). I used it successfully on my Tartan 40 for 15 years and loved it. At least at that time there was one available commercially.

—James M. Doran Jr., Nashville, Tennessee

Drew Frye responds

Thank you for the note, James. The idea of gripping a chain with a slotted plate is as old as chain and industry. Every dump truck uses a variation on the tailgate to allow partial opening for spreading gravel. My inspiration was a plate I spotted in a mooring field.

Seadog has made the Chain Gripper Plate for many years. However, it comes in one size only, and because the slot is too short, it is poorly balanced and the plate falls off easily while it's being attached. It does not lock the chain in place, and a locking plate cannot easily be fitted (though some have done so). Without a lock, it will fall off if it touches the bottom in slack winds. It's a good idea that needed to be improved upon, which I have done.

—Drew Frye, *Good Old Boat* contributing editor

continued on page 54

A lovely
full-keel cruiser
in the
classic CCA style

BY JOE COOPER

Bristol 32

PHOTO BY FREDERICK GLEASON

Owners say that what they like most about the Bristol 32 is her good looks.

Bristol. The very name fires in the imagination of sailors a multitude of visions: Bristol, Rhode Island, the home of the legendary Herreshoff clan of builders and designers; and Bristol, England, home to the Admiral Benbow Inn and to the renowned Bristol Channel pilot cutters in which eccentric adventurer Bill Tilman made many bold voyages.

History

Bristol, Rhode Island, was for 33 years, in the heyday of fiberglass production boats, home to the builder of Bristol sailboats, which introduced entire generations of folks to this thing we do called sailing and aboard which many American sailors have had so many sailing adventures.

Clint Pearson founded Bristol Yachts after leaving Pearson Yachts, the company he'd formed with his cousin Everett, in 1964. He originally set up shop at the former Herreshoff Manufacturing Co. property in Bristol, and made good use of the design skills

of the famous names of the day: the first Bristols were designed by the likes of Carl Albergh and Halsey Herreshoff.

For his 32-foot Bristol, Clint drew upon another designer whose name has become synonymous with yachts and the sea, Ted Hood. Not surprisingly, Hood came up with a pretty little boat that, by the standards of its time, sailed very nicely. According to SailboatData.com, 322 Bristol 32s were built between 1966 and 1983.

Design

Ted Hood and his contemporaries were very sympathetic to the aesthetics — the look of the boat above the waterline — of the last days of wooden boats, particularly their cabintops and sheerlines and the subtle curves of the stems and counters. These lines make the difference between a boat that prompts a “wow!” and one that doesn't attract a second look. The sail-plan profile is the kind of finely detailed drawing a committed dreamer can stare at indefinitely.

In those days, and to some extent today, production cruising-boat designs were based around those of contemporary performance raceboats. The Bristol 32 was drawn in the era of the CCA (Cruising Club of America) Rule, which encouraged the long overhangs, narrow beam, and low-aspect-ratio sail plans, commonly yawl rigs, typified by *Finisterre*, the legendary design by Sparkman & Stephens. After the massive success of *Finisterre*, all the designers were gunning for her and S&S, and were drawing boats that were similar, as a quick review of *Finisterre*, the Bristol 32, and a Hood 37 (Hood's answer to the S&S design) reveal. The ratios of LWL to LOA and beam to LWL are all very close.

The point here is that the LWL and beam are the driving force behind volume and speed. This is why the 32, like her contemporaries, is a bit tender initially and the interior volume is small — some say cozy — compared to today's boats. There is not much form stability in the hull; the bilges are quite

round and so the boats heel readily at first. They stiffen as the topsides, at the overhangs, enter the water, providing more volume to leeward and so stiffness, but you need to get used to sailing at 25 degrees of heel. There is certainly enough volume in the hull below the waterline to carry the necessities for a solo sailor or couple to cruise comfortably for a weekend or two-week vacation, even with the kids.

A question often asked on the sailing forums is: "Can a Bristol 32 be taken offshore?" The answer is unequivocally yes, as has been amply demonstrated by several significant offshore passages, which include a circumnavigation and an Atlantic circle, largely solo, made by one owner.

Rigs

The Bristol 32's rig was typical of the day, comprising a deck-stepped aluminum mast, single spreaders, and forward and aft lowers. A few examples were rigged as yawls, but most were masthead sloops, and there are two rig sizes. The smaller, or standard, rig

has an I dimension, roughly the mast height, of 38 feet, while the tall rig has an I of 40 feet.

The sail plan proper is a straightforward low-aspect-ratio rig that again matches the trends of the day and is ideal for easy offshore sailing. The boats were delivered with headstays requiring hanks, but by now one would be hard pressed to find an example that has not been retrofitted with roller furling. A few owners have installed inner forestays for offshore versatility.

Construction

Clint Pearson already had some years of working with fiberglass when building the Pearson line, but in the half-dozen or so years between the first Pearson Triton and the Bristol 32, the new materials were becoming better understood. In the 1960s, fiberglass meant a simple solid laminate of fibers, usually mat and woven roving, and resin, called single skin. This laminate is clearly visible in the interior areas where the hull is exposed. The exception in the Bristols is in the deck, where balsa was used as

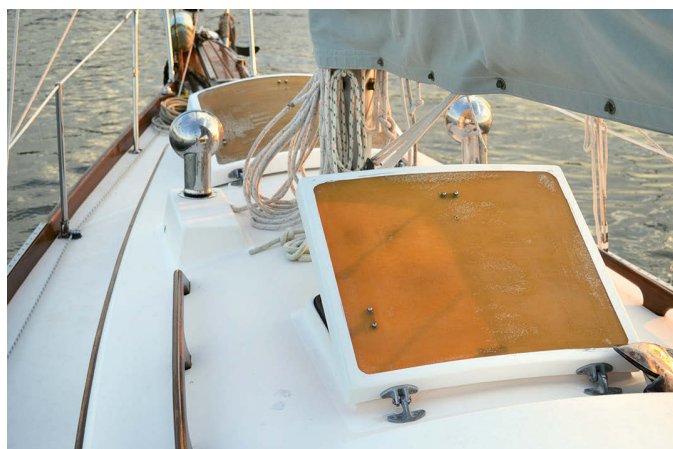
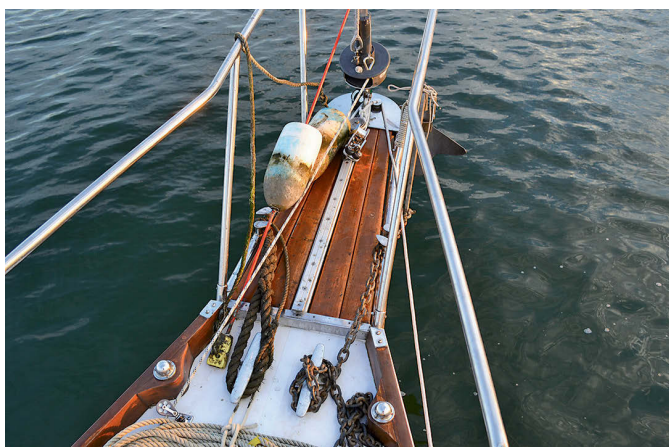
a core material. This technique, common today, provides stiffness

in the structure and some degree of insulation, but because balsa rots when it gets wet, close attention is needed when surveying the deck to identify soft spots, typically where hardware is attached. Posts on internet forums proclaim the boats to be robust and overbuilt.

Any material subjected to continuous exposure to sun, the flexing of sailing, and people leaning or hauling on attached hardware will ultimately fall prey to gelcoat cracks and crazes. These are typically found at stanchion bases and other stress points.

The Bristol 32s were built before the concept of the molded-fiberglass liner or pan had taken off, so much of the interior furniture is tabbed directly to the hull, allowing easy inspection of the hull's innards. This is not so with the cabin overhead, which is covered with a molded liner fitted up under the cabintop. Such an arrangement brightens the cabin but makes retrofitting deck hardware a bit of a chore.

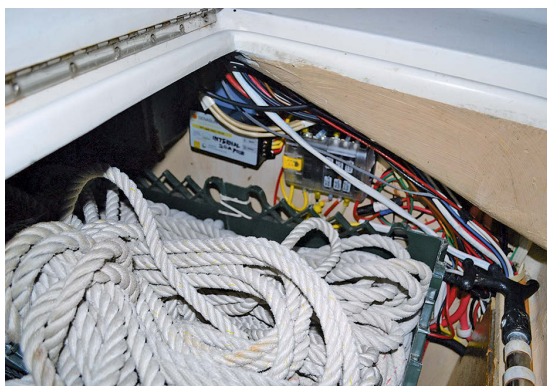
At the hull-to-deck joint, the edge of the deck mates to an inward-turning 6- to 7-inch flange on the hull. A permanently elastic material seals the joint, which is further strengthened with through-bolts.



The review boat, *Nell*, was customized with an anchor sprit, upper left, which keeps the anchor and chain clear of the bow and also places the headstay farther forward. *Nell*'s owner, Rick Gleason, rigged a Solent stay abaft the forestay that can be tensioned by adjusting it fore and aft along a track.

Two hatches and two Dorade vents capture the breeze, at left. Teak features include handrails, eyebrows running along the top of the cabin sides, and the toerails, which some owners have had to remove to resolve leaks.

The companionway has a sill rather than a bridge deck, above, making it easier to get in and out of the cabin. In rough weather, it's a good idea to keep the lower dropboard in place.



Plenty of storage space is available in the cockpit seat lockers, one of which, properly vented overboard, contains the propane tanks.

On deck

To maximize interior volume, Hood made the cabin trunk as wide as he could. Coupled with the boat's narrow beam, this means the sidedecks are not as wide as some might wish for ease of movement when going forward or aft. On the windward side, the lower shrouds aggravate the situation.

Of two pairs of opening portlights at the forward end of the trunk, one pair opens into the forecabin and the other into the head and over the lockers to starboard. A Dorade box is molded into the cabintop each side of the mast. The forward hatch is located on the cabintop just forward of the mast, where it is right over the heads of the slumbering crew in the forecabin. It can be opened to face either forward or aft. Another hatch is located above the saloon. The original hatches were manufactured fiberglass pieces, and photographs show that on some boats they have been replaced with modern hinged hatches.

One of the most critical elements in a cruising boat, in my opinion, is the ability of the crew to lie down and nap

on the cockpit seats, ideally under a full-cover awning. The Bristol 32 checks that important box in spades, and also those of the critical relationships between the angle between the cockpit seats and the coamings and, for bracing the feet when the boat heels, the distance to the edge of the seat opposite.

The forward end of the cockpit has a step-over sill for access to the companionway, not the bridge deck some might desire for going off soundings. (One boat's owner, preparing for an Atlantic circle, installed a bridge deck.) The sill is a small step and does make getting below less of a scramble.

Bristol 32s were built with either wheel steering, in which case the mainsheet traveler is located immediately in front of the pedestal, or tiller steering, when it is located on the deck aft of the cockpit. Some owners have relocated the traveler to the top of the cabin across the sea hood. A nice detail in the deck molding is the cowl for the spray dodger to fit onto.

There is a running debate over wheel versus tiller steering in the fight for cockpit space. For me, on a boat of this

size and proportions, the tiller wins hands down over a wheel.

Accommodations

The Bristol 32 interior was offered in two fairly straightforward versions that are typical of the period. They differed only in offering either a dinette to port and a settee to starboard or twin settees opposite each other. Marketers took the opportunity to say the boat sleeps six, yet in the summary statistics, sleeping capacity is cited as five. Provision was made for pipe berths above the settee/dinette, so there are certainly five berths and technically the six the brochure describes.

Forward is a V-berth, the foot end of which comes up against a bulkhead that separates it from the anchor-rod locker. On both versions, on the port side aft of the forward cabin, there is a head of serviceable size to port and multiple lockers to starboard. A nice detail is the storage in the head, where six sliding drawers make it actually possible to organize the contents. Adjacent to these drawers are two largish opening lockers with another



Nell has the interior arrangement with the bulkhead-mounted drop-down table and the straight pullout settee to port, at left. Visible on the starboard bulkhead below the Dickinson LPG heater are the U-shaped wooden fittings intended to support a pipe berth above the settee. Typical of layouts on boats of the Bristol 32's vintage and size, the galley extends across the boat, at right. The sink and stove are to port and the icebox to starboard. The engine is under the cockpit behind the companionway steps.

PHOTOS, AT LEFT, BY FREDERICK GLEASON

locker under the sink. There are drawers, too, under the saloon berths and the V-berth. These little touches are reminders of the days when even small boats would put to sea, and their interiors had to be set up to allow proper organization of the ship's stores and crew gear. My father, a founding member of the "A place for everything and everything in its place" society, would be impressed.

Aft of the saloon berths, to starboard, is the galley, which is also fitted out with several lockers of varying sizes. A picture in the original brochure shows a stove with a two-burner top and a monstrous oven below it, operating on alcohol. A sink is adjacent to the stove, and on the port side is an icebox with a flat top that is usable as a chart table.



The adequately roomy head is nicely finished in solid teak and veneers and has a generous amount of stowage in lockers and drawers. An opening portlight provides light and ventilation, and a Dorade vent provides air.

In most boats, the original Atomic 4 gas auxiliary has more than likely been replaced by a small diesel. Regardless of the power plant, one detail remarked on in the Bristol 32 forums is that access to the engine, and especially the shaft log, is tight.

Performance

All sailboats need to have the sail area and trim matched to the wind and sea state to keep the boat balanced and the helm easy. A Bristol 32 so trimmed will sail upwind more or less indefinitely

Comments from owners of the Bristol 32

I was a Bristol Yachts dealer from 1970 to 1974. The yawl was gorgeous. Early models were tender, so more ballast was added. The narrow beam quickly turned buyers to wider boats. Bristol Yachts' woodwork was excellent, but as Bristols grew older, issues became apparent. The balsa-cored decks carried out too far and under the wooden toerails. The original Dolfinite caulk dried too soon. Also, earlier boats lacked backing plates under rails and stanchions. It was ruggedly built and not a club racer, and would hobbyhorse to windward in any seaway.

—Norm LeBlanc, Beverly, Massachusetts

The deck under the mast step became weak and needed to be rebuilt in 2010. You can see this if the door into the front berth doesn't close properly. It's a good light-air boat and we have put roller furling on. In high winds, it's tender, although it sails well and holds a steady course.

—Stephen Brown, Rose Haven, Maryland

I have owned my 1980 Bristol 32, ketch rig, hull #298, since July 2000. My wife and I sailed her most of the way around the world, departing from San Francisco in 2008 and arriving in Florida in 2016 via Hawaii, the Marshall Islands, Micronesia, Palau, the Philippines, Borneo, Southeast Asia, Thailand, the Mediterranean, the Canary Islands, and the West Indies. Our boat was stock and did not have any issues along the voyage. It came with a Yanmar 2QM20 raw-water-cooled motor, which is still serving the boat well. The interior layout, with its good sea berths, is excellent for offshore sailing. The bulkhead-mounted table arrangement is perfect for a boat of this size. The

interior is hand-crafted out of mahogany and the sole is true-blue teak and holly. Down below is warm and cozy and does not have a Clorox-bottle feeling like so many other production boats. The teak toerail leaked early on and was removed and rebbed. Other than that, I can't think of any problems. Stuffing box access is difficult, but I solved that problem by replacing it with a dripless shaft seal. The thing I like least is going to weather in a chop.

—Ken Stuber, New Smyrna Beach, Florida

I've owned *Beauty*, a 1976 Bristol 32, for 13 years. I mostly singlehand. She's the perfect boat as she points well, sails well, and handles well. I have a Hood roller furler with a UK 135 cruising sail and a 150 for light winds. My mainsail has jiffy reefing with two reefing points and lazy-jacks. I reef at about 12 to 15 knots and often reef in lighter winds as the boat balances nicely with reduced sail area and I can sail for many miles without touching the wheel. The space below is tight and may be one of the main reasons I singlehand. The quality of construction is very good and I've had few problems. I did repower the boat with a Universal M-25XPB engine about 10 years ago.

—Joseph Michael Kelly, Charleston, South Carolina

We owned a 1975 Bristol 32 for 10 years. The stuffing box was almost impossible to service without removing the fuel tank through the port locker. The big Bukh 20 diesel didn't help. A friend of mine, now deceased, sailed his to Europe and returned to the USA via the Caribbean without a problem with the boat (his engine had a bad oil leak).

—Mike Meier, Easton, Maryland

with only a nudge needed on the helm once in a while.

The length and thickness of the keel paired with a low-aspect-ratio sail plan, the long spreaders, and a relatively wide chainplate staying base constrain the Bristol from matching the close apparent-wind angles of today's boats. Bristol sailors are content with around 35 degrees in flat water and wider in light air or chop. Close-windedness is not a Bristol 32 virtue.

The common formula gives a maximum hull speed of 6.3 knots. Under windy conditions, less sail area is better, for no matter how much you cram on, the boat will make 5 to 7 knots, or 8 knots in the surges. Overpowering the boat will make it hard on the helm and needlessly overload everything, including the driver, human or otherwise.

When sailing downwind, anything that can be done to keep the boat up to full speed will make it stable and minimize rolling. A cruising spinnaker, and getting acquainted with the math of sailing downwind angles, will be a great help.

Some owners report that the boat has a tendency to hobbyhorse when underpowered in light winds or in a sloppy sea.

The fixed-blade propeller operates in a cutout in the rudder, so some practice in learning how the boat handles in reverse will be time well spent.

A Bristol 32 will not deliver hair-on-fire performance, but it will cover the modest miles gently and kindly and bring its crew to its destination content and not beat up.

Conclusion

A scan of brokerage boats offered at Yachtworld.com showed eight Bristol 32s for sale, including one yawl. They were spread around the



PHOTO BY FREDERICK GLEASON

A measure of a yacht's beauty is how long you can look at her, or photos of her.

country, although the bulk were east of the Mississippi. List prices ranged from \$7,900 (with a note that the price reflects high moisture readings) to \$29,000.

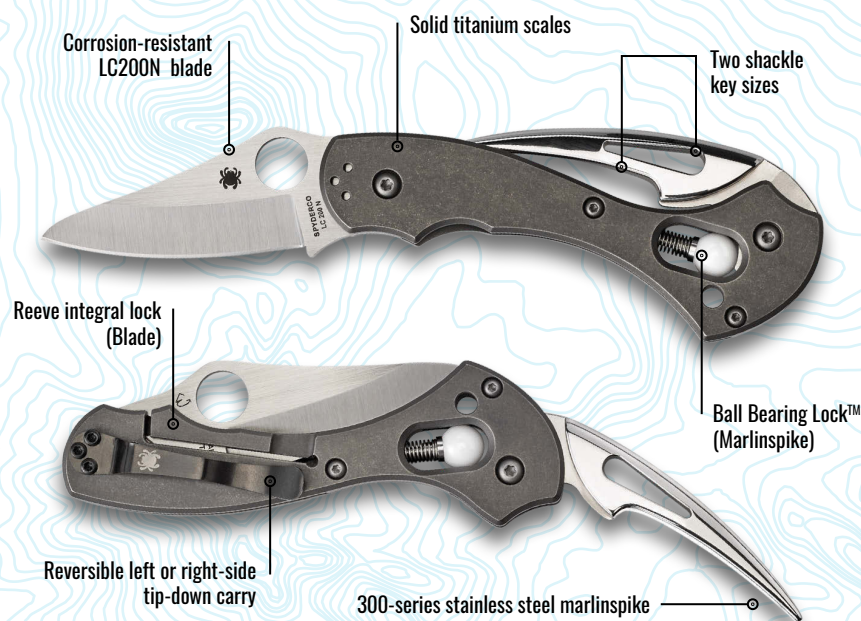
So, what does a Bristol 32 purchaser get for the money? Name recognition,

for one thing, and the backing of a pretty solid community. About two years ago, Bristol owners came from all over the East Coast on boats large and small to a Bristol owners' shindig at the Herreshoff Museum in Bristol, Rhode Island.

For a seeker of creature comforts, hot and cold pressure water for instance, the Bristol 32 might not be a good fit, unless previous owners have added them. These boats are from a simpler time, but they are versatile, and can accommodate a couple or a numerically small family for any manner of uses,

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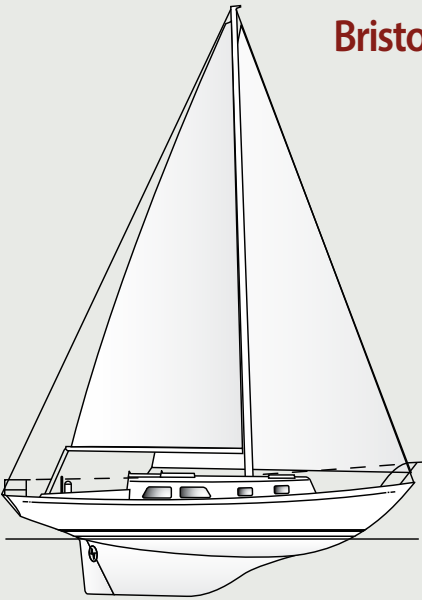
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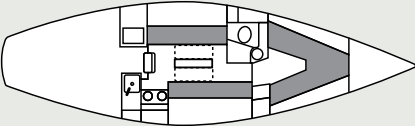
from overnights to weeklong or even longer cruises.

