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