But perhaps the best thing you get with the purchase is the look. 

Joe Cooper grew up in Australia and sailed with his father from an early age. Since about 1974, he has worked as a sailmaker, rigger, broker, and boat captain, and sailed in America's Cup campaigns in 1977 and 1980. He worked for Hood Sailmakers for close to 30 years, now consults for them and for Quantum Sails, and writes on almost any issue related to sailing, including a monthly column for WindCheck magazine. Joe lives in Middletown, Rhode Island, with his wife, a college-senior son, a springer spaniel puppy, and several boats.



Bristol 32



Designer:	Ted Hood
LOA:	32' 1"
LWL:	22' 0"
Beam:	9' 5"
Draft (keel):	4' 7"
Draft	
(centerboard up/down):	3' 6" - 7' 6"
Displacement:	10,800 lb
Ballast:	3,900 lb
Ballast/disp. ratio:	.36
Sail area (yaw):	505 sq. ft.
Sail area (sloop):	466 sq. ft.
Disp./LWL ratio:	453
Sail area/disp. ratio (sloop):	15.3

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A User-Friendly Cockpit Grating

Kind to feet, it keeps dirt from getting underfoot

BY DREW FRYE

As is the case on many boats, the cockpit sole of our catamaran, *Shoal Survivor*, was textured gelcoat with no grating. Try as we might to keep dirt and grit off the boat, the cockpit always turned into a trashy wet sandbox, and the grinding of sand underfoot against gelcoat might as well be dollar bills burning. The previous owner had installed Dri-Dek tiles wall to wall, which solved the sand and dampness issues, but they were miserable on bare feet and agonizing to kneel on.

For a few years, I enjoyed an easy-to-install, inexpensive wooden cockpit grating I assembled from snap-together hardwood patio tiles (I got the idea from a blog post). Over time, though, the plastic backing disintegrated (for no good reason, as it was in the shade of a hardtop) and the wood began to rot.

Because I liked this solution to the sole problem, I made note of its good attributes and resolved to improve on it. The materials were cheap, the wood-working was simple, and I liked the color. It was flexible, so it conformed to the curvature of the cockpit floor, and I could easily pick up one corner and run the hose underneath it, cleaning out several months' worth of trash and grit in a few minutes. After considerable headscratching and some product testing, I came up with a solution.

Materials

I wanted a wooden sole, but I was determined to prevent rot from ruining it prematurely. Before moving forward, I came up with an inexpensive, very

effective treatment I could apply to wood to make it nearly impervious to rot (see "Home-Brewed Preservative," page 16).

I chose a light-colored western red cedar for the deck, in part because of its light weight, rot resistance, and economy, but also because it had the look I wanted: *Shoal Survivor's* cabin is cherry, not teak or mahogany. Any rot-resistant wood could work, though the extent to which it will absorb the treatment depends on the wood, and I doubt a dense wood like oak would absorb much at all.

To tie the cedar strips together and support them, I wanted a material that is flexible and durable. I've always been impressed with the weather and UV

resistance of PVC mobile-home skirting. It's much stronger than the backing used on typical patio tiles, completely impervious to rot, and inexpensive. Although the lattice pattern I chose is considerably stiffer than patio-tile backing, it's sufficiently flexible to conform with the gentle curvature of a cockpit sole.

Trimming and treating

I ripped the decking from 8-foot 1 x 8 cedar planks. As well as cutting the strips to width and length, I beveled the ends at a 45-degree angle, and did the same along the sides of what would become the edge strips. I also trimmed the ends of the edge strips to match the corner profile of the cockpit. To allow clearance for the sharp curvature where the sides of the cockpit well meet the sole, I cut the PVC backing about 2 inches shorter and narrower than the cockpit well.

I placed the sawn and sanded decking on a waterproof tarp and liberally painted on my glycol-borate-ester anti-rot formula every few days for several weeks, until the wood would absorb no more. After each coating, I stacked the boards tightly, one board on the other, and wrapped them in the tarp until it was time for the next coat. To ensure that all the boards were completely soaked, I flipped the stack each time I coated them. I then let the boards drip off and dry neatly stacked for 6 weeks. When done, I had used about ½ gallon of the formulation, so I figure 1 gallon would treat about 12 to 15 board feet.



Cut to length, treated with Drew's concoction, and carefully stacked, the cedar boards sat for six weeks to dry.

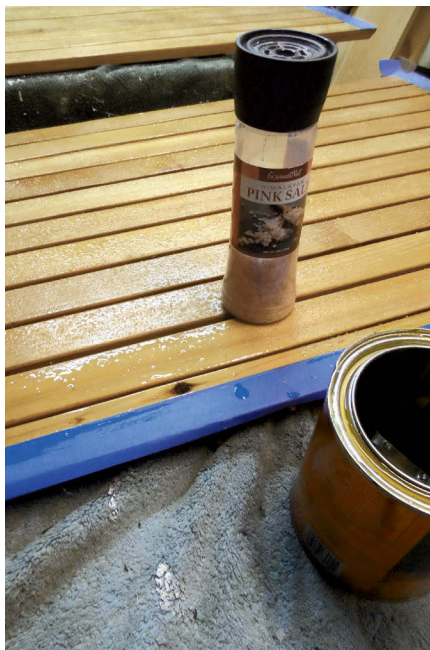
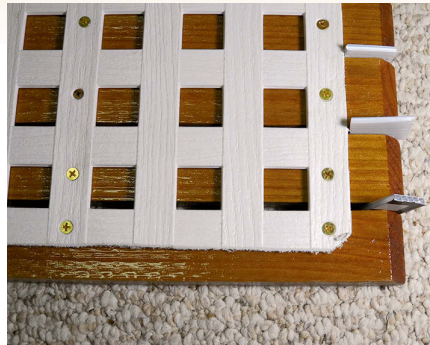


When no treatment was noticeable on the surface, I applied four coats of gloss marine spar varnish to all the decking strips, sanding lightly between coats. I used varnish rather than epoxy because it seemed to bond better, and it will certainly provide superior resistance to UV.

Assembly

After cutting the PVC lattice to size (any saw will work), I laid out the decking upside down on the cockpit sole, temporarily placing pieces of $\frac{3}{16}$ -inch sign board between the boards to ensure uniform spacing. I then laid the PVC backing on top of the decking, pre-drilled all the screw holes (every board, every 16 inches), and assembled the grating. (The screw holes, which are unavoidable, will provide a route for water to enter the wood, but so long as the water is not actively flowing through the wood, the glycol borate cannot wash out and the concentrations will remain lethal to bacteria and fungus for a very long time.)

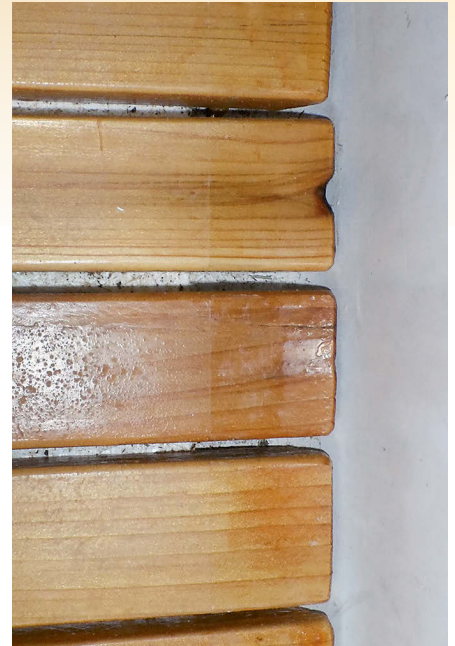
To provide a non-skid surface, I applied one final coat of varnish and thoroughly dusted it with coarse salt. This traditional "salted varnish" finish is a favorite of ours, as it is easy on the feet, cheap, and easy to maintain — recoating involves nothing more than applying a coat of varnish with coarse salt sprinkled over the top. Just for looks, I masked the narrow band around the outside so that it is not salted; you really can't slip in the last inch and a half.



When the boards were truly dry, Drew gave them four coats of varnish, top left. While fastening the boards to the backing, he inserted pieces of $\frac{3}{16}$ -inch sign board between them to ensure consistent spacing, above top.

Coarse salt sprinkled on the boards while the final coat of varnish was still wet gave them a non-skid surface, above. He left a narrow band around the edges of the grate glossy, for appearances, top right. The salted finish on the finished grate is very easy on the feet, right middle.

The grating brightens the cockpit and is flexible enough to conform to the slight curvature of the cockpit sole, at right.



For the cost of a sheet of PVC lattice, a few 1 x 8 cedar planks, a half-box of borax, and a half-gallon of antifreeze, I made a cockpit grating I expect to last for 20 years, and probably far longer. As a retired chemist, I enjoyed the process of determining how to preserve woods,

and since teak isn't the best wood for all purposes, I'm hopeful that someone will find my concoction useful. *A*

Drew Frye draws on his training as a chemical engineer and pastimes of climbing and sailing when

solving boating problems. He cruises Chesapeake Bay and the mid-Atlantic coast in his Corsair F24 trimaran, using its shoal draft to venture into shallow and less-explored waters.

Home-Brewed Preservative

– DF

I wondered if it was practical to improve the rot resistance of wood by impregnating it with appropriate chemistry, like pressure-treated lumber. To find out, I set about a research project that has run for more than five years, treating pine, fir, and cedar with common and relatively non-toxic chemicals, including propylene glycol and borate, in combination with coatings. Test platforms included totem poles, planks buried in compost, canvas, and a backyard deck. My conclusion, skipping a myriad of details, was that both glycol and borate retard rot, glycol prevents warping, and the combined effects are synergistic. What's more, after drying, neither individual compound nor the combination significantly inhibits epoxy or varnish bonding. Small wonder the National Park Service uses similar chemistry on historic totem poles and even on the USS *Constitution*.

The formulation

- 1 gallon propylene glycol (can be concentrated engine coolant).
- 2.5 pounds borax (technical name: sodium tetraborate pentahydrate).
- Thermometer, either infrared or candy, for monitoring temperature.

Slowly dissolve the borax in the glycol while bringing the mixture to a boil (~220°F). Do this outdoors or with positive exhaust ventilation, as glycol vapors are slightly toxic. Then, over a period of five minutes, slowly increase the temperature to about 260°F. Boiling will continue, as the small amount of water in the antifreeze and the water of hydration in the borax (it

is a pentahydrate) evaporates. Turn off the heat, but leave the solution covered on the stove, allowing the reaction to finish and the material to cool; the borax has not just dissolved, but has formed a glycol borate ester, resulting in a viscous liquid that is very effective in resisting washout and preventing warping.

Though pressure-treated wood is infamous for its tendency to warp while drying, the glycol in my formulation completely prevents warpage. In fact, some furniture makers will treat boards with glycol specifically to retard warpage caused by drying. All of my boards have remained arrow straight.

A simpler rot-proofing treatment can be made by simply dissolving either 15 percent borax or a 10 percent borax/8 percent boric acid mixture in warm water. This soaks into the wood more quickly, which means it may wash out more quickly. The protection is somewhat less and it will not protect against warping.



Drew tested his borax preservative on a totem pole. The pole lying in the foreground is from the same tree, and the same age, but has not been treated.

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BY
ANGÈLE
SANCHO PASSE

Counsel for Sailing Couples

Notes for creating harmony on board

more flexible sail plan (we had a main and roller-furling jib). I requested a permanently installed storm sail. Jim listened. We discussed options (type, cost, installation) and decided together to get a storm sail. The same process works well for on-the-spot decision making, such as whether or not to reef.

Safety rules

If one of us judges the weather too poor for sailing, we don't go — even if the other is willing to go. This is not a matter of the less adventurous overriding the more adventurous. We both see it as a way to ascertain risk and preparedness. We are each best able to assess our own skill and stamina and tolerance. We know that we both must feel competent for each situation.

Boathandling

Jim and I each have our areas of expertise on board, but we cross-train as much as we can and our skill-sets are complementary. I worry when I see a boat approaching the gas dock and I hear the skipper yelling, "Honey, *Jump!* JUMP!" It often means that boathandling is not a shared task and that "Honey" is likely having dark thoughts as she makes her dangerous leap. For long-term partnership in the adventure, both have to weigh the risks and make choices.

Crew comfort

Comfort is key to remaining competent and congenial partners on board. Accordingly, when provisioning, we give thought for all conditions, including fun times like afternoon tea. We organize watches to ensure we both get enough rest, we plan and navigate to minimize seasickness, and we give each other adequate personal space by balancing time on our small vessel with time on land.

The sail to Grand Marais was grim. But it was a shared grim. And that's a whole lot better than a solitary blame-filled grim. It was us against the sea, each a prepared and competent sailor. It was a shared adventure. And it left us looking forward to more. *△*

Angèle Sancho Passe, an education consultant and writer, has been cruising with her husband, Jim, for more than 40 years. Recipients of the Admiral Bayfield award for extensively cruising all the Great Lakes, they teach the online webinar "Sharing the Helm" for the Great Lakes Cruising Club School. Hola, their good old boat, a Moody 376 they have owned since 1987, is berthed at Port Superior, across from the Apostle Islands on the south shore of Lake Superior. With some occasional moments of doubt, they are committed to the adventure.

On a torturous August crossing of Lake Superior from Isle Royale to Grand Marais, the wind was either light and on the nose or roaring up randomly. Steep and confused swells shoved *Hola*, our Moody 376, from every direction. Drop after icy-cold drop of rain fell without a break. My husband, Jim, and I subsisted on our rolling-seas diet of rice crackers, peanut butter, and ginger ale. Miserable? Yes. Ready to quit sailing and take up gardening? No. In fact, this sail stands out as one of our best memories.

We had only ourselves to blame for making the crossing that day. Together we'd made the decision to leave and we were equally prepared to manage what came our way. Despite independent bouts of regret, we were buoyed by the strength and confidence that comes from shared leadership and decision making.

Jim and I have sailed together for more than 40 years. Aboard *Hola*, we have cruised all of the Great Lakes and voyaged to Newfoundland. Over time I've come to realize that the longevity of our sailing partnership is not haphazard. As the family's social scientist, I've observed other boating couples, and have thought a lot about why we've been successful. Following is a distillation of our five keys to happiness aboard.

A shared sense of adventure

Being adventurous is about having tolerance for uncertainty. For sailors, this is a useful trait, and Jim and I share it. When we cannot be sure of an outcome, we are open to the possibilities. We are flexible and resilient, able to recover from mishap and discomfort with humor and grace. It's always a good sign to hear sailing couples laugh together when telling the tales of their misadventures.

Communication and decision making

Jim calls it "my view, her view, his view, our view." Acknowledging our own perspectives, we next listen to each other. We compare the *his* and *her* ideas and discuss them, resolving discrepancies and compromising until we reach *our* perspective. For example, when we decided to cruise to Newfoundland, I shared my safety concerns. I wanted a

Mounting the Outboard Inboard

PART 2

BY JAMES BALDWIN

In “Mounting the Outboard Inboard, Part 1,” September 2018, James Baldwin summarized the pluses and minuses of replacing an inboard engine with an outboard motor; and specifically the benefits of installing the motor in a well that allows it to be tilted up and out of the water when not in use. In Part 2 of the article, he describes how he built such a well in an Alberg 30.

It's a common scenario: the original gas or diesel inboard engine on an otherwise usable older sailboat gives up the ghost, and the owner walks away. This is understandable, considering the cost of installing a new engine often exceeds the value of the boat. Sadly, many of these abandoned boats end up in landfills. Some of them, though, could present opportunities for cash-strapped but enterprising sailors who see the merits of repowering with an outboard motor. Fitting that motor in a well eliminates some of the drawbacks of hanging it on a transom bracket, where it's unsightly, difficult to operate from the cockpit, and vulnerable to being dunked in waves or rising up until the prop sucks air.

Certain design elements — keel-hung rudder, overhanging stern, and a large lazarette locker that's a minimum of 30 inches between the transom and the cockpit's aft bulkhead — make a boat a good candidate for conversion to an inboard outboard that can be tilted up and out of the water. An ideal example is the Alberg 30, a classic offshore-capable Carl Alberg design that remains plentiful on the used-boat market. I have installed 6-horsepower motors on both early- and late-model



Fitting a well for a 9.8-horsepower motor in an Alberg 30

Alberg 30s. Here, I describe building a well for a 9.8-horsepower motor with an extra-long shaft in a 1968 model named *Barbara J*. Even though the bigger motor adds another 35 pounds and somewhat complicates the construction, many sailors prefer the extra power it provides for motoring through more adverse conditions.

I completed this project, with much-appreciated assistance from my wife, Mei, while the boat sat on a trailer behind our house. Most of the work could be done on a boat in the water, after shifting weight forward to raise the waterline at the stern a safe distance for cutting through the hull, but at some point the boat must be hauled for removing the prop and closing off its aperture.

First steps

Before doing anything else, I removed the broken Atomic 4 gas inboard engine and its accessories. I then began the conversion by cutting the lazarette

hatch opening to 26 x 31¼ inches using a circular saw and a Sawzall, saving the original hatch hinges for reuse (photo 1 on facing page). With the improved access, I removed all the hardware fastened to the afterdeck, including the mainsheet traveler and backstay chainplate. This was also the right time to replace the original 6-inch mooring cleats with 10-inch Herreshoff cleats.

I cut out the chainplate knee with a Sawzall and a metal cutting disc on an angle grinder and then ground all the inside surfaces with a 36-grit pad on the angle grinder. At this point, I patched the forward lazarette bulkhead with plywood and fiberglass where needed to make it watertight from the bilge and side cockpit lockers. This ensures that, in heavy weather, water will not enter other areas of the boat from the free-flooding area of the well.

As the Alberg 30, *Barbara J*, motorsails in a near calm, her outboard shaft is just visible under her counter.



Needing a precise location and shape for the slot in the hull and transom for the motor's midsection and shaft to pass through and then tilt up out of the water, I clamped the motor to our porch rail and, using wood, cardboard, plastic panels, and duct tape, built a mock-up of the hull and transom around it (photo 2). By tilting the motor up and down and swiveling it side to side, I was able to simulate the correct slot shape in the hull and transom, transfer that shape to construction paper, and lay the paper pattern against the hull's centerline to mark for cutting (photo 3). From the mock-up, I determined that the forward end of the hull hole should be 16 inches aft of the lazarette bulkhead. Cutting the thick fiberglass was tough work, but I was able to get through it with the angle grinder and Sawzall.

To check the fit of the motor in the boat, I built a temporary jig out

of plywood, lumber, and short pieces of aluminum angle screwed into the hull and cockpit bulkhead, and made some final trimming of the slot so that the motor could swivel and tilt up. I've found from building and using outboard wells on similar boats that the best compromise is to keep the prop well below the waterline but to not have the motor head too close to the water. This I achieved by making the height of the jig 8½ inches.

At close to 100 pounds, a 9.8-horsepower motor is awkward even for two people to wrestle in and out of the well. We used a boom-vang tackle to take the weight. On a boat that's in the water, I extend the boom by lashing the whisker pole to it and attach the vang under that. Removing the prop makes it easier to insert the motor into the well and through the hull aperture. The prop can be reattached by tilting the motor up and leaning over the transom.

Putting it all together

With the motor in place to provide a reference for clearance, I made cardboard patterns of the two longitudinal bulkheads and traced them onto ½-inch plywood. Set 26 inches apart to clear the motor when turned for side thrust, these panels serve as the inboard sides of the sealed lockers the two portable gas tanks sit on. I secured the panels in place temporarily with short screws driven partway into the hull and cockpit bulkhead (photo 4).

After removing the motor to make space to work, I fitted the tops of the gas-can shelves using the same method of cardboard patterns transferred to ½-inch plywood. I recessed the shelf tops 1 inch below the tops of the vertical bulkheads and angled them down forward and inboard to permit water to drain to the lower part of the motor well through slots cut into the 1-inch retaining lip. The

shelves need to be at least 11½ inches below the deck to allow clearance for inserting the gas tanks. A pair of 1- x 2-inch pine cleats hold the forward ends of these shelves in position. Because the tops of the gas-tank shelves were too large to fit past the vertical panels, I had to place them inside and clamp them out of the way until I'd glassed in the vertical panels, after which I lowered them into position and glassed them in as well.

On my first outboard wells, I glassed in each component before cutting and fitting the next, but I learned it's faster to dry-fit most of the panels and then fiberglass them all at the same time. Before applying the fiberglass, I brush epoxy resin onto the surfaces. At the edges, I apply fillets by squeezing epoxy thickened with colloidal silica out of the cut corner of a zip-closure freezer bag, smoothing them with a rounded plastic spreader. The fiberglass layers can go directly on top of the fillets before they harden.

Because even marine plywood is vulnerable to rot if it becomes water-logged, I was careful to apply at least three coats of epoxy resin to both sides and the edges, and I covered all the exposed surfaces with fiberglass cloth. Where panels are joined to the hull, I used at least three layers of fiberglass tape in 2-, 4-, and 6-inch widths.

(Although considerably more expensive, high-density fiberglass-reinforced polyurethane panels such as Coosa or Baltek Airex PXC can be used instead of plywood and do not need extra coats of epoxy and fiberglass just for waterproofing. I cut, shape, fasten,

and fiberglass over them just as I do plywood.)

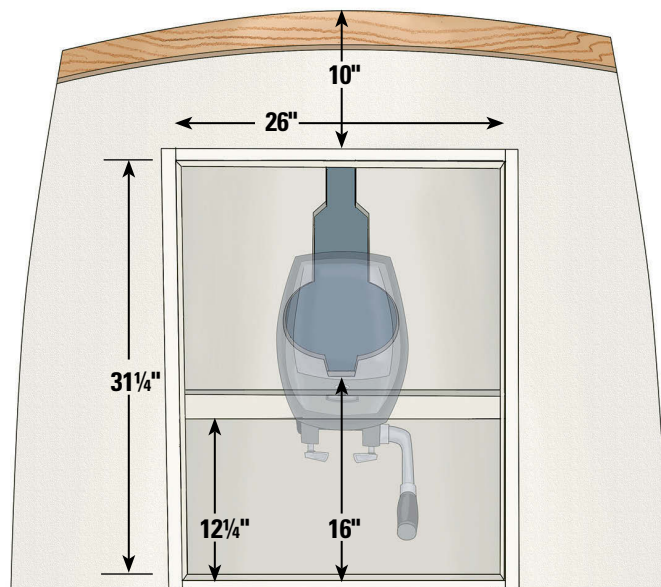
After the gas-tank shelves were finished, I installed the 1¼-inch-thick laminated transverse motor mount board along the line marked on the hull from the jig position. To provide an indent to fix the motor's position, I cut down the 9-inch-high board ½ inch in the center. Because this board is subject to a lot of stress and vibration, I secured it with five layers of cloth.

We then set the motor back in to ensure we had adequate clearances and to get accurate measurements for the height of the hatch framing and lid (photo 5). This 9.8-horsepower motor needed 8 inches of clearance above deck level. Instead of making the framing unattractively tall, I made it 3 inches high and raised the center section of the ¾-inch-plywood lid 5 inches by glassing to it a piece

I made by laminating fiberglass and a ¼-inch-plywood core inside a suitably sized plastic storage bin (photo 6). The motor's throttle handle protruded above the motor head in the tilted-up position, so to keep the hatch as low-profile as possible, I cut 1 inch off the end of the handle. (The rubber cover can be glued back on to the shortened handle.)

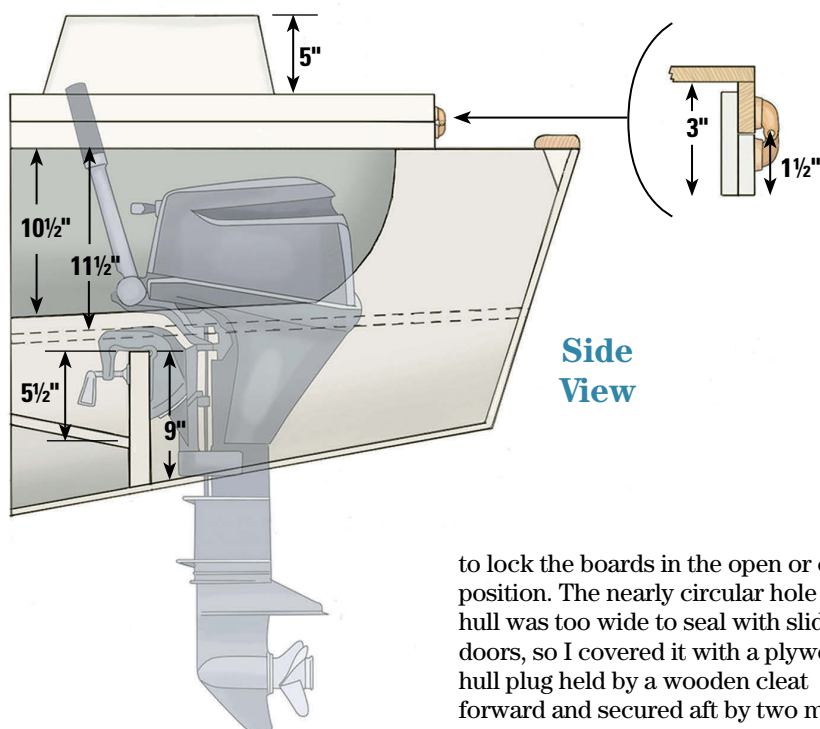
To make the hatch-support flange, or sill, I used four pieces of ¾- x 3-inch plywood stood on edge. First, I epoxied the two side sills to the deck and drove in screws from underneath. Then I set the end pieces in place, traced the line of the deck camber on their bottom edges, cut them to fit, radiused the edges, and glassed all the pieces inside and out. The aft sill received an additional 1½-inch-high frame on the outside. That double thickness helped stiffen the deck and gave a flush surface for installing the hinges between the

Top View



ILLUSTRATIONS BY FRITZ SEEGER





Side View

teak frame of the hatch lid and the sill. To add even more support for the area cut out for the enlarged hatch, I added a layer of 1/2-inch plywood under the aft center of the deck. I made sure to leave enough clearance under the taffrail flange so I could reach the fasteners for the new external chainplate, mooring chocks, or other deck hardware.

With the motor in the tilted-up position, I used a cardboard pattern to make two 1/2-inch-plywood sliding boards to fit around the motor shaft and cover the transom slot (photo 7). They each have a horizontal slot and a pair of 2 1/2-inch 5/16 flat-head stainless steel machine screws countersunk from the outside of the transom and epoxied in place. Two knobs on the inside tighten

to lock the boards in the open or closed position. The nearly circular hole in the hull was too wide to seal with sliding doors, so I covered it with a plywood hull plug held by a wooden cleat forward and secured aft by two metal tangs on the sliding boards (photo 8). The idea is not to make the hole watertight — that would be impractical — but to reduce the amount of surging water that enters the well when sailing in large seas and to allow the water that does enter to drain back out.

We removed the motor once more to construct a third buoyancy chamber between the motor-mount board and the cockpit bulkhead. We angled the 1/2-inch plywood panel downward to drain aft and just low enough to allow the motor-tension handles to be turned. Once it was glassed in place, I drilled 1-inch holes in the corners to allow any water that splashes over the motor-mount board to drain into the motor well and back into the sea. That plywood also added significant strength to the highly stressed board.

Finishing details

The many details to finish the project included adding eye straps and wooden cleats to secure the gas tanks, a tether to prevent the hull-hole plug below the sliding boards from being lost overboard during insertion or removal, a latch for the front of the lid, a rubber gasket under it, and a lid-support spring. Also, I bolted the motor to the mount to prevent it from vibrating out of position. Since these holes are in a wet area near the water, I drilled them to 1/2 inch, injected thickened epoxy with a syringe, and then redrilled them for 1/4-inch bolts.

For access from the cockpit side lockers to the sealed lockers under the gas-tank shelves, I installed 6-inch screw-out deck plates in the lower vertical bulkhead. Because there is no inboard engine and drivetrain in need of access, an obvious future project would be to make the cockpit lockers watertight. Aside from protecting these areas from accidental flooding, sealing them off from the bilge would allow fuel, including spare cans of gas, to be stored more safely.

I ran the wiring from the motor's electric starter and alternator, as well as for the stern light and two pole-mount solar panels, through a hole high in the cockpit bulkhead and sealed it with caulk. If I were concerned about chafing, I could have run the wires through a cable clam. A bilge pump outlet hose can be similarly run through the bulkhead with caulk to prevent leaks into the cockpit side lockers.

Having removed the original backstay chainplate knee, we fabricated a





The 9.8-horsepower extra-long-shaft Nissan fits neatly in the completed well, at left. The new mainsheet tackle and 10-inch mooring cleats are also visible. The outboard motor's prop is nearly as low in the water as the original inboard engine's prop, at right. The aperture for the original prop has been filled to reduce drag and improve the efficiency of the rudder.

beefier replacement external chainplate from $\frac{1}{4} \times 1\frac{1}{2} \times 12$ -inch stainless steel flat bar bent to fit over the taffrail. Similarly, with the mainsheet traveler gone, we added a three-point end-of-boom sheeting tackle.

I sanded and partially faired the inside surfaces of the outboard well and gave them two coats of InterProtect epoxy barrier coat instead of primer and paint. Because *Barbara J* was getting repainted inside and out, we sanded, faired, and primed the afterdeck and outside modification areas, and painted them with Interlux Perfection two-part polyurethane.

On the horizontal surfaces, we added non-skid grit as used on the rest of the deck. (More recently, I've switched to KiwiGrip, which I find improves traction and is faster to apply.)

Although optional, it made sense to fill in the prop aperture in the hull and rudder. This increases the boat's performance by reducing drag and makes the rudder more effective. The aperture can be filled using foam board or laminated plywood fiberglassed and faired.

Performance

The owner of *Barbara J* has sea-trialed the outboard well on several short passages offshore along the coast of Georgia, as well as on a round trip to the Bahamas. The performance was even better than expected, with the motor easily handling moderate waves and headwinds in ocean inlets. During a day of strong wind against tide, the prop did briefly come out of the water a few times, but not enough to cause him to turn back. Another great feature

is that, by swiveling the motor for side thrust, these long-keeled boats can be made to turn in their own length — something that could never be done with an inboard engine.

How much horsepower?

In 2016, on another Alberg 30, I made a passage from Connecticut to Brunswick, Georgia, with a 6-horsepower motor in a similar outboard well. We used the motor in a variety of conditions, including motorsailing 200 miles of the ICW from Norfolk, Virginia, to Beaufort, North Carolina. A useful technique when encountering headwinds on any relatively underpowered sailboat is to reef the main, sheet it in tight, and motorsail in zigzags 20 degrees either side of the wind. With the mainsail adding drive and a steadying effect,




On another Alberg 30, James cut a narrower slot in the hull and transom, at left, for the smaller 6-horsepower motor, at right. The hatch was slightly smaller, so its lid did not require a raised center, and the original traveler was retained.

the motor can supply enough thrust to push the boat forward at a surprisingly effective rate. On that trip, we found that we averaged 10 miles per gallon at nearly full throttle. We carried extra gas cans that extended our range to 150 miles, which is more than most of us will need. Because there was plenty of space, the owner of *Barbara J* has added two more 3.1-gallon gas tanks to make a total of over 12 gallons. When one tank is empty, he can snap the fuel line onto another tank and carry on.

The question always arises if 6 or even 9.8 horsepower is enough for a 30-foot boat. That depends on your expectations and what type of sailor

you are. As with everything on a boat, you need to be aware of its limitations. Top speed in calm conditions for the 6-horsepower motor is 5.5 knots, but that drops off quickly in strong headwinds and waves. The 9.8 pushes *Barbara J* at up to 6.5 knots and has nearly as much effective power as a typical inboard engine without the hassles of wasted space, oily bilges, and the need either to become a proficient diesel mechanic or to bring one to the boat from time to time.

I still get a thrill each time I hoist sails on my Pearson Triton and tilt the motor up for drag-free sailing. I can relax as I sail right over those fish traps

without fear of fouling a propeller. But adopters of this conversion must be prepared for protests from fellow sailing-club members when they start to win more races. 

James Baldwin completed two circum-navigations in his Pearson Triton, Atom, and has written three books on his adventures as well as several articles for Good Old Boat. Based in Brunswick, Georgia, James and his wife, Mei, work to assist other cruisers to prepare themselves and their boats for offshore voyages. Find more, including a video of this project, at www.atomvoyages.com.

Tools, Materials, and Costs

—JB

Tools

- Drill with bits and countersink bit
- 4½-inch angle grinder with metal-cutting discs to cut fiberglass, and a backing pad and 36-grit discs for shaping
- Jigsaw
- Reciprocating saw (Sawzall)
- Circular saw or table saw with 60-tooth carbide-tipped blade
- 5-inch orbital sander with 80, 120-grit paper
- Router with ¼- and ⅜-inch round-over bits
- ⅜-inch Forstner bit for bungs in teak hatch-lid trim
- 1-inch and 2½-inch hole saws
- Standard tool kit (hammer, wrenches, screwdrivers, etc.)

Materials

- New or used Nissan or Tohatsu 9.8-horsepower outboard motor model MFS9.8BEFUL and two 3.1-gallon gas tanks (onlineoutboards.com)
- West System epoxy resin and hardener: three 1-gallon kits
- West System 406, 407 fillers
- Medium-weight fiberglass cloth: approx. 4 yards x 48 inches
- 2-, 4-, and 6-inch fiberglass tape: 50 feet each (minimum)
- 4 x 8 sheet of ½-inch marine plywood: one
- 4- x 4-foot half sheet of ¾-inch plywood: one
- ¾ x 1 x 8-foot pine or hardwood lumber: three
- InterProtect 2000E white barrier coat: two quarts
- 2-part primer and paint as needed for repainting afterdeck
- KiwiGrip or other non-skid paint: one quart
- ¾ x 1½ x 8-foot teak hatch trim: one
- #10 flat-head stainless steel sheet-metal screws: assorted lengths between 1 and 2 inches

- ¼ x 1½ x 12-inch stainless steel plate for new external backstay chainplate
- Moonlite Marine 0115 Big Hatch Holder spring (defender.com)
- ⅝ x 2½-inch flathead machine screws: two, plus four stainless steel washers
- ⅝-inch plastic knobs with threaded hole: two (mcmaster.com #5993K84)
- Chromed brass latch
- Four stainless steel eye straps and webbing with snaps or ¼-inch line to secure gas cans
- ¼- x ¾-inch x 6-foot rubber gasket
- 3M Black Super Weatherstrip Adhesive
- West Marine Multi-Caulk sealant or similar
- Dust masks, gloves, goggles, acetone, alcohol, rags, paper towels
- 2- and 3-inch chip brushes and fiberglass roller

Mainsheet tackle from Garhauer (garhauermarine.com):

- MS-SJ swivel jam with deck mount
- 30-14 US single block with becket
- 30-19 US single block with swivel stand-up deck plate
- 30-17 US double block with adjustable shackle for end of boom

Costs

Someone with adequate skills (practiced on less complex boat repairs) and with the assistance of another as needed should be able to complete this or a similar project in 90 to 100 hours. In this instance, the motor was purchased used for \$1,100 and the other materials cost about another \$1,100. Even using a new motor, the cost, excluding labor, is significantly less than that of a new diesel engine. For someone who appreciates the simple functionality of the outboard-motor solution, the relatively low cost is a bonus.

A Teak Deck Reclaimed

Worldwide connections give a 50-year-old sailboat a new lease on life

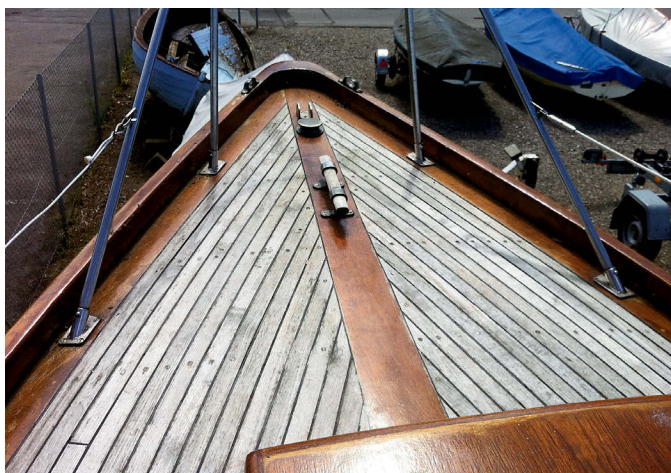
BY GLEN SWANSON

It's midafternoon in late August 2015, and the wind is howling at a near gale. We'd put two deep reefs in our mainsail hours before, and our smallest headsail is set and standing as rigid as a sheet of tin. *Rita* is screaming along, at least to the degree that a 26-foot Danish-built sloop from 1968 can scream along. My wife, Lene, is at the helm and we're both amazed at how little effort it takes her to keep *Rita* steady and on course. The deck is awash, and that's exhilarating ... except that too much of that deck water is seeping down below, soaking our bedding and cushions and causing the bilge pump to do what bilge pumps are there to do. As it's late in the Danish summer, we'll have little if any sunshine to dry things out when we reach port in another hour.



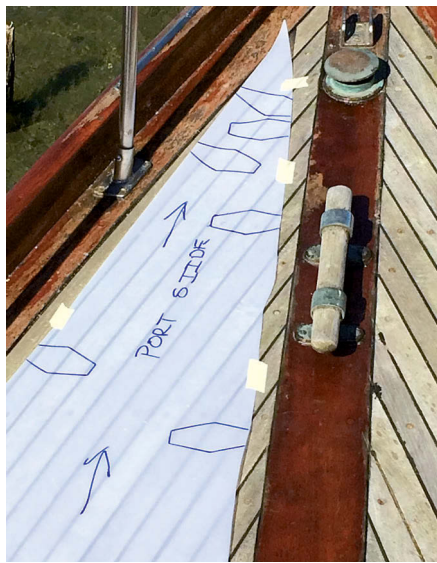
A few days earlier, in a quiet little marina on one of our neighboring islands, I was sipping coffee in the cockpit when a fellow on a rather grand-looking 55-footer alongside looked down and said with a sincere, nostalgic smile, "You know, I can remember back when that was a big boat."

How true. *Rita* is a Bandholm 26, one of the more popular little coastal cruisers of the mid-1960s. A generation of families sailed through Scandinavian waters in Bandholms and similar boats through the '60s and '70s, but their numbers have dwindled and we've become more a spark of nostalgic



Spruced up with fresh varnish and her new deck, *Rita* is ready to splash, at top. Her old deck was in poor shape, above left, with missing bungs and caulk peeling from between the planks. *Rita*'s pretty lines alone almost justify the investment in a new teak deck, above right.

with Reclaimed Teak



Shipwright Peter Taprell traced the deck edge onto Mylar, at left. The Mylar doesn't have to be an exact fit because tracing around the "fish" establishes the perimeter of the deck with precision, center. The finished tracing of the aft starboard deck has lots of marks, at right.

reflection. But Bandholms come with a serious pedigree. Their designer and builder was the late Knud Olsen, famous for his design of the little OK sailing dinghy and his contribution to the design of the Folkboat. Though not clinker-built of wood, *Rita* clearly shows the best of those antecedent lines. She was one of the early fiberglass hulls in Denmark, but with a mahogany cabin and a ply deck covered by Burmese teak.

Earlier that summer, Lene had tried to stop up some gaps in the deck with caulk and a magic anti-seeping elixir from a local chandlery, but to no avail. *Rita* continued to weep below. Across the old teak deck, wooden bungs were missing and the old caulking had peeled and disintegrated to the point that *Rita's* deck was little tighter than a sieve, and the longer water sat trapped between teak and plywood, the bigger our problems would become.

We knew we had to do something, because *Rita* is so much part of our lives, but our options for restoring her deck were few. Synthetic "teak" decking looks very good on a modern boat, but it just didn't seem the right answer for a boat of *Rita's* vintage, and having a Danish yard lay a new teak deck would

have been beyond our budget. But . . . because of my job, I had a very special connection.

The Wizard of Oz

A couple of weeks after that wet sail, under the remote guidance of our good friend Peter Taprell, the shipwright from Sydney Harbour Boatbuilders in Yangon, Myanmar (see "The Myanmar Connection," page 27), we assessed the current state of the deck. As *Rita* has no headliner, we were able to inspect the underside of the plywood under the sidedecks. We saw no sign of rot or extensive water damage there, just staining. When we carefully lifted a few teak planks from on top of the plywood, we also found solid material.

With notes and photos in hand, and with *Rita* on the hard in our home port of Præstø, under a tarp, winterized, and out of harm's way, I returned to Yangon, where I work for a Scandinavian aid organization. Peter and I discussed *Rita's* deck, and I asked him to fly to Copenhagen with me on my next work break and make a professional evaluation. If she passed his critical review, we'd make a template of her deck from which his team in Yangon could construct a new one.

By following Peter's instructions, and having seen how this was done in the Yangon shipyard, I could have drawn up the templates myself, but Peter wanted the opportunity to visit Denmark and see *Rita* for himself. He assessed her as restorable, and set about drawing up the templates that would become the deck. He traced the deck outline on Mylar sheets, at the same time mapping the placement of all the fittings and any characteristics that needed to be incorporated into the construction. (The cabin tops on *Rita* are painted, so were not included.) The beauty of using Mylar was that Peter could roll up the sheets, slip them into a cardboard tube, and carry them home to Yangon.

Making the deck tracing was quite elegant in its simplicity, and for such a small deck the process took only a few hours. Peter cut the Mylar to fit just inside the perimeter of the teak deck and secured it with masking tape tabs to prevent it from shifting in the wind. Then he took out of his bag of tricks a palm-sized five-sided wooden form (I called it a "fish"), which he placed so that about three-quarters of it was on the Mylar panel and the pointy end came to rest at the very edge of the old teak deck. He marked the leading edges



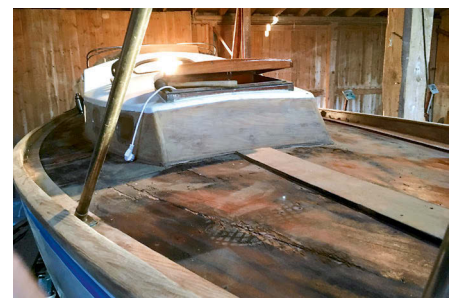
A worker used his hands and feet to fit the teak strips together, at left. The assembled deck panels are glued together with caulk, below.



Stripping the old deck

While the deck was being assembled in Yangon, we moved *Rita* into one of the 19th-century warehouses at the harbor in Præstø, where she could dry out. Lene and I began removing all the deck fittings, which after over almost 50 years of service had tarnished. On my business trips back and forth, I was able to bring a lot of them with me to Yangon, where I asked the metal shop at the boatyard to polish them.

Removing the teak from the deck took almost no time — about three days — and we were surprised to see how little wear it showed when we measured the thickness of some of the strips. They were down to about 10 or 11 millimeters from the 13 or 14 millimeters I estimated they



and traced around the “fish” onto the Mylar, repeating the procedure again, and again, and again, especially at curves and anywhere deck hardware was placed. The more marks he made, he said, the more accurate the patterns would be.

The result was a remarkably accurate fit that could be lofted and then built in the boatyard in a controlled environment.

Made in Myanmar

At the yard in Yangon, the Mylar patterns were laid out on sheets of particle board onto which, using the same wooden fish, we transferred their shapes. When done, we had before us the traced outline of *Rita*'s deck. This would become the platform on which the new teak decking would be assembled.

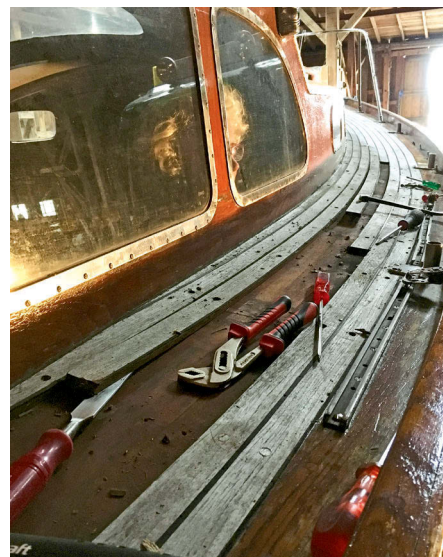
The team at the yard responsible for crafting the decks have been trained and supervised by the guys from Sydney over the last 12 years, and their ability to assemble a deck is a sight to see. While most decks they work on are much more complicated than *Rita*'s, this was still a job beyond my capabilities as an amateur.

Because I would be taking the deck to Copenhagen as excess baggage, it had to be built in sections to meet the package-size limits. The port and starboard sides were each made in three sections, the aft deck in two panels, and the cockpit sole in two panels.

When all the sections had been assembled, the crew “flat-packed” the entire deck into two packages that could be loaded according to the

airline's restrictions on length and weight. The weight wasn't too great of a concern as the prefabricated replacement deck weighed in at about 35 kilos.

Ironically, preoccupied with the delay in exporting our deck from Myanmar, we neglected to pay attention to our Danish importation paperwork. When we got to the freight-collection point at the Copenhagen airport, we discovered that our documentation clearly indicated that we were collecting a live crocodile from the Munich Zoo! Fortunately, we sorted that out and didn't have to lead a snapping croc out of the airport and into our car. Peter had a different take: “Mate, you should have stone-face accepted the croc, sold the bugger on eBay, and with the earnings bought yourself a new boat!”



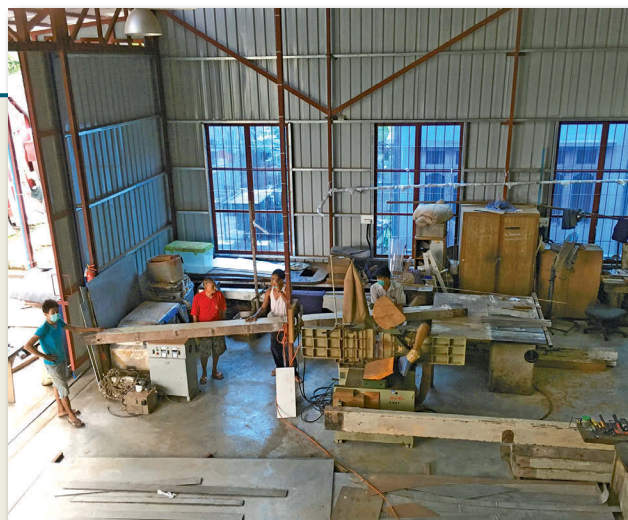
Strip by strip, Glen and Lene removed the old teak, at left. With the old deck off, they began stripping varnish, upper right. Some water-damaged ply subdeck needed repairs, at right.

I work in Myanmar as country manager of a Scandinavian aid organization. There in Yangon, I share a large apartment with Peter Taprell and a team of Australians at Sydney Harbour Boatbuilders who do extensive restoration work on high-end yachts. With their support, I was able to give *Rita* a new deck made of reclaimed Burmese teak, at cost.

One of the many troubling aspects of Myanmar's political transformation is the rapid pace at which buildings in Yangon and other major cities are being torn down. These old buildings had been constructed using old-growth wood with strong, even grain growth, and the massive seasoned timbers were being torched on burn piles at the construction sites. Sydney Harbour Boatbuilders began tracking down construction sites to identify the quality timber and, whenever possible, ensure it was not damaged during demolition. The wood they reclaim is superior in quality over faster-growth plantation wood offered elsewhere.

While my circumstances were possibly unique, my experience shows how a deck can be made for a reasonable sum, even when taking into account, on top of materials and labor, shipping, taxes, and other costs associated with importing a similar prefabricated deck from Yangon. Even including flying a shipwright to the boat to supervise and assist in the installation (as I did), I estimate the cost would still be half what a yard in the developed world would charge. Of course, this approach requires careful dialogue with the pros in Yangon, to establish the scope of the project, and patience, as it could span a few months.

It wasn't all smooth sailing. At one point we hit a wall that almost stopped our endeavor. As the deck neared completion on the workshop floor, the new Myanmar government, as a way to curb illegal cutting, placed a temporary restriction on the export of teak. Rita's new teak deck, constructed from reclaimed timber, was exempt from the restrictions. But due



Sydney Harbour Boatbuilders in Yangon processes teak timbers reclaimed from buildings being demolished.

to widespread insecurity of government clerks, who went into a state of near-panic trying to understand the scope of the new restrictions, it became virtually impossible to export almost any wood products from Myanmar during this time.

My office staff really put their backs into helping me wade through the quagmire of getting all the necessary certificates and signatures for export. Perhaps I could have taken a more "streamlined" approach, but in more than 25 years of working in countries with emerging democracies, I've learned the value of standing by a rule of never, ever paying bribes or "tea-money." Circumventing petty bureaucrats with informal fees only contributes to the entrenchment of processes that can't be rolled back — pulling back from graft is like trying to unring a bell. So it was through patience and persistence that we received authorization and certification for export so that we could load our deck onto the flight to Copenhagen. In the end, the deck arrived just a day before Peter was to arrive to begin overseeing its installation on *Rita*.

had been when installed. It appeared that the bungs were popping out because the screws were not countersunk deep enough.

Peter was due to arrive in six weeks, during which time we let the exposed plywood dry out, a process we boosted by running an electric dehumidifier belowdecks for about 10 days. Where we did find a couple of palm-sized areas of surface deterioration and small patches of softening wood, we ground out those few millimeters of bad wood. When they had dried further, we filled them with thickened epoxy.

During this drying period, using a heat gun and a hand scraper, I began removing the varnish from the cabin

sides, toerails, and cockpit coamings. I'd hoped to have it all down to bare wood and revarnished before we fitted the new deck, but between short visits and meetings at the home office in Copenhagen, I ran out of time. This in itself wasn't a big problem, other than requiring me to take more care when masking and varnishing than if I had stuck to the original timeline. They say the first casualty of war is the battle plan, and so it seems also with boat work.

Fitting the new

When we were finally ready to begin installing the deck, we used Peter's first day to build a scaffolding around *Rita* from old pallets and planks stored

in the shed. This reduced the risk of falling off the boat by letting us work at a comfortable chest level and reach almost across the deck without too much crawling about.

While the deck panels were being prefabricated, we'd discussed how we would bond them to the plywood substrate. We considered vacuum bagging, which would have best ensured the strongest bond, but Peter decided that plugging all the old screw holes to make pulling a vacuum possible would have been too much work. In the end, we made up dozens of wooden pads measuring about 2 inches square, used them to hold down a section as we bonded it with thickened



West System epoxy, and removed them once the epoxy had set. We then had to touch up the places where we'd screwed the brace pads through the Sikaflex 290DC holding the teak strips together, but that wasn't too much of a problem.

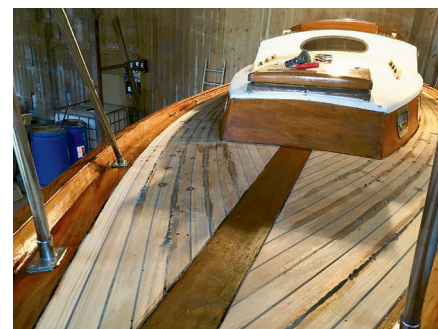
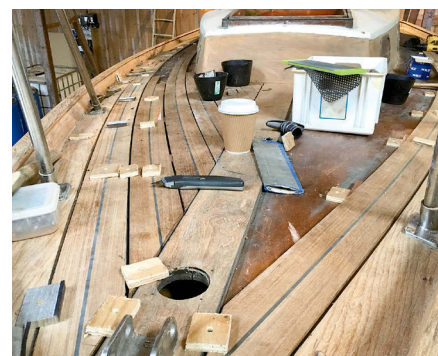
All in all, it took us about 10 days to install the deck. We began with a lot of cleaning and sanding to ensure the surface was ready. Then, area by area, Peter troweled out the thickened epoxy, laid in the panels, and braced them in place with the screwed-down temporary pads.

The work would have gone more quickly, but we ran into an unfortunate problem. Without explicit instructions, when the team in Yangon packed the panels for my flight home they didn't attach them to temporary backboards. Consequently, the curved panels began to straighten out more than would allow the larger sections to drop neatly into place. We had to cut some of the panels along the Sikaflex seams and separate them, then flex them back into shape as we positioned them on the deck. It all went well, but that error cost us another five days' work and more Sikaflex to lay into the seams of the panels we'd separated.

Finishing up

Before Peter left, he showed me how to use a very sharp chisel to trim down the excess new caulk. While I had to take care not to gouge the new wood, once I found the right angle of attack, I amused myself by trying to get the longest continuous slice of caulk. I wouldn't win any awards for my cuts, but the sensation was akin to the pleasure of popping bubble wrap.

As good as the deck looked then, it still needed a thorough sanding with 80-grit paper and working up to 240-grit. Eight hours later she was just about done. All that was left to do was touch up the Sikaflex caulking in a few spots... then the daunting task of drilling and cutting holes in the deck for cleats, tracks, and deck fills for the diesel and fresh water, which we accomplished with frequent references to our drawings and photos.

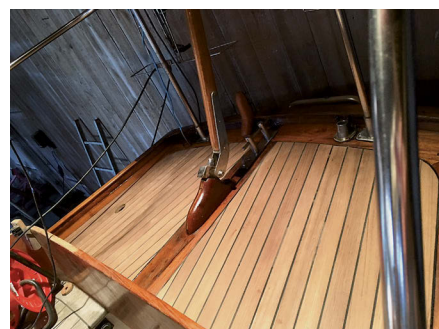
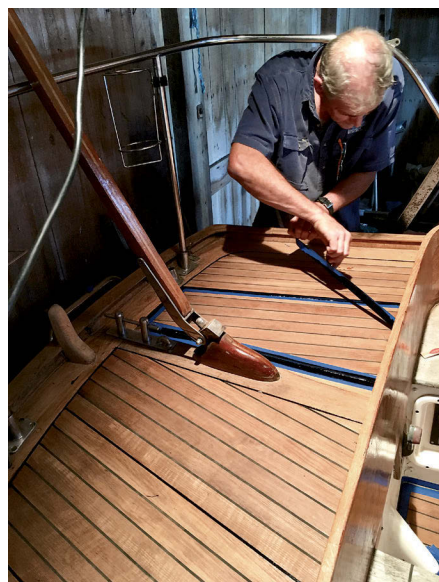


Peter makes a good start on the starboard side, at top, and on day six is progressing without problems, middle. The deck is laid, caulked, and ready to be sanded, above.

By that time, summer had passed and I was back and forth to Yangon through the fall and winter. Between visits, I was able to reinstall the polished deck fittings, bedding them with Sikaflex and butyl tape.

It was late May 2017 before we finally launched *Rita*. Her 18 months on the hard were transformative, and she now looked lovely and proud.

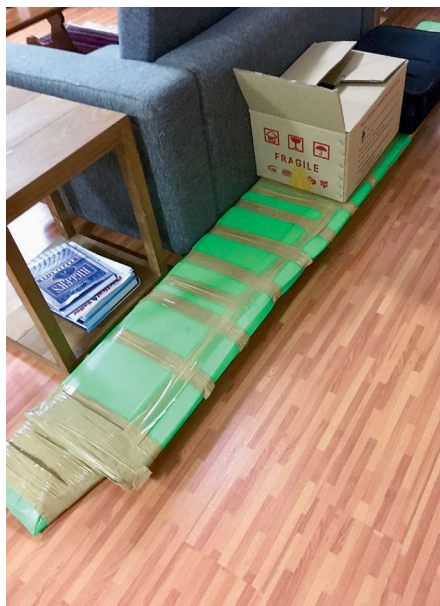
After installing new rigging and fitting some new sails from the sailmaker in Phuket, we were off for a summer around the eastern islands of Denmark. It was a great sail, and although the decks were dry, we did find a couple of leaks that we were able to trace to the caulking where




Epoxy spread on the aft deck is ready to receive that section of deck, at top. Glen takes satisfaction in peeling tape before the caulk sets, middle. The completed aft deck gleams with its new teak, above.



Other than being dusty from its first sanding, the foredeck is finished, at left. Back in the water, *Rita* looks like new, middle left. Teak planks are sorted and graded in Yangon, bottom left. The assembled deck panels are packed and ready for shipping, below.



the cockpit meets the cabin edge. This was the one area where we did not upgrade, so cutting out the old caulk and recaulking the seams went on the task list for winter.

Overall, I'm chuffed that *Rita* has a new deck and a new lease on life. As she approaches her 50th year, the old girl now has a serious chance to sail on for at least another 40 years — and look good as she does so. 



Glen Swanson began sailing after university, when he was invited on a daysail from Victoria, on the west coast of Canada. That led to a long summer of sailing the West Coast, then onward to Mexico, and in and around Panama. On that trip, Glen met his then-to-be wife, Lene. In the mid-1980s, they moved to Denmark, where they have since shared their passion for sailing. For the last 12 years they've sailed Rita every summer in the Baltic, and whenever they can, they sail with friends in Southeast Asia. Glen is currently working from the Bangladesh office and continues to travel frequently to Yangon and other parts of Asia.

Points to Ponder –GS

On a smaller boat, the cost of a new teak deck is proportionately higher than the value of the boat and will probably never be recovered. We paid about \$1,200 for the teak, and the total for the epoxy, caulk, and other materials was about the same. We also paid \$2,400 for two round-trip tickets from Yangon to Copenhagen for Peter. Fortunately for *Rita*, and for us, we could afford and absorb that cost in the belief she will now see us out, as there is no reason not to think that *Rita* has another 50 years in her.

I would caution against the average handyman taking on this challenge. While enthusiastic amateurs could undertake a lot of the steps involved, there were a number of times it was invaluable having a professional shipwright overseeing the project.

Even with professional supervision, there is plenty of room for DIY, especially in the preparation and finish work, both of which are labor-intensive. They are also time-consuming, so that's a big factor to consider when putting together a timeline for the project. The actual installation of our deck took 10 days, but the prep took almost 20 days, and the cleanup, which included sanding the deck, redoing the brightwork, and re-installing deck fittings, took the rest of the summer and some weeks into the following spring.

Documentation — lots of photos and measurements of the original deck layout — will mitigate against dumb errors. Even on a small boat, recalling where everything went when faced with the clean slate of a new deck can be daunting.



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No-Haul-Out Rudder Drop

With careful planning,
a rudder can be unshipped
and refitted in the water

BY ROBIN URQUHART

The lengths that sailors go to avoid hauling out range from the ingenious to the ridiculous. Friends of ours recently plugged a leaking through-hull with a carrot inserted from the outside, then careened the boat with an anchor to a 35-degree angle to bring the through-hull above the waterline so they could replace it. While much can be done to effect repairs in the water, sometimes a haulout is unavoidable.

We reconciled ourselves to this prospect after noticing that, when a wave raised the waterline of our Dufour 35 above the top of the rudder port, water trickled steadily from around the bearing. It wasn't clear what the failure mechanism was, and after packing J-B WaterWeld epoxy around the seam to no avail, my wife, Fiona, and I agreed we faced a \$500 haulout and another week or two in the yard. We weren't happy.

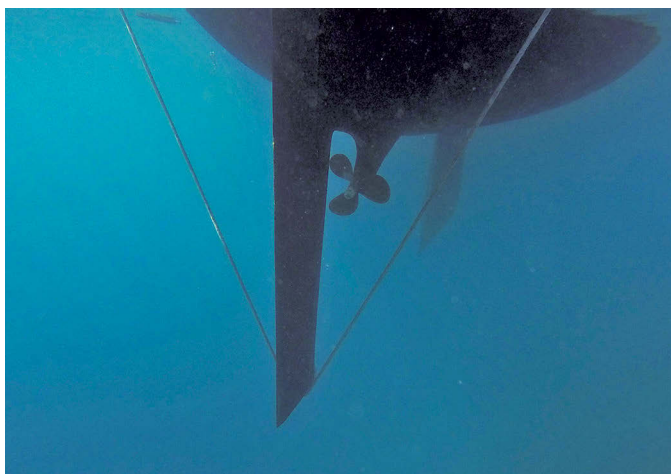
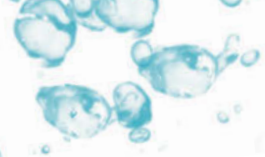
As luck would have it, that's when *Bonnavalette*, another 1979 Dufour 35, pulled up and grabbed the mooring beside our *MonArk*. Our boats were only two numbers apart off the assembly line in La Rochelle, France. We had never even seen another Dufour 35 before, let alone our twin sister. Even luckier, *Bonnavalette* was captained by two extraordinary young Swiss fellows who had recently completed the Northwest Passage. After hearing our dilemma, they reassured us that we could drop the rudder and fix the problem in the water . . . after all, they had just done it themselves.

The next day, we had the rudder lying on the deck of the boat.

Rudder design

Almost every boat has a different rudder design. While there are many similarities between rudders of the same type (spade, skeg-hung, transom-mount), almost no two are the same on

Warm tropical waters made the swimmer's role easier in the rudder-extraction exploit.



Before dropping the rudder, Robin and his helpers ran a lifting line under it to take the weight, at left. They then wrapped a safety line around the rudder, at right, so they could maneuver it out of the boat and to one side for hoisting it aboard.

boats of different design. I've tried to provide general guidance and principles to help the reader develop a method for dropping a rudder, no matter what the specific rudder design parameters are.

It may be difficult to determine exactly how a rudder has been designed and built. The bearings are often in locations to which access is difficult or cramped. The best place to start figuring out how a rudder is constructed is online, where you might find drawings of the rudder assembly on the designer's website, or the designer might be able to send them to you. Forums are another good place to check for advice.

After doing some research, it's important to take a look for yourself. On boats with wheel steering, the quadrant often obscures the view of anything going on below it, so you will likely have to remove the quadrant to get a better look.

The rudder port should extend well above the waterline, but this is not always the case. On many boats, the rudder port is at or below the waterline, and is fitted with a stuffing box to keep water from seeping around the rudder stock. It's more difficult, but not impossible, to remove the rudder if the rudder port does not extend above the waterline. Raising the stern by moving weight to the bow might help, but at the very least you will have to be very quick with a plug, as a 1½- to 2-inch hole fills a boat with water surprisingly quickly.

Rudders are secured to boats in a variety of ways, ranging from clamps to plates to lock rings to eyebolts. It may

take some investigation to understand how your rudder is secured, but removing the mechanism shouldn't be too difficult.

Our rudder

The rudder on a Dufour 35 has a skeg, but the skeg doesn't bear any weight. A pintle at the bottom of the skeg provides lateral support at the bottom of the rudder. A Delrin sleeve at the underside of the cockpit seat provides lateral resistance at the top of the rudder stock. The main axial bearing (the bearing that takes loads parallel to the axis of the rudder stock) is a Delrin bushing. It sits on top of a lip seal, which keeps seawater from encountering the bushing. The rudder stock runs inside a 6-inch-long Delrin tube fiberglassed into the hull, which provides lateral resistance to the forces acting on the rudder as the boat moves through the water. The axial bushing sits on a rudder port that extends about 8 inches above the waterline. A tapered through-bolt prevents the rudder from falling out of the boat. This is common on older, smaller boats.

Removing the rudder

To facilitate removing the through-bolt, we had to take the weight of the rudder off it by lifting the rudder slightly. We tied safety lines to the rudder to make sure that, when we removed the bolt, the rudder wouldn't sink out of sight. After we'd removed the bolt, the lines supported the weight of the rudder so we could lower it and maneuver it to the side of the boat.

Taking the weight

We began by removing the shoe that attaches the pintle to the bottom of the skeg and over which the foot of the rudder stock sits.

We then tied a line around the rudder and made it very tight using loops of rope, the same way a two-block system works. The shape of the rudder and the slot at the bottom ensured the line was not able to slide off the rudder in either direction.

We tied two other lines to this line, ran one up each side of the boat, and secured them. (Some rudders might have to be tied up like a Christmas present to ensure the line can't slip off.)

With the safety lines attached, we ran a lifting line from one side of the boat to the other under the bottom of the rudder.

We took the pressure off the through-bolt by tightening each side of the lifting line with the cockpit winches to lift the rudder about ¾ inch until the blade itself contacted the hull. We at first tried tightening only one side of the lifting line, but all that did was flex the rudder stock to that side and it bound against the inside of the rudder port. We had to tighten both sides at close to the same speed to create an upward force, and a swimmer had to push on the sides of the rudder to prevent the stock from binding in the tube.

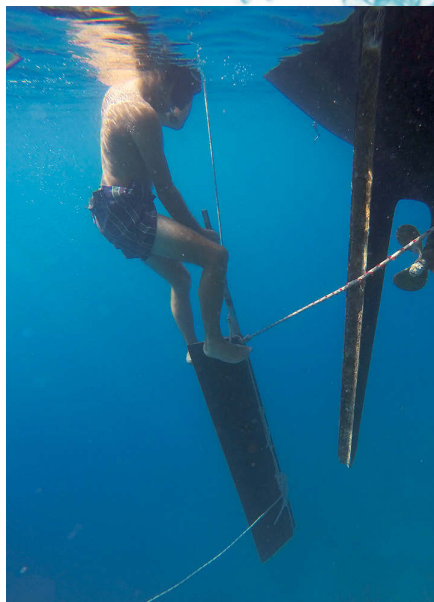
Lowering the rudder

Using a hammer and a block of wood, we removed the through-bolt, leaving the rudder supported only by the lifting line and the safety lines.



By easing the lifting line and letting out the safety lines, we lowered the rudder until the top of the stock exited the hull. Managing four lines (lifting line ends and safety lines) in the cockpit required a couple of people, and it helped to have one person in the water watching the rudder and pushing on it when needed.

When the top of the stock exited the hull, we released and removed the lifting line, leaving the rudder supported only by the safety lines.



While the hands on deck lowered the rudder with the safety lines, the swimmer guided it out of the port, far left. Once the rudder was free, the swimmer helped maneuver it to the side for lifting, at left.

Maneuvering the rudder

We slowly released one of the safety lines while bringing in the other one. This moved the rudder from directly under the boat over to one side. A swimmer made sure that the rudder didn't bump into the hull on its way.

We released the safety line on the side opposite the rudder and fed it under the boat to come up on the same side as the safety line under tension.

Bringing the rudder on board

To lift the 100-pound rudder, we attached the loose safety line to a halyard — simply lifting it from the water by hand was not an option.

One person winched up the halyard to raise the rudder, while another fended the rudder off the hull.

When the rudder was in place on deck, we eased the halyard to lay it down flat. In our excitement, we didn't think to put cardboard, a tarp, or an old piece of sailcloth on the deck to protect it, so when we were done, we had to scrub the deck to remove black bottom paint left by the rudder.

We were surprised at how quickly and easily we were able to remove the rudder. All in all, it took three of us less than an hour and a half to get the rudder on deck. The upshot was that we saved a haulout fee and the cost of renting

A Shared Experience —Michael Robertson

When I had to perform an in-the-water rudder removal it was because my prop shaft broke at the coupling. Removing the rudder was step one in my in-the-water shaft-removal project.

The rudder on my 1980 Newport 27 was a balanced spade, so there was no skeg. In the cockpit, a collar sat on top of a bearing, just below where the tiller fitted on the stock. This was the clamp that kept the rudder attached to the boat. Before removing the clamp, I strapped several bulky life vests to the rudder and tied a safety line to it, all to keep it from sinking out of sight the moment I loosened the clamp. This turned out to be unnecessary.

After I removed the tiller and then the clamp, nothing happened. I found that, by pushing very hard on the top of the stock poking out of the cockpit sole, I could push the rudder downward an inch or so, but as soon as I released the pressure, the stock would quickly pop back up. One by one, I removed the life vests until there were none. Pushing on the top of the rudder stock yielded the same result.




Next, I cinched my dive-weight belt around the rudder. That made it a bit easier to push the stock down and it didn't spring up as quickly. I added weight until the rudder was only slightly buoyant. Finally, I pulled it down and out of the boat from under water. I pushed it aside, and after I removed the weight belt, it shot to the surface. Using a line, it wasn't difficult to wrangle it into the cockpit myself. As Robin indicated, reinstalling it was as easy as reversing those steps.

Getting *MonArk's* rudder on deck required some heavy lifting, at right. Robin (center) was fortunate to have the help of experienced rudder-removal experts, brothers David (left) and Alex Giovannini, far right.



space in the yard, and we didn't waste time preparing the boat to come out of the water.

The cause of the leak proved to be a poorly fiberglassed rudder port that had voids in it and had caused a sealant failure between the port and the bearing. I ground down the weak port

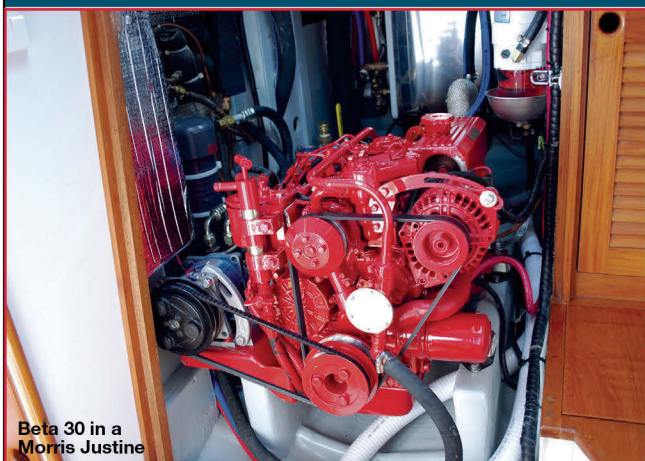
and built a stronger one with epoxy. A week later, we put the rudder back in place by simply reversing the steps for removing it. 

Robin Urquhart and his wife, Fiona, recently crossed the Pacific in their good old Dufour 35, MonArk. After that

voyage, and their earlier passage from British Columbia to Mexico, they can attest to the verity of the old adage that cruising is really about fixing boats in exotic places. Robin is an editor at Waterbornemag.com, a website aimed at inspiring and supporting a new generation of water people.

BETA MARINE

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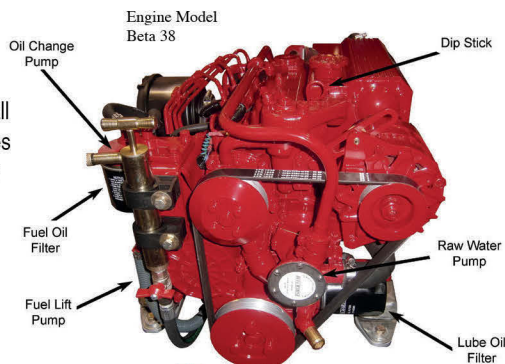
Beta 30 in a Morris Justine

Engine Model	Vessel
Beta 14	Albin Vega
	Hunter 27 Cherubini
Beta 16	Catalina 30
	Tartan 30
	Cape Dory 28
Beta 20	Catalina 30
	Contessa 32
	Island Packet 27
	Pearson Vanguard
Beta 25	Alberg 35
	Morgan OI 33
	Alberg 37
	Pearson 35

Engine Model	Vessel
Beta 30	Catalina 36
Beta 38	Sabre 38Mk1
	Valiant 37
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An Affordable New Electrical Panel

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Alberg 35 purists will notice that *Tomfoolery's* original electrical panel had been modified over the years, at left. The lower section formerly housed the ignition switch for the Atomic 4 motor and a cigarette lighter as a DC outlet. The new panel, installed and in service aboard *Tomfoolery*, above, illustrates how electrical demands have grown in 50 years.

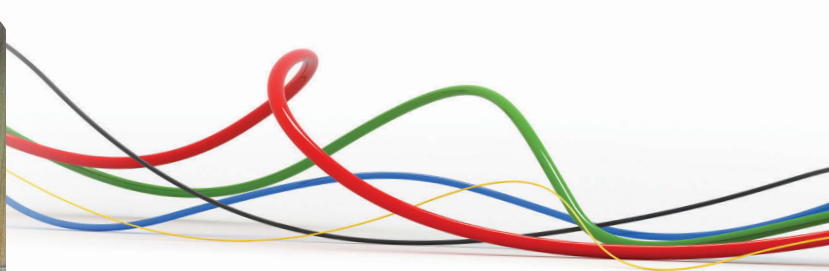
While the electrical system aboard our Alberg 35, *Tomfoolery*, might have been state-of-the-art when she was built in 1965, it was never intended to meet the needs of a present-day cruising sailboat. The original 12-switch DC distribution panel was no longer adequate and the original AC system consisted of two-wires (no ground!) that went straight from the shorepower connector via a 30-amp fuse to a single outlet in the galley and the original water heater. I had made minor updates over two decades of owning her, but it was becoming clear that a major upgrade was in order, even if only for the sake of tidying up some of the “temporary” additions made over the years.

When the need for a new panel became obvious, I started by figuring out first what I wanted, and then what I needed. This was harder than it sounds.

Plenty of good references describe how to develop an electrical “budget” for a boat. This pretty much involves writing down what devices are used and for how long during a typical day aboard and totaling up the number of amp-hours consumed. Next, and this can get a little tricky, is deciding how these various loads should be grouped. Should they be controlled from a large centralized electrical panel or from multiple smaller panels located in various areas of the boat? And how many switches will be needed for the

most convenient use, a switch for each area, for each function, or for each device? Another important consideration is the electrical functions that are not used on a daily basis but frequently enough to be designed into the distribution system. Finally, should the panel and system suit present needs only or should they have capacity designed in for future expansion?

After creating a number of lists of features I thought would be needed or desired in a new electrical panel, I pulled out catalogs from the major chandleries and started looking at commercial electrical panels. Two things were apparent. What I wanted was simply not available as a premanufactured unit, and getting anything close



Tom planned to locate the new electrical distribution panels under the companionway bridge deck and above the engine compartment, conveniently close to the main DC bus bars, which are behind the bulkhead to which the coolant overflow tank is attached.

would cost more than 10 percent of the value of my boat. Obviously, this wasn't going to work, so I started looking at options for fabricating my own distribution panel.

A search among various vendors and online sources assured me that I would be able to source all the parts needed, so I moved on to the next phase, which was to find a location for the electrical panel. Once I'd decided on that, I could nail down the physical dimensions and begin a detailed design.

Location, location, location

The original electrical panel measured approximately 9 x 12 inches and was located on the bulkhead space between the companionway and the starboard side of the deckhouse. This was nowhere near large enough to accommodate the number of switches I wanted, nor would the cable path accommodate all the wires that would have to connect to the panel.

Eventually, I settled on using the space below the companionway under the bridge deck. I had increased the depth to the countertop by 4 inches a couple of years earlier when I replaced the Atomic 4 engine with a Westerbeke diesel. Using this additional depth sounded to me like a near-perfect solution, plus the open engine space would allow for clear and relatively accessible cable runs.

Preliminary design

The location defined the new panel's dimensions, and to begin designing it I used a free software package called SketchUp. This allowed me to experiment with layouts by "sketching" the

various components and subassemblies and placing them in different arrangements to test for potential interference or issues that might impact the panel's functionality or how I might go about installing it.

I decided to divide the panel into three subpanels: an AC distribution panel, a DC main panel for the battery switches and battery monitors, and a DC distribution panel that also serves some other functions (see "Panel Design and Division," page 38).

Making the DC distribution panel modular allowed me to standardize a number of components, which I hope will simplify use and upkeep of the electrical system in the future by reducing the diversity of spare parts needed. All the breakers (except for two dedicated to specific purposes) are 20 amps, and all the DC wiring is AWG 10, as are the associated connectors. While this is oversized for most loads, it will reduce voltage drops to sensitive equipment.

I used only two types of connectors: spade lugs for "permanent" connections and Anderson Powerpole connectors where I wanted quick-disconnect capability. All the connectors are the crimp type for durability in a marine environment.

Construction

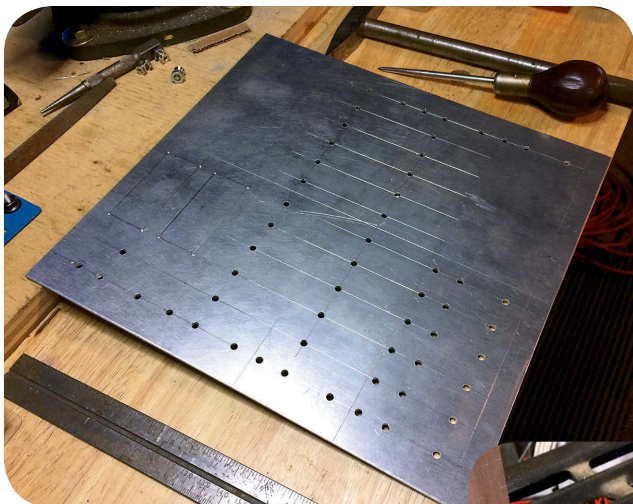
When I'd worked out most of the design details,

I commenced construction of the panel, starting with the frame. I had some cherry left over from a prior project, and it was quick work with a table saw and planer to cut the frame and assemble it.

Next would be the panels. Being a woodworker, I like the look of natural wood, but making the panels out of thin plywood gave me concern. To support the banks of switches, meters, and circuit breakers, I would need ¼-inch plywood at the least. Most of those components are not designed to be mounted to anything that thick, so I decided to make the panels out of aluminum, which as well as being soft enough to be worked with wood-working tools, offers some safety by providing electrical shielding. When the metal panels are grounded, any loose wire in the panel that touches the faceplate will instantly ground out instead of finding a path through someone touching one of the switches or the



Tom made the frame for his new panel out of cherry wood.



After cutting the aluminum faceplate stock to size, Tom scribed location lines with an awl, and used a punch to mark where he would drill holes for the components, far left (this one is for the DC distribution panel). Tom attached the faceplates to the bottom of the frame with piano hinge so he could easily access their backs to work on them, at left.



faceplate. While this isn't a terrible concern with the 12-volt house power, it is with the 120-volt shorepower.

Fabricating the panels was straightforward but time-consuming. I started with a 2- x 4-foot sheet of $\frac{3}{32}$ -inch-thick aluminum from a local metal-fabrication shop and used a table saw to cut the faceplates for each section of the larger distribution panel.

Before beginning the detailed cut work, I laid out all the components on each panel for a quick visual "sanity check" to finalize the layout.

To measure and mark (scribe) the location of each hole that had to be made, I used a machinist's square and an awl. Because aluminum is relatively soft, the awl can be used almost like a pencil to scratch lines into the surface. Where lines intersected, the surface scribes provided a good reference for a center punch, which in turn would help prevent a drill bit from wandering as I drilled the holes. This process ensured a high degree of alignment so that everything would "look straight" when the panel was completed.

Using a drill press allowed me to drill holes precisely where I'd marked them, and ensured that the drilled holes would be perpendicular to the surface. A drill bit was the obvious tool for making smaller holes, but I used a hole saw for the larger round holes, such as those for the battery-disconnect switches.

Rectangular holes were a bit more challenging. For these I used a Dremel tool with an abrasive cutoff wheel to cut the straight sides and a hacksaw blade to make clean corners. While an oscillating

multitool might have made quicker work of the task, the Dremel tool provided greater precision and control.

I made the three faceplates one at a time and not in parallel, starting with the simplest panel (the DC mains) and progressing to the most complex (the DC distribution section). Using the experience gained with the AC and DC main panels allowed me to refine my fabrication techniques. This improved the accuracy with which I could drill the holes, but did not, unfortunately, improve the attention span of the fabricator. I still managed to drill a hole in the wrong place and had to start over and remake the DC distribution panel. The lesson here was that you can redrill a small hole to make it bigger, but you can't redrill a big hole to make it smaller.

When I was satisfied with the faceplates, I attached their bottom edges to the frame with piano hinge, then mounted the components for another test fit and some additional

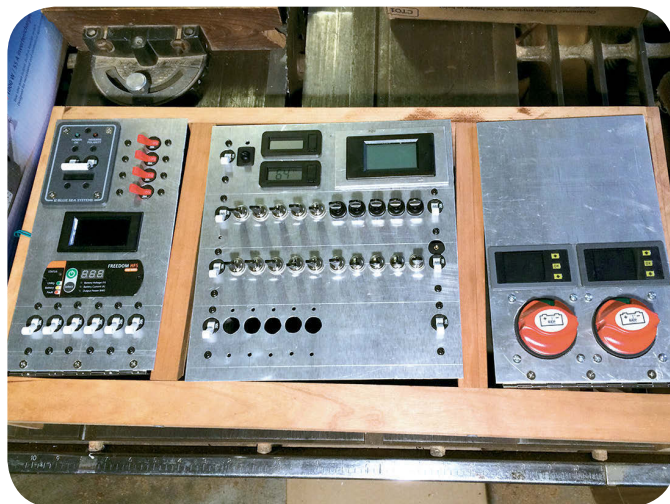
visualization of what the final product would look like.

Cosmetic considerations

At this point I had to decide whether I would simply paint the aluminum panels or if I would try for a less industrial look. Given my preference for wood, I decided to do the latter by covering the panels with mahogany veneer. The process was relatively simple. I cut sheets of veneer to the approximate size of each panel and then prepped both the aluminum plates and veneer pieces with two coats of contact cement. Once the cement was dry to the touch, I pressed the plates and veneer together and rolled them with a veneer press to ensure a good flat bond.

I used a razor to cut out the openings for displays, switches, and breakers, leaving the holes intended for future expansion covered, as it would be a simple matter to open them up with a razor when the time came. After installing the panels on the frame for a final test fit, I added cleats to the inside of the frame to function like a door jamb so the panels would sit flush with the surface of the frame. The cleats would also receive screws in the top corners to hold the panels closed.

The woodworking was now complete, and I applied several coats of varnish to all the wood surfaces. Because the panel would be indoors (and I was on a budget), I used a varnish from the home center, rather than a marine-grade brand. I allowed each coat to dry, and sanded the surfaces with 200-grit paper between coats.



Tom assembled the components to the backs of the faceplates to check their fit and how he would wire them, at left. This allowed him to also make a visual check of the fronts of the faceplates, at right, prior to applying the cosmetic finish layer of veneer. The extra holes along the bottom of the DC distribution panel permit Tom to add circuit breakers in the future.

Final assembly

The moment of truth was near. I bolted the components to the panels and then attached the panels to the frame. Being a little anxious, I added some temporary wires to the panel so that I could plug it into an AC outlet in my shop, connect the charger/inverter, and tie in a 12-volt battery. Everything lit up beautifully, and I was able to test some of the panel's basic features. I verified that the meters were functioning, tested the inverter, and configured the displays. I also configured the charger for the AGM battery banks on the boat.

Finally, it came time to install the panel on my boat and start transferring existing loads from the old panel to the new. This was perhaps the most tedious part of the project. One of the problems

was that the boat's electrical system, having evolved over time, utilized several distribution points. The new panel consolidates distribution in one place, so I had to rewire a good portion of the system.

As I hooked up the switches, I printed labels for them with a label maker. While the labels might not match the classic look of the panel, I expect that I can change them for something more stylish once I'm sure everything works the way I would like it to. The labels are simply stuck on with adhesive, so they will be easy to remove.

AC with an inverter/charger

As part of this project, I replaced *Tomfoolery's* battery charger with a combined charger and inverter. We

had previously used some smaller inverters to power dedicated loads, but even though one of them was rated for 450 watts, it could not handle the start-up surge of an electric drill motor. Simply upsizing the inverter would have been the easy answer, but the tradeoff is that larger inverters are less efficient at low loads (when there's just a laptop plugged in, e.g.) because they draw a larger idle current from the battery when not loaded. In the end, I decided to install a 1-kilowatt inverter as a compromise.

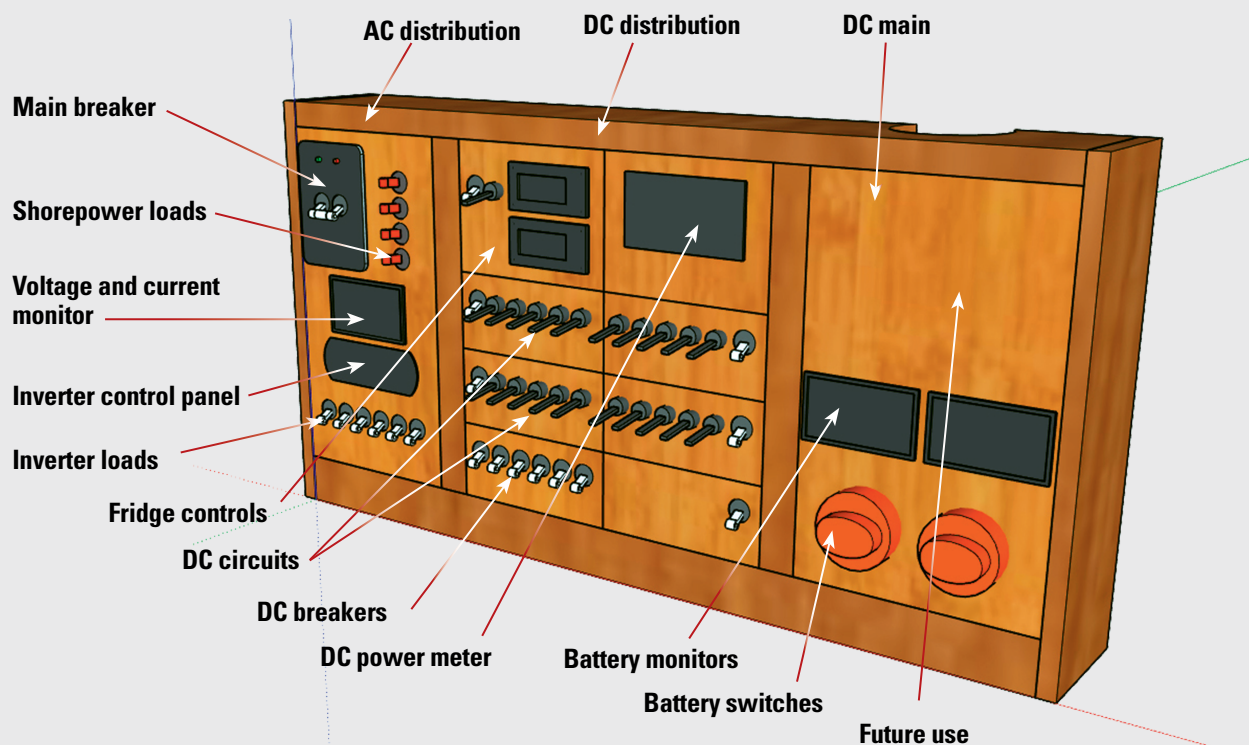
In North America, a 30-amp shore-power service is roughly equivalent to 3,500 watts (3.5 kilowatts), which means that not all the shorepower service can be passed through the 1-kilowatt inverter. Therefore, the



The veneer facings, glued to the aluminum plates and cut and drilled for all the components that will be installed initially, await varnishing, at left. The frame, complete with its "door jamb" cleats, received multiple coats of varnish, at right.

Panel Design and Division

-TA

Preliminary sketch for the new electrical panel in *Tomfoolery*

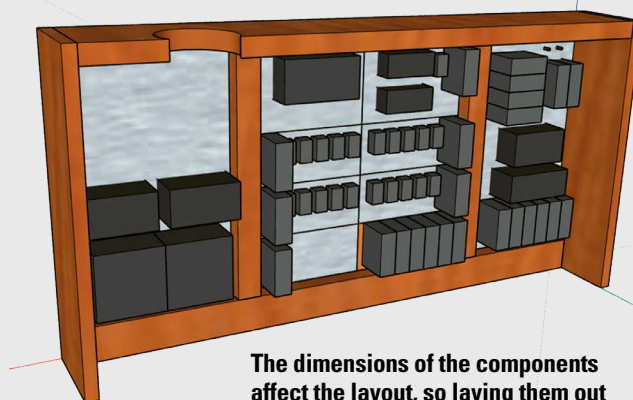
At the top of the AC distribution panel is the main circuit breaker for shorepower (along with a built-in polarity indicator) and red breakers for “raw” shorepower. Below them is a meter to monitor AC voltage and current and a control panel for the boat’s new battery charger/inverter. The white breakers along the bottom are for AC loads connected to the output of the inverter.

Circuit breakers are expensive, so when designing the DC distribution panel, to keep costs under control, I decided to assign DC breakers to groups of circuits rather than to individual loads. For example, cabin lighting could be organized into two groups (port and starboard), but power to a particular cabin (saloon, head, or V-berth) could be controlled by a switch. Individual fixtures typically have their own switches.

High-draw loads, like the SSB transceiver or electric windlass, do warrant dedicated breakers, and these are located along the bottom of the panel. Prior to installing the panel in the boat, I fitted some cigarette-lighter sockets for the ubiquitous cell-phone chargers. They are to the right of the “high-draw” breaker bank.

I located “miscellaneous” functions at the top of the center panel. This included a section devoted to our refrigeration system that included a breaker for the compressor, a switch for a small circulating fan, and a couple of temperature displays.

Also located here is a DC power meter to monitor overall DC electrical parameters such as voltage, current, and energy draw (amp-hours). This meter,



The dimensions of the components affect the layout, so laying them out in SketchUp was a great help.

which I installed during an earlier expansion to the DC system on the boat, is somewhat redundant to the battery monitors, but it sums the data on the two battery monitors and serves as a fallback should one of the other meters fail.

The DC main panel houses the battery switches for the two house banks. Above each switch is a battery monitor that tracks voltage, current, and amp-hours for that battery bank. The space above is available for anything that might prove useful, such as LEDs to indicate which navigation lights are powered on.

In the shop, Tom connected power to the assembled electrical panel so he could test its basic functions before installing it in the boat.



shorepower system needs to be split into two systems: one that is backed up by the inverter, and one that goes directly to the shorepower source. Besides, it makes no sense to try to run any sort of electric heater (be it to heat water, heat the cabin, or cook food)

Resources

Sources for most of the components listed below can be found by typing the product name or manufacturer and model number into a search engine.

AC power meter

Drok, model D69-2049 digital meter

Anderson Powerpole connectors and crimper

Quicksilver Radio
(qsradio.com)

Battery switches

BEP Marine model 701

Circuit breakers

Blue Sea A-Series

Inverter/charger

Xantrex Freedom HFS 1055
Defender (defender.com)

Toggle switches, crimp connectors

Digi-Key (digikey.com)

DC battery monitor

Drok B01M5CWR2P

Mahogany veneer

cabinetparts.com

Minwax Polyurethane Spar Varnish, hinges, hardware

Lowes

SketchUpFree


sketchup.com

using the ship's batteries. These loads are best kept separate.

For safety reasons, it's essential to keep the AC system that is powered by the inverter completely separate from the AC system that bypasses the inverter and supplies other devices on the boat (see "Inverter Essentials," July 2015. —Eds.). This means that the neutral and ground wires from inverter loads must go back to the inverter only and not be tied to the neutral and ground used by the rest of the shorepower system. Circuitry in the inverter will tie the neutral and ground back to shore when shorepower is available, and will open that connection should shorepower fail and the inverter take over. This will isolate the boat from shore and ensure the AC system has a proper (and safe) ground when under battery power.

Expectations met

After a summer of use, the new panel has proven to be a worthwhile upgrade. It has enabled me to add the multiple components needed to properly monitor and maintain a 21st-century marine electrical system that includes battery monitors, a built-in battery charger, an inverter, and many of the electronic tools and toys we take with us when we go sailing. Designed to be flexible, it also allows for future growth and can, if needed, be reconfigured.

Best of all, I met my goal of creating a functional distribution panel on a budget. Not counting the cost of the inverter/charger, the panel and its components cost less than \$500 to assemble, and it provided a solution custom-fit to the needs presented by my boat. 

Tom Alley and his family, sailing their 1965 Alberg 35 sloop, Tomfoolery, are active racers and cruisers with the Finger Lakes Yacht Club in Watkins Glen, New York. Tom has been a member of the US Power Squadrons since the late 1980s, when he got serious about sailing and having fun on the water. He has been a Squadron Education Officer for longer than he cares to remember. He also manages the Alberg 35 User Group website (www.Alberg35.org). When he's not sailing, tinkering with his boat, scuba diving, or hanging out with fellow amateur radio operators, he works as an engineer to support his sailing addiction and, if there's any money left over, send his kids to college.

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Sailing: The Itch That

Staying afloat in good old boats through life's ups and downs

BY CHARLIE MEYER



***Duffy*, a Catalina 320, was the Meyers' last sailboat, top right. An earlier boat, *Windswept*, a Catalina 34, had to go when real estate nose dived, above, but, as son Casey and daughter Jeannie show, at left, they had plenty of good times aboard.**



Twenty-five years ago, I stood on a dock in Redondo Beach, California, and watched *Windswept*, our Catalina 34, sail off with her new owner. I was 50 years old, a tough, practical guy who had made the correct financial decision for his family, and I knew we would eventually have another boat. So, I was surprised, and a bit embarrassed, by the tears running down my cheeks as she sailed around the breakwater and out of my life. "Man up," I told myself, "it's only a boat." But it's never "only a boat."

I love the ocean, and boating has always been a big part of my life, ever since my beach-loving mother persuaded my city-boy father that we should spend summer vacations in rental cabins on the waters of eastern Long Island Sound. After college, I spent two years in the Army, most of it in Fairbanks, Alaska. This was as far away from the ocean as I had ever been, and I missed it badly. After returning home, I began work in New York City, married a fabulous girl, Mary, and started a family. I had no time for the ocean or boats, but the itch was always there.

Soon after our daughter, Jeannie, was born, I found a job in Los Angeles and we moved to Manhattan Beach. A neighbor invited me for a weekend sail to Catalina Island aboard a Cal 25. It was my first experience with a sailboat and from the moment the motor was shut down and all I could hear was the whisper of the wind and the pulse of the bow wave, I was hooked.

Realizing that sailing is a bit more complicated than the motorboating I'd done as a kid, my wife and I signed up for lessons in King Harbor, in Redondo Beach. Once we had the basics down, we began chartering sailboats from a company based in Marina del Rey. The head of the charter company informed me that a prospective buyer of a brand-new Catalina 30 had reneged on the deal. If I stepped in and took

Must Be Scratched

his position, I could have his deposit money! Not only that, but the income from chartering would more than cover the costs of ownership, and I would be able to sail the boat for free any time it wasn't chartered. I didn't have any money, but I qualified for a loan. Overcoming much resistance from my sensible wife, I signed on the dotted line and bought my first sailboat. What could possibly go wrong?

A chastening experience

I quickly realized we were in way over our heads. The charter income was nowhere near what we expected, and we still barely knew how to sail. On a trip to Catalina Island, the kids at home with my parents, we fouled the prop with a jibsheet just outside of Isthmus Harbor. Later that week, sailing back to the slip in Los Angeles Harbor having lost the engine, we almost turned in front of a freighter. Nonetheless, I stubbornly hung on to my boat-ownership dream, until the day I got the phone call from the charter company. Charterers had dismantled my boat, thinking they could make it under a drawbridge without having it open for them. We'd owned the boat for less than a year, and sold it without ever having given it a name.

Bloodied but unbowed, I continued to charter sailboats and read every sailing book I could get my hands on. We joined a family-oriented yacht club, bought an 8-foot Sabot, and our kids took sailing lessons at the club. Then I convinced my bride we would all learn to be better sailors if we bought something a little bigger, and thanked her by naming the new Catalina 22 after her. We sailed that little sloop all over Santa Monica Bay, and continued to charter larger boats for the occasional trip to Catalina.

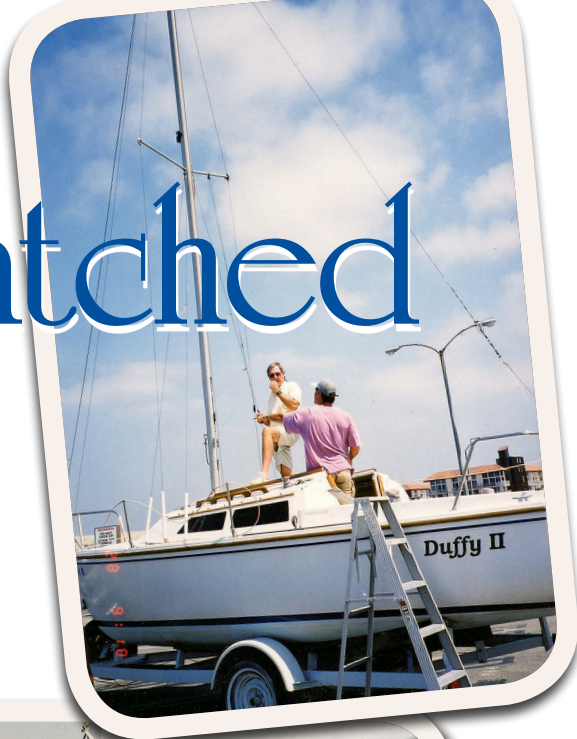
I was proven right: we all became decent sailors. We also wanted to spend more time at Catalina, and I was tired of doing so in other people's boats. I had gone into real estate brokerage and was doing well enough that I worked up the confidence to trade in the 22 for a new Catalina 34. Mary went along with me, on the condition that we not name this one after her.

We enjoyed six years of blissful sailing aboard *Windswept*, frequently with teenage friends of our children aboard. We made our favorite Catalina Island anchorages our second backyard.

Life was perfect, until the real estate market tanked overnight. College tuition, mortgage payments, food, and other necessities come before boat payments. I got lucky and sold *Windswept* quickly, but I didn't have to like it! *Windswept* had been a symbol of the best years of my life to that point.

Reprieve and a refit

Time passed, the real estate market recovered, and sailing beckoned. But I had learned my lesson: no more boat loans.



Charlie and son Casey set up the rig on one of the Catalina 22s they owned between the bigger boats, at top. These were the boats in which the family, Casey, Charlie, Jeannie, and Mary (behind the camera) really learned how to sail.



Even the thought of slip fees gave me concern. The answer was obvious. Our yacht club had waterfront docks with boat hoists and a dry-storage yard. The used-boat market was still in the dumps, and I scraped together enough cash to buy another Catalina 22. She was a sorry little boat, with a



Catalina Island's Avalon Bay was long a favorite destination for the Meyers, at left, as was Isthmus Harbor, where Mary is watching the sun set, below.

swing keel that was even rustier than the trailer she perched upon. To say she suffered from deferred maintenance was being kind, but I had the right partner for this project. My son, Casey, and I had spent one entire winter, when he was about 10, building a wooden dinghy in our garage. He had loved every minute of it, and he often said we should do it again. Now a grown man and handier with tools than I, he jumped at the chance to help me restore our new old boat, and once we were finished, to test her out. On our rough passage to Catalina, in mid-channel, winds gusting over 25 knots and waves that swept the deck, she passed the test with flying colors.

Dry yard storage was inexpensive, but didn't allow me to just hang out on the boat as I would in a slip. Launching her with the hoist was a lot more complicated than stepping aboard and throwing the dock lines. She was too small for family trips to the island. But we were sailing again, in our own boat. Then, in 2001, I got very lucky. I came into some money when a modest investment I'd long ago written off turned a handsome profit. No need to get all sensible with it now, was there? I traded-in the 22 for a brand-spanking-new Catalina 320. And I named her after Mary.

Sunset years


Our nest was empty, and this 32-footer is a perfect boat for a couple: just the right size for the two of us to spend a week without feeling cramped. Mary and I put thousands of miles under her keel over the next 13 years. We sailed to every harbor from San Diego to Santa Barbara, spending our time reading, swimming, taking long walks, paddling kayaks, playing gin rummy, eating, and sleeping. Heaven on earth.

Then health issues that had been plaguing me for years became more serious, and surgeries and side effects from medications limited me to the occasional afternoon sail in Santa Monica Bay. We postponed longer voyages until I fully recovered. But after almost three years, I finally got it through my head that a full recovery was not going to happen and to accept my new normal. I was grateful for the fact that I was "doing fine," just not fine enough to risk stranding my first

mate 25 miles from home with me in need of a hospital and unable to assist her.

For years, I wondered about all the boats in the marina that hardly, if ever, left their slips.

I swore I would never let that happen to my boat. She is meant for more than an occasional jog up and down the bay. So, once more, I told myself to man up. She sailed away with her new owners aboard, a lovely couple who were already planning their first cruise. Soon she'll be back at anchor at Santa Cruz Island, and will eventually find herself again at Catalina.

And I didn't cry. Maybe there's still time for another 22-footer ... 

Charlie Meyer moved his family from New York to Southern California 48 years ago and has spent as much of that time as possible on or in the ocean. He has sailed vessels from 8 feet in length (Sabot) to 110 feet (as a crewmember on tall ships with the Los Angeles Maritime Institute). Currently his only boat is a one-seat kayak, but he's keeping his options open.



Making an Irwin 37 CC Livable

BY CLAY WATSON



In the fall of 2013, I was living in New Bern, North Carolina, and I was in the market for a bigger sailboat. It had to be a good old boat to keep the cost down to something I could handle. I knew it would be a fixer-upper and I wasn't afraid to roll up my sleeves. Next to that, the interior layout was paramount, because I was and continue to be a liveaboard sailor.

After searching through hundreds of layout plans, mostly on Sailboatdata.com, I zeroed in on the Irwin 37 Center Cockpit. More than 600 were built between 1971 and 1982, and there were plenty on the market. Irwin made five different refinement modifications over the production span and offered the boat with a wide variety of rig and keel options, including sloop, cutter, ketch, shoal-draft, deep-draft, and centerboard.

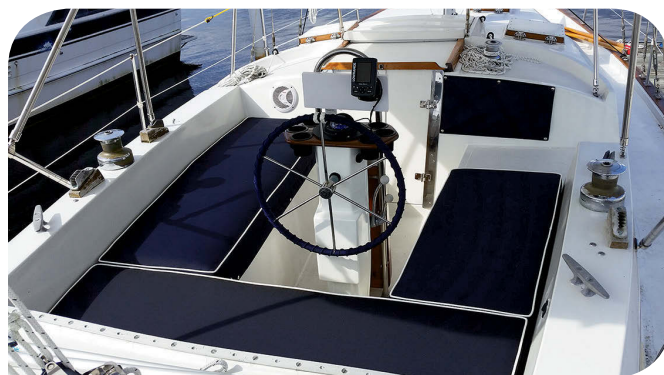
Within three months, I found my boat at a nearby marina. There was no "For Sale" sign, but she looked abandoned. And of all the different configurations of the Irwin 37 CC I might have stumbled upon, this was exactly the one I wanted: sloop, centerboard version, and a later model (Mk IV) with most of the design refinements in place. I wanted the sloop for its simplicity and the centerboard for its shoal draft and better pointing ability with the board down under sail.

A boatload of work

I contacted the owner and made an offer. He was glad to hear from me. I bought the boat for a ridiculously low price, but the deal was "as is, where is." For a knowledgeable buyer, and below a certain price point, there is no need for a survey. This was such a transaction. The decks were not mushy



From a shambles
to a fully functioning
sailing home



On the day Clay bought the Irwin, she was looking a little rough, top left. Prior to her departure for Florida in October 2016, she was looking a lot sharper, above top. By December 2016, she was mostly refurbished and motorsailing in Florida on the way to Key Largo, above center. Among the creature comforts Clay added were new cushions to soften and brighten up the cockpit, above.



The new Perkins engine was a short block, and Clay completed it with parts scavenged from the old engine.

anywhere, the rigging was acceptable, and the hull was fine; the bones were all there. It was indeed a salvage project, but I had all I needed to restore the old boat — the skills, the tools, the time, and a little bit of money.

The biggest shortcomings of the boat were:

- The previous owner had not touched it in at least three years, maybe five!
- The engine would not start. A respected mechanic had pronounced it “toast.”
- A broken portlight and leaks at the chainplates had caused some minor interior damage.
- The mast compression post was rotten and had to be replaced.
- The entire interior was filthy with mold.
- All the upholstery would have to be replaced.
- All the plumbing fixtures would have to be replaced.
- All the lighting fixtures (inside and out) would have to be replaced.
- All the running rigging and canvas would have to be replaced.
- All the electronics would have to be updated/replaced.
- The galley stove, oven, and refrigerator would have to be replaced.
- The topsides needed to be painted.
- The deck hatches and companionway doors needed to be restored.
- Et cetera.

It was the perfect boat for me, and suddenly I had a world of work to do. I immediately took the boat to a nearby DIY boatyard, where I scraped a small truckload of barnacles and river mussels from the hull.

Over the next four months, I received enormous help from my sailing buddies in the area, getting the boat restored enough to put her back in the water and operating under her own power. Sometimes I’d call them, sometimes they’d call me, and sometimes they’d just show up and pick up a wrench or a sander. I could never overstate the value of their assistance, or the appreciation I had for their consistently cheerful help, companionship, and advice. It was cold and lonely at that boatyard in the early winter of 2013, but genuine friends made it a sunny place for me. So when I say “we,” I mean myself and those helpful friends.

Engine first

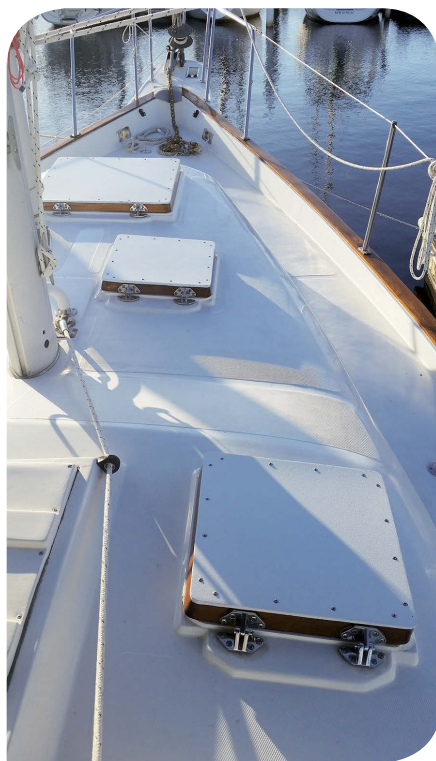
We spent more than a month fiddling with the old Perkins 4.108 diesel, trying to get it to crank. I knew almost nothing about diesels, but I now have some advice for anyone who is trying to breathe new life into a questionable old diesel: the *first* thing to do is to use a compression gauge to see if the engine can develop the specified compression in all cylinders. If I had done that first instead of last, I would have saved a month’s worth of work and wasted hopes.

Contrary to Lemony Snicket’s protagonists, I obtained through a series of incredibly fortunate events an affordable, working, exact replacement engine within a few days of determining that the old one was not salvageable.

We spent another month removing the old engine and preparing and installing the new one. This involved a long list of mechanical details, including mounting the transmission and fitting various oil seals, the oil coolers, heat exchanger, exhaust manifold, starter, alternator, header tank, and other sundry giblets. Because the new engine arrived as a “short block,” meaning the assembled engine block with the



Removing years of marine growth left the bottom looking rough, at left, so the bottom, and the topsides, received fresh coats of paint.



Clay removed the rotten teak from the bowsprit and replaced it with a custom-made fiberglass panel, far left. He kept the original hatches, but gave them white fiberglass hatch tops, which help keep the cabin cool in hot, sunny weather, at left.

I spent hours my first night on board scrubbing and disinfecting the aft head with a heavy application of bleach. I got it clean all right, but inhaling the chlorine fumes triggered a horrible case of bronchitis from which I suffered for *three months*; it took an earnest swipe at my life. Take note: if a disinfection project requires the use of chlorine bleach, ensure that there is profuse ventilation and wear a proper respirator. (See “Don’t Reach for the Bleach,” page 47.)

cylinder head only, we cannibalized those accessories from the old engine and had to clean them before transferring them to the new one. Then, one cold and rainy December morning, I was in a covered work area alone with the iron behemoth, which was fully assembled and mounted to a pallet. I supplied it with fuel, cooling water, and lastly, a good jolt of juice from a fresh battery. With a little shot of ether down her throat, the engine roared to life. (*Ether is not recommended as a starting aid for diesel engines; see “Ether and Diesel Engines,” below. –Eds.*)

A week later, the new engine was lifted by crane and installed in the boat. A week after that, we were back in the water, and the next day I moved on board.

Parallel projects

Along with the engine work, I’d been getting all sorts of other projects done, including repainting the bottom, cleaning and polishing the hull, and repairing the broken centerboard control pennant. I also gutted the galley of its antiquated pressurized-alcohol stove and broken reefer and replaced all the faucets on board.

Because I had to prioritize boatyard time for those jobs that could only be done there, I deferred most other projects until the boat was back in the water.

Ether and Diesel Engines

I have seen people ruin perfectly good diesel engines with ether. The only safe way to use ether is to spray it on a rag and then hold the rag against the intake and let the engine suck it in. Spraying ether into the intake to help the engine catch can lead to several problems, and I have seen them all in different engines over the years. They are as follows:

1. Destruction of the crown of the piston, putting a hole in it.

Ongoing labors

I spent the next two and a half years completing one project after another on board, all while living aboard *Swedish Fish*, as I had named my boat.

First, I completely rebuilt the bowsprit. I removed its rotten teak decking and replaced it with a new fiberglass panel, which I epoxied into place and painted with non-skid. Tyndall Marine in Bridgeton, North Carolina, fabricated the panel, and I called upon the company again later to fabricate new tops for the five deck hatches and the companionway sliding hatch.

Irwin Yachts built all its own hatches using teak frames and plexiglass tops. At first I didn’t like them, but after a while they grew on me and I came to love their old-school salty look, heavy construction, and easy DIY maintenance even with the teak. If a modern aluminum-framed hatch develops a problem, and they do sometimes, often the only thing to do is replace the entire hatch.

I chose to replace the original plexiglass hatch tops with fiberglass for a couple of reasons. Since the hatches were covered in summer to keep heat out of the boat and were covered in winter to keep heat in the boat, I saw no need for a translucent hatch. The plexiglass was also weak and

2. Destruction of the side of the top of the piston, which then leaves the top ring exposed.
3. Accelerated wear of the bore along with the rings and piston, as the ether removes all the oil and lubrication from the cylinder wall.
4. Some older engines can get addicted to ether and won’t start without it. I guess that a junkie engine is better in some minds than actually fixing the problem correctly.

Stanley Feigenbaum, Owner, Beta Marine US

–Stanley Feigenbaum

Other Projects

The port saloon settee was a shambles on purchase day (1) but the refit gave it a new life (2).

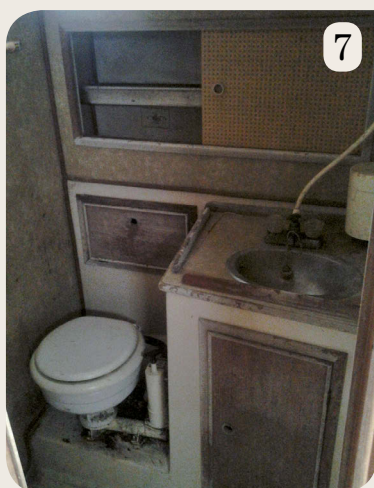
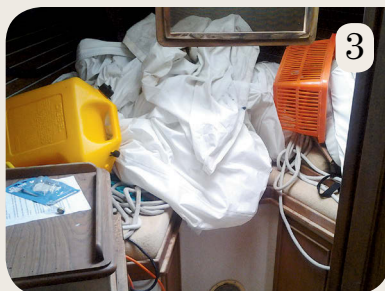
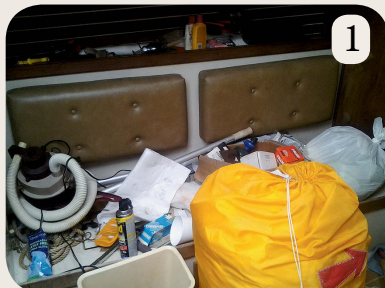
The forward cabin also went through a transformation from its condition on purchase day (3) to its renovated state (4).

The companionway dropboards and trim had decayed (5). A friend made new doors to replace them and Clay made new trim from stainless steel stock (6).

The head was grungy (7) and needed a thorough cleaning, fresh varnish, and a new toilet (8).

The bimini was shredded (9), so Clay made a new one from fiberglass shower panels reinforced with 1- x 2-inch PVC ribs (10).

He also assembled a new sail pack from a Sailrite kit (11).



extremely slippery. Replacing it with fiberglass made the hatches “bomb proof” strong so anyone could stand on them, and I had non-skid molded in to them to reduce the risk of slipping on one.

Along the way, I took *Swedish Fish* to the boatyard for the mast to be pulled. I left the mast there for work, and took the boat back to her slip in New Bern. I completely rewired the mast, removed the antique radar antenna, installed all new LED lighting, and ran new halyards. Back at the boat, I pulled out the old compression post and a carpenter friend fashioned a new one for me out of white oak. We also painted the topsides while the mast was off.

After the mast was back in the boat, my subsequent projects included everything on the list at the beginning of this article. I also varnished all the teak, installed a new TV and stereo equipment, and completed a hundred smaller projects.


Under way

By the end of October 2016, we were ready to go on our first extended cruise, and it was a doozy. *Swedish Fish* and all of her systems performed perfectly on the 950-mile voyage from New Bern to Key Largo, Florida. While in Key Largo, I installed four 100-watt solar panels atop the bimini, a new battery charger and battery switch, and a new DC control panel.

In April 2017, we moved the boat to Marathon Key, where in September, tied down like captive Gulliver in a

mangrove-lined canal, she — alone — bravely survived a brutal beating by Hurricane Irma.

In November 2017, we sailed *Swedish Fish* from Marathon to Mobile, Alabama, an 800-mile voyage, and again she performed admirably. We planned to be in Mobile for more than a year, so the projects resumed. On the list: having the diesel's injection pump rebuilt; replacing the semi-rigid bimini I'd built with fiberglass sheeting, and which I had to destroy in my frantic preparations for Irma; a fresh coat of paint on the topsides; a windlass; and maybe an autopilot if the budget allowed.

When will the refit be complete? It depends upon what one means by “complete.” I believe most owners know that the work on a boat is never done. 

Clay Watson began sailing in his teens at summer camp in Florida and has since sailed and raced everything from dinghies to 40-foot and larger yachts around the country. He is a US Coast Guard veteran, and after 17 years with the New York Times Company Broadcast Group, began a new career in the outdoor industry, followed by a five-year stint as an EMT. Then it was time to go sailing again, so he bought a Catalina 27 and began cruising the East Coast in 2012. After that season, he bought the Irwin 37, became a licensed USCG captain and ASA sailing instructor, and cruised the entire Florida coast. He continues to live aboard Swedish Fish, currently in Mobile, Alabama.

—Drew Frye

Don't Reach for the Bleach

Clay writes about the close call he had using bleach to “clean” the head. Retired chemist and *Good Old Boat* contributing editor Drew Frye shares his knowledge:

“Bleach is misused all too often. Bleach is a sanitizing and bleaching agent, not a cleaner. There is *never* a good reason to use bleach in the toilet. It is damaging to the toilet, the hoses, and the biome in the holding tank, and it will react with ammonia in urine and calcium-urate scale deposits to generate chloramine gas, which is irritating and deadly. Only acid cleaners should be used in the head itself, following the manufacturers' instructions.

“After flushing with fresh water, soils can be removed with a hard-surface cleaner and scale deposits with a descaler, such as Trac Ecological Barnacle Buster or diluted CLR Calcium, Rust, & Lime Remover. This is more about soaking time and proper concentration than scrubbing.

“After rinsing, the surfaces can be sanitized by a light wipe down with dilute bleach (one tablespoon/quart). Do this last and then leave the compartment for a few minutes to minimize exposure to the chlorine. Rinse the surfaces again with fresh water before the bleach has fully dried, as dried bleach is extremely alkaline and can damage many surfaces.”



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A Water Filter for the Frugal

Don't let dock-hose biomass contaminate the boat's water tanks

BY DREW FRYE

Every time I take on fresh water, even in my home marina, I get an uneasy feeling. I've seen what lives in water hoses, and I don't want that stuff in my water tanks. Filtration is the answer, but dockside hose filters miss the point entirely, because they can't catch the junk growing inside the hose. End-of-hose filters may be in the right place, but they remove chlorine (we want that in the tank), reduce flow rates, and don't last long. Both types of filter stay wet, encouraging bacteria to breed during the weeks they are not used, and while they provide reasonable flow when piped into pressurized systems, they're useless for jerrycan transfers or rainwater collection.

My answer was inspired by the Baja Fuel Filter revered by cruising sailors. Based on a standard industrial bag filter, my DIY water filter offers 1-micron filtration, high flow rates, visible inspection of the water, and no chlorine removal. The bag filters can be dried and even sanitized in the sun between uses, and they can be washed and reused a dozen times before losing capacity. Because my water filter is designed for gravity flow, it works with a hose, jerrycan, water from a grimy public tap, and even with rainwater-collection systems.

With a few scraps of 4-inch PVC pipe, simple tools, and common skills, a 4- x 14-inch 1-micron bag filter becomes a multipurpose water filter, perfect for the sailor faced with a water supply of uncertain quality.



Filter factors

Bag filters are available in many materials, and in sizes from 4 x 8 inches through 8 x 32 inches. I've used all of them over the years in industry. For water filtration, polyester felt removes the particles of interest most economically and efficiently — something to do with surface charge and texture. While coarser bags flow a little faster, I like the 1-micron filtration because it removes a good portion of silt and colloidal dust, ensuring clean water and



Drew's filter works equally well for rainwater, hose water, or jerrycan water, above. Using different parts, he made a couple of filter variations to accommodate the same size bag filter, at left. The filter showed it was doing its job after filtering only 100 gallons. The gunk is primarily harmless algae from the hose, but it's still not desirable in the tank, below.



a clean tank. This size also seems to be the best compromise for the sailor: compact, able to keep up with most dockside hoses, and easily managing rainwater collection and jerrycans.

Four-inch PVC pipe is small enough to support the top ring of the filter and yet large enough to give the bag




The bag filter fits neatly into the 4-inch PVC pipe housing, at top. The bushing is inset into the bottom of the housing so the filter will sit flat over the deck plate, middle. Drew used the filter when collecting rainwater from the hardtop on his catamaran, *Shoal Survivor*, at bottom.



interfered with the fit, I was able to slide the reducer inside the 4-inch pipe. Because the reducer did not fit perfectly inside the pipe, I glued it in place with polyurethane caulk (100 percent silicone caulk would work just as well). I placed a heavy bead about 2 inches from the end, slid the reducer in place, and then added a sealing bead inside and out. The end of the bushing is recessed about 1/2 inch inside the reducer, allowing it to straddle the deck plate without wobbling.

When filling a tank via the deck plate, I thread a 3/4-inch nipple into the bushing. A 3/4-inch pipe-to-garden-hose adapter lets me direct the water to multiple jerrycans.

I still follow safe water-management practices. I chlorinate the water to prevent growth in the tank and to eliminate off tastes caused by sulfate in the water, screen the vent (bugs can crawl in), and have an ANF 53-rated filter before the galley tap to capture chlorine-resistant cysts (cryptosporidium and giardia). 

Drew Frye's bio appears on page 16.



an easy fit and permit flow along the sides. Foam-cored DWV (drain, waste, and vent) pipe saves weight compared to Schedule 40 or solid DWV. I cut the pipe long enough for the bag to hang free plus about 1 inch for stretch — about 15 inches inside.

To allow the filter to sit flat over a raised deck-fill plate, I did a little non-standard fitting. I glued a 2- x 3/4-inch NPT bushing into a 2- x 3-inch concentric reducer with PVC cement. By grinding off the small tabs that

Parts and Prices -DF

Not including the caulk, which most boat owners will have in the boat kit, the total cost to make a filter should be under \$25, including the stub for filling tanks and the barb for attaching a hose.

- 1-micron polyester bag filter, seamless, trade size 4 \$7
- 3/4-inch NPT x 1/2-inch barb, nylon \$3
- 3/4- x 4-inch PVC nipple \$2
- 4-inch x 10-foot PVC DWV pipe \$8
- 2- x 3-inch reducer \$2
- Total \$22**

For a lighter version I made for some friends, I used super-lightweight drain pipe (\$10 for 10 feet), matching caps, and a 5/8-inch through-hull mushroom fitting in place of the pipe stub and barb. It weighed 1.1 pounds vs. 2.3 pounds for the DWV version, but the flow rate was lower (4 to 5 gpm vs. 8 to 12 gpm — perfect for collecting rainwater). The flow depends on the mushroom size.

- 1-micron polyester bag filter, seamless, trade size 4 \$7
- 4-inch x 10-foot drain pipe, double wall (enough for 6 filters) \$10
- 4-inch PVC drain cap \$2
- 5/8-inch Perko mushroom fitting \$10
- Total \$29**

Both housings use the same filter, McMaster/Carr, 9316T211 (specify 1-micron).

mcmaster.com/#liquid-filters

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Aluminum Is the New Teak

Full metal jacket replaces aged-out on-deck woodwork

My Cal 9.2, *Jade*, was in a distressed state when I bought her. She'd experienced a chainplate failure and had a large number of other issues, most of them minor and many of them, such as the sorry state of the exterior woodwork, aesthetic in nature. We first tackled the major issues and got ourselves out sailing, leaving the exterior woodwork and other cosmetic items for another day.

That day came when the wooden tiller broke off in my hand in the middle of a race, and I realized I could not put off addressing *all* the exterior woodwork! We dropped the sails, strapped on the emergency tiller, and limped home.

Once at the dock, I looked at the remains of the tiller and the poor condition of the companionway trim boards, dropboards, and even the slider. The teak was rotten in places and all of it needed to be replaced.

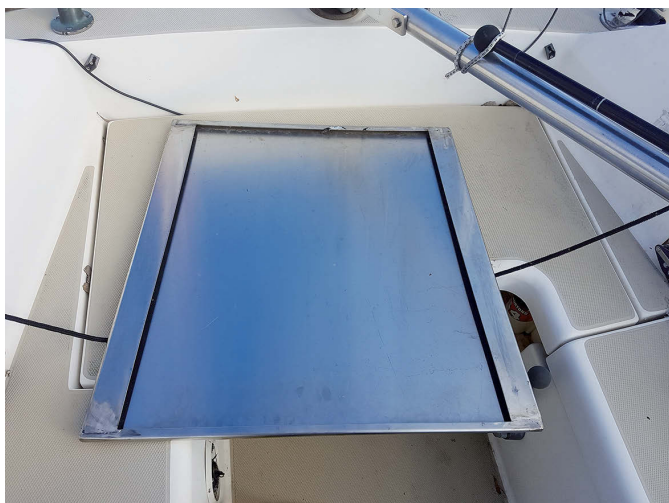
The next morning, I was at the local wood mill with high hopes and a notepad full of measurements, but the prohibitively high cost of teak came as a shock. Much as I love the beauty of woodwork on a boat, I know that wood is time-consuming to maintain, and that working with teak would be hard on my saw blades. Besides, there are ethical concerns about using a rare species like teak. Now I knew its cost, I could talk myself away from replacing the rotten teak with teak. I needed an alternative.



BY ROBB LOVELL

I keep my boat in the very industrial little town of Windsor, Ontario, where metal fabricators abound. I called my friend and sailing buddy Jeremy Gheller of Gheller Metalworks Ltd. He could fabricate everything in either stainless steel or aluminum. I chose aluminum as it's lighter, less expensive, and easy to maintain. We pulled the old teak off the boat to use as templates.

Starting with the companionway, Jeremy and his crew cut and shaped trim from 1/8-inch aluminum stock. Like the teak trim it replaced, this trim would define the channel into which the dropboards slide — but I no longer wanted multiple dropboards. Instead, I glued together the beat-up wooden boards to use as a template for a single aluminum board. To stiffen the metal board, and make it a better fit in



By adopting the industrial look of aluminum for his companionway, Robb avoided the high price of teak, main picture. The folded-back edges stiffen the dropboard, at left, and are thick enough to be a secure fit in its channels, at right. The slide is 1/8-inch-thick aluminum.



The aluminum tiller does not look out of place on a boat that had minimal wood trim — and has even less now.



the channels, Jeremy folded over the edges of the material in a metal-bending brake and spot-welded them at the corners.


The single board stows nicely behind the head against the main bulkhead and promises maintenance-free durability to withstand the rigors of life aboard a racing sailboat for years to come.

The hatch slide is simply a sheet of 1/8-inch-thick aluminum cut to size.


That left the rotten tiller as the only remaining piece of exterior woodwork on the boat. A replacement custom-made in wood would be expensive, so I decided, "Why not go all-in with the industrial look and make the tiller out of aluminum tubing?"

I purchased a length of 1/8-inch-wall aluminum tube from the metal shop's offcut shelf and one of the workers capped and knurled the end to give me a zero-maintenance tiller that fits my hand nicely and looks right at home.

I'm pleased with the clean and modern look of the aluminum, and that instead of oiling and varnishing teak, I simply break out aluminum polish once a season. Perhaps the icing on the cake is that the total cost — admittedly with a "friendship discount" — was a fraction of what I would

have paid for a custom wooden tiller and teak for the companionway. 

Robb Lovell grew up sailing on Lake Huron aboard his family's Endeavor 40, where he caught the sailing bug. That was about 20 boats ago. Rob enjoys buying and restoring boats and is an avid racer and cruiser based out of LaSalle Mariner's Yacht Club (LMYC) in Ontario. He currently races on a Cal 9.2 named Jade, but owns three other sailboats and a tugboat . . . yes, he has a problem!



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I love this stuff. E-Z Snap Zipper & Snap Lubricant really works. I had some tough-to-use zippers aboard: the cheap plastic ones sewn into our dodger windows and the metal ones on my tool bags. After one liberal application of this protectant/lubricant they worked better than ever — and they've continued to work smoothly for a couple of months.

I expected the product to be thin, like the Teflon-based sail-track lubricants I've used, so when I opened the tube, I was surprised to see a flat opening rather than a nozzle of some kind. But the product is viscous and slimy, and pressing the opening flat on the surface of the closed zipper and running it along the length works perfectly. I did not test this on any snaps.

For more information: iosso.com.

Michael Robertson, *Good Old Boat* editor

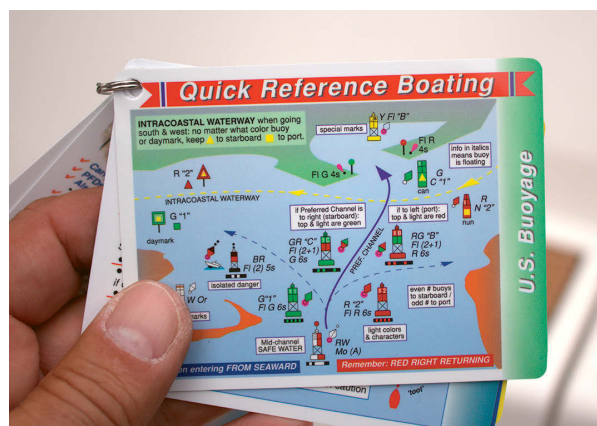
Boating information at a glance

Navigation Rules, Weather Forecasting, and Coastwise Piloting are among the several subjects Davis Instruments has condensed onto its Quick Reference Cards made of durable weatherproof plastic. Colors and graphics bring to life a vast amount of information on the cards, which are available in paper-size (with holes punched for storing in a three-ring binder) or pocket-size.

I've used the Coastwise Piloting card to identify a symbol on my chartplotter, saving me a trip to the cabin to dig out Chart No. 1. Large vessels in my sailing grounds often use horn signals, and the Navigation Rules card includes descriptions of sound signals, right-of-way rules, an aids-to-navigation key, and much more. Much of this information is probably available in an app, but I appreciate the physical cards I can grab from a coaming box, refer to, and then toss back in without a care.

For more information: davisinstruments.com.

Jerry Thompson, *Good Old Boat* contributor



Soles with holes

I live in flip-flops unless I'm headed to a wedding or funeral (and even then that depends on the wedding or funeral). So I deemed myself the perfect tester when Ventolation asked me to try out a pair of its Bali flip-flops. After walking around in them for three months, I do recommend them, with a caveat. The shoes are marketed as unique in their ability to shed sand, first through holes in the footbed to a vacant space below and from there out holes in the sides. Frankly, sand accumulation has never been a problem I associate with flip-flops. These shoes do shed sand as promised, but testing them side-by-side with conventional flip-flops, I didn't find this to be an advantage. But . . . this same design also results in a footbed that ventilates and is particularly comfortable in a cushioning/massaging kind of way on any surface. These are my go-to flip-flops for comfort.

They also dry very fast (so they don't squeak for a block after getting wet), and the footbed is removable for thorough cleaning when necessary. They're constructed of all man-made materials.

For more information: ventolation.com.

Michael Robertson, *Good Old Boat* editor



We present these profiles as a service, as firsthand accounts from fellow boaters. Neither *Good Old Boat* magazine nor the folks who profiled the products on this page were paid for these profiles. Most products were sent to *Good Old Boat* for review consideration by the manufacturers. We profile only a small percentage of the products that marketers contact us about, choosing only those we're interested in, in the hope you're interested too. A few products we pick up on our own, because we want to share.

continued from page 7

Requesting dodger details

Interesting article on building a hardtop dodger (“From Soft Dodger to Hardtop,” July 2018). Can you ask writer Charles Scott what he used to join two pieces of the FRP together — screws or small bolts? I am going to need at least two (and perhaps three) sheets and will require a secure joint to accommodate the curve necessary to taper to the frame.

—Bob Tigar, Pompano Beach, Florida

Charles Scott's response

Thanks for the question, Bob. I sandwiched the two sheets of FRP together by simply bolting them to the dodger frame every 14 inches or so. I tried gluing some sample pieces together with FRP cement (it comes in a 1-gallon can) but the glue didn't seem to set up very well, and I decided that there really was no reason to glue them together anyway. They are held firmly against one another by the curve of the dodger frame.

If you are asking about butt-joining the sheets together along the edge to create a width greater than 8 feet, I used two sheets sandwiched together but did not butt-join them. My dodger was just under 8 feet wide, so one sheet spanned the width of the frame.

—Charles Scott, *Good Old Boat* contributor



Where's the beauty shot?

One of my favorite sections of your magazine is the boat review. I was frustrated reading the review of the Island Packet 26 Mk II in the July issue because it did not contain any pictures of the whole boat. There were great pics of the bowsprit, cockpit, companionway, sidedeck, and engine compartment, but not a single picture of the whole boat. This contrasts with all previous reviews. For me (and other readers I'm sure), part of appreciating any good old boat is how it looks on the water. Thanks for the great magazine.

—Dwight Thomas, Plymouth, Minnesota

You're right, Dwight. When we realized our under-sail photos of Arlyn, our July review boat, weren't as pretty as she is, and we didn't have an alternative review ready to go, we made the decision to run the review without an under-sail photo. It wasn't a good decision, but neither would it have been a good decision to feature the photos we had. Here is a consolatory photo of Arlyn in St. Petersburg, Florida.

—Editors

To polybag or not to polybag?

Regarding Thomas Musselman's letter decrying polybag wraps (“Leave Off the Wrap,” Mail Buoy, September 2018), I vote “aye.” My suggestion is to adopt the recyclable paper wrap that *National Geographic* uses. It is sturdy enough and is still easily opened. Call them for their supplier.

—John Harvey, 1976 Tartan 37 *New Day*, Naval War College, Newport, Rhode Island

The image shows the cover of the Small Craft Advisor magazine, which features a sailboat on the water. Below the magazine cover is a large blue rectangular area with the text "SMALL CRAFT ADVISOR" in large, bold, yellow letters. To the left of this text is a small photo of a sailboat. Below the main title, it says "Subscribe to the print or digital magazine:" followed by the phone number "800-979-1930" and the website "www.SmallCraftAdvisor.com".



We love to hear from our readers! Send letters to the editor to michael_r@goodoldboat.com. We publish additional letters in our monthly newsletter, *The Dogwatch*, along with new articles and book reviews. If you don't receive *The Dogwatch* via email, send your name and email address to Brenda (brenda@goodoldboat.com).

I just saw the letter to the editor about plastic wrap on your magazine mailings. This is why I stopped my subscription. Please let me know if you change your wrap to something biodegradable or go without. I'll then re-subscribe.

—Dana Holsclaw, Tallahassee, Florida

Editor's response

Hi, John and Dana (and others whose mail wasn't printed). We dove into this topic in the August issue of our monthly digital supplement, *The Dogwatch*. In response to a "plastic vs. naked" question I put to the readers, we received more than 250 replies. We addressed the matter again in the September issue of *The Dogwatch* and pledged to keep readers informed in

that space. In short, we're continuing plastic for now, but exploring alternatives. It's worth noting here (for those who missed the discussion in *The Dogwatch*) that our polybags are 100 percent recyclable (#4) and are made from the same plastic as bread-loaf bags found in the supermarket. So, as we look at alternatives, we encourage everyone to reuse and recycle your *Good Old Boat* protector.

—Michael Robertson, editor

"This is Piper on the beach just down from the channel leading from White Lake to Lake Michigan on the Whitehall, Michigan, side of the channel," wrote sailor, liveaboard, and writer Erin Wehr. It's hard to tell whether Piper's wishing he were sailing or making sure that boat doesn't get too close. We'll go with the former.



Norseman cones available again

Here's some good news for owners of sailboats with Norseman rigging fittings. A few years ago, Lewmar announced that it would no longer manufacture Norseman mechanical terminals and would offer no further support for them. This meant no more replacement cones — unfortunate because Norseman fittings are reusable, but to reuse one, a new cone is needed. However, I recently came across Tylaska Marine and Aerospace in Mystic, Connecticut (tylaska.com). They now manufacture replacement cones for all sizes of Norseman fittings designed to be used with 1x19 rigging wire. After some recent prodding on my part, they're also now making cones for 7x7 lifeline wire!

I would also like to remind *Good Old Boat* readers to let *Good Old Boat* advertisers know where it is you saw their ad when you're doing business with them (and the same goes for advertisers in the digital supplement, *The Dogwatch*). It matters. I recently needed to replace our main halyard and was shopping for one. I called R&W Rope in New Bedford, Massachusetts (rwrope.com), and they were wonderful to deal with. I got exactly what I needed at a really nice price in a very short time. When I told them that I found them because of their ad in *Good Old Boat*, they expressed some surprise, telling me they never really know how effective their ads are until someone tells them.

—Ed Zacko, Sun City West, Arizona

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Stevlink18@gmail.com



Pearson 26 Weekender

1976. Great daysailer, excellent PHRF racer, heavy-duty gear, spinnaker-rigged, lots of accessories. Includes long-shaft OB, car trailer, steel cradle. Plymouth, MN. \$8,000.

Michael Barnes
763-557-2962
granite15230@gmail.com



Pearson Triton 28.5 with trailer

1962. Classic gem in Sailboat Hall of Fame. Rehabbed '05, newly glassed deck, w/canvas/fiberglass non-skid. All deck screw holes

glassed. No soft deck rot. Exc. brightwork. Unique bronze faucet, hardware, ports, lights. Tabernacle mast step and electric winch. Condition vg/exc. Always in fresh water. Mainsail, 4 jibs, spinn. New head, marine radio, dinghy, very good lines/cabin cushions. Well-maintained Atomic 4 gas 30-hp engine. Two extra bunks/sleeps 6. Many photos on Craigslist. Chicago. \$20,000.

Joe
773-355-9751
nerod@sbcglobal.net



Cape Dory 28

1977. Yanmar 2GM20F 16-hp diesel, RF 135 jib, reefed mainsail, new bimini, Garmin GPS Map 441s, Raymarine ST 2000 AP, solar-charged batteries, new Jabsco head. Origo 2-burner stove, Magma propane grill, standing headroom. Engine serviced recently. Many accessories. Veteran of several East Coast voyages. Owner ready to retire. Galesville, MD. Reduced to \$9,750

Dixon Hemphill
703-250-9277
dixonh1925@gmail.com



Island Packet 31

1989. Bought new. Ocean vessel. One owner. Yanmar 27 diesel (low hours). Full keel 4'. Recently hauled and bottom painted. Lots of equipment and extras. All shrouds and stays replaced and inspected recently. Extras: electronics, chart plotter, AC (at dock), propane tank, fridge, stove, head, shower. Well maintained, cockpit cushions, main and genoa sail covers. Bimini, swim ladder. Original manual available. At owner's home, Lighthouse Point, FL. \$43,500.

Dennis Berg
954-296-6422
jbdwdberg@aol.com



Cat Ketch 24

1986 Sand Hen. Chuck Paine design. Draft 2'4". Disp. 5,000lb. SA/D 20. Freestanding masts on tabernacles. Sails old but serviceable. New sailcovers. Lines from mainmast lead aft. Honda 4-stroke w/alternator, low hrs, 2x50 AH AGMs. Simrad AP. Solar panel. Sleeps 4. Galley with sink, counter, storage. 100l flexible FW tank. Porta potty. Danforth anchor w/200' rode, 25' chain. Two-axle galv. trailer. Castine, ME. \$7,500.

Silas Yates
207-326-0663
greendolphinsby@roadrunner.com



Cape Dory 330

1986. Alberg's redesign: cutter rig, taller 35' mast, roomier interior and cockpit. *Annie Laurie* is jewel of the fleet, loaded with upgrades: new Yanmar engine in '08, new yankee and Schaeffer RF, new main in '12, new Bierig self-tending jib in '16, Hood in-mast RF, new rigging '14, 4 Awlgrip jobs since '00. Solid, safe, a joy to cruise, gorgeous. Perfect boat for couple with occasional guests. Mount Desert Island, ME. \$55,000.

Contact the broker:
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207-244-5560
yachtworld.com/boats/1986/
Cape-Dory-330-3220159/



Dark Harbor 12 1/2

2015. Classic gaff-rigged wooden daysailer from 1915 Maine design. Very rare. Newly built cedar on oak, launched '15. Main, new jib, bronze hardware, mast, boom, and keel from early version. Freshwater sailer. Running rigging vgc. Custom motor mount. Trailer and cradle vgc for safe travel. Stored indoors. A joy to sail. Builder unable to devote time to it. Midland, ON. \$12,000.

Don Kidd
519-212-1358
argus6642@gmail.com



C&C 35 Mk I

1973. Rare classic racer/cruiser. Draws 5'3"; fast, nimble, fun to sail. All lines led to cockpit. Solid hull/no blisters. Many upgrades, incl. 30-hp diesel, folding prop, FB main w/Dutchman, RF, 4 headsails, new halyards, bimini. Compass, GPS/Chartplotter D/S/W, VHF. Shorepower, regulated battery charger, dripless stuffing box. H&C water, microwave, propane cooktop. AM/FM/CD, electric bilge pump. Spinnaker/whisker poles, swim ladder, anchor. MD. \$20,000.

John Fillipini
703-409-9187
johnfillipini@gmail.com



Vancouver 36

1978. Fully equipped bluewater cutter in sound condition. Designed by Robert Harris and manufactured by Durbeck in FL.

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Nimble 20

1988. Beautiful double-ended yawl, yet sails as a sloop. Fun to sail, yet goes right up to the beach. Ted Brewer design. Two 6' berths, V-berth, sink, and 5 opening bronze ports. Electric-start OB in well. Tanbark sails include RF jib, main, mizzen. Easy to rig and trailer on included dual-axle trailer. Own a classic boat. LOA 20', beam 7'9", draft 11" to 4'. Chesapeake Bay, VA. \$9,500.

James Schmidt
804-436-4067
jc4sail@gmail.com



Camper & Nicholson 35
1975. Masthead sloop, wheel steering, Mercedes-Benz diesel. Disp. 15,650lb. A serious ocean-cruising boat, seakindly, sensible and easy to handle. Cowichan Bay, Vancouver Island, B.C. \$36,000 CAD.

David Clegg
250-737-1042
campernicholson35sailboat.ca

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**Sailing
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Herreshoff 12½

1943. Totally restored. She is plate #2003 built in the Quincy Adams Yacht Yard. Includes new Torqeedo electric engine. New mooring cover and jib cover. All new rigging. New cockpit cushions. New Triad trailer. Old Saybrook, CT. \$18,500.

Ray Gaulke
860-510-0071
raygaulke@yahoo.com



Hinterhoeller 28

1966. Freshwater boat. Tiller steering. Sleeps 5. North main new '17, RF genoa. 1988 Mariner 9.9 elec-start OB in well. Autohelm 1000. Raymarine knotmeter. Electrical systems new '15. Plumbing upgrades '15. Life jackets, life ring, MOB pole, cushions, cockpit awning. Danforth anchor w/chain/nylon rode. Custom tandem-axle trailer. Clayton, NY. Price reduced \$8,500.

Mark Fontaine
410-956-5841
mrflady@hotmail.com



International Folkboat 26

1976. Marieholm #2595. Featured in GOB Sept '14. Extensive equipment. 6-hp Tohatsu 4-stroke OB, '11 Sobstad RF jib, Furlex, Andersen #12 ST winches. Additional suit of hank-on sails, solar panel, SIMRAD Tiller Pilot, Delta anchor, new SS lifelines, Boomkicker, soft vang, Schaeffer traveler and mainsheet blocks. New Standard Horizon DSC VHF. Raytheon depth. Charleston, SC. \$8,500.

Ken Jacobsen
843-609-9823
kjacobsen@knology.net



Cape Marine Coast 34

1995. Performance pilothouse double-ender cruiser built to a high standard in British Columbia by Randle Yacht Corp. Beautiful light-mahogany interior, Perkins 4-108 (low hours), 4.5KW generator, Cruisair AC system, new 300' 5/16" anchor chain. Charleston, SC. \$69,900.

Gary
678-230-1956
gkConcrete@
ConcreteEvaluator.com



Yankee Yachts 38

1974. Sparkman & Stephens IOR design. Hull #24 of 24. Family fun; fast and safe! Fully equipped for coastal and offshore. Just repainted with Epifanes polyurethane. See S&S blog for design 2094 C-2. Located Kittery or Port Clyde, ME. \$54,500.

Howard Green
603-498-1067
Howard.h.green@
raymondjames.com



Rhodes 19

1974. Fixed keel. Beautiful, lovingly maintained, and ship-shape. Terrific daysailer and racer;

test sail for interested buyers. '18 KiwiGrip non-skid deck, '13 Alexseal hull. Galvanized trailer for \$1,000 and 3-hp OB for \$500. It breaks our hearts to part with her. Moving to a Colgate 26 and can't keep both. Yarmouth, ME. \$4,000.

Ben Tupper
207-699-9686
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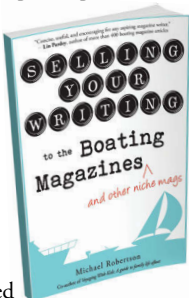
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A First Sail to Remember ...

... but not one
to brag about
or to repeat

BY JOHN VIGOR

When I was 15 or so I spent my weekends hanging out at the local yacht club looking pitiful until an old man felt sorry for me and took me for a sail. His name was Alan Byrd and he owned a 24-foot cruising sloop. I crewed for him regularly on weekends for several months until it occurred to me that I now knew everything about sailing and wanted my own boat.

My parents couldn't afford a boat, so I sniffed around the dinghy park alongside the yacht club and eventually found a 14-foot hard-chine wooden catboat with a steel centerboard. She had about her the sad air of a long-abandoned boat. She was called *Wetazel* and I was to find later that she lived up to her name. She seemed very ancient indeed. There were patches of rot around the centerboard casing and most of the paint had long ago flaked off the sun-bleached floorboards.

I kept a watch on *Wetazel* for several weeks and noted that no one ever came near her. I poked around in the yacht club locker room and found her old yellowed mainsail in a pile of discarded canvas and rope. I made surreptitious inquiries about her ownership but nobody knew whose boat she was. Someone thought she was actually owned by the yacht club. He said she belonged to the singlehanded class of some long-past Olympic Games.

Eventually, I could stand it no longer. I bought some coarse sandpaper and started sanding her down. I worked on the theory that any club member who saw me would naturally conclude she belonged to me because who in his right mind would sand a boat that wasn't his? *Wetazel* became mine by right of hard labor.

I got all the loose flakes off the bottom inside the boat and wondered what to do about the thin gaps between the bottom planks. I bought a large can of Plibond rubber paint and sloshed it all over the bottom inside, forming a skin that by any reasonable calculation should have been waterproof.


On the day when I took my first boat for my first sail on Durban Bay, the sun was shining brightly and the wind was steady from the northeast. I was delighted with the way *Wetazel* handled. Her rig was very simple, of course, just that one big mainsail with the mast right forward, and she was

not at all hard-mouthed, even in the gusts that had her flying along on a broad reach and carving a fuss of white foam through the warm waters.

About two miles from the yacht club, we rounded the sandbank near the container terminal and ran dead downwind along the channel leading to the mangrove swamps. I intended to land on the white beach near the mangroves because, despite her coating of Plibond, *Wetazel* was leaking. I needed to bail her out. The rubber coating had lifted from the bottom and three or four inches of water was swilling around the bilges.

I moved forward to reach my bailing bucket just as a gust pounced on us from astern. All the bilge water ran forward in a rush with me and put the bow under. *Wetazel* kept plowing on at an angle until water came pouring over the small half-deck up forward. And then she simply filled up and sailed herself completely to the bottom in 40 feet of water.

I floated out of the cockpit as it disappeared beneath me. I had no life jacket, of course, but I could swim, and the sandbank was only about 100 yards away. I stood and shivered on that isolated sandbank for nearly an hour until a small fishing skiff happened along and came to see what all the frantic waving and shouting was about.

They took me back to the yacht club, where I got on my bike and pedaled home as fast as I could go. I kept clear of the club for several weeks for fear of being hunted down, but in the end, nobody said a word about *Wetazel*, or asked why she had disappeared. I eventually joined the club (and am still a member) but never ventured a word of what happened when I took my first boat for her first sail. 

John Vigor, a former newspaper columnist and editorial writer, is the author of 12 sailing books. He is a retired sailing and navigation instructor accredited with the American Sailing Association. He lives in Bellingham, Washington. johnvigor.com





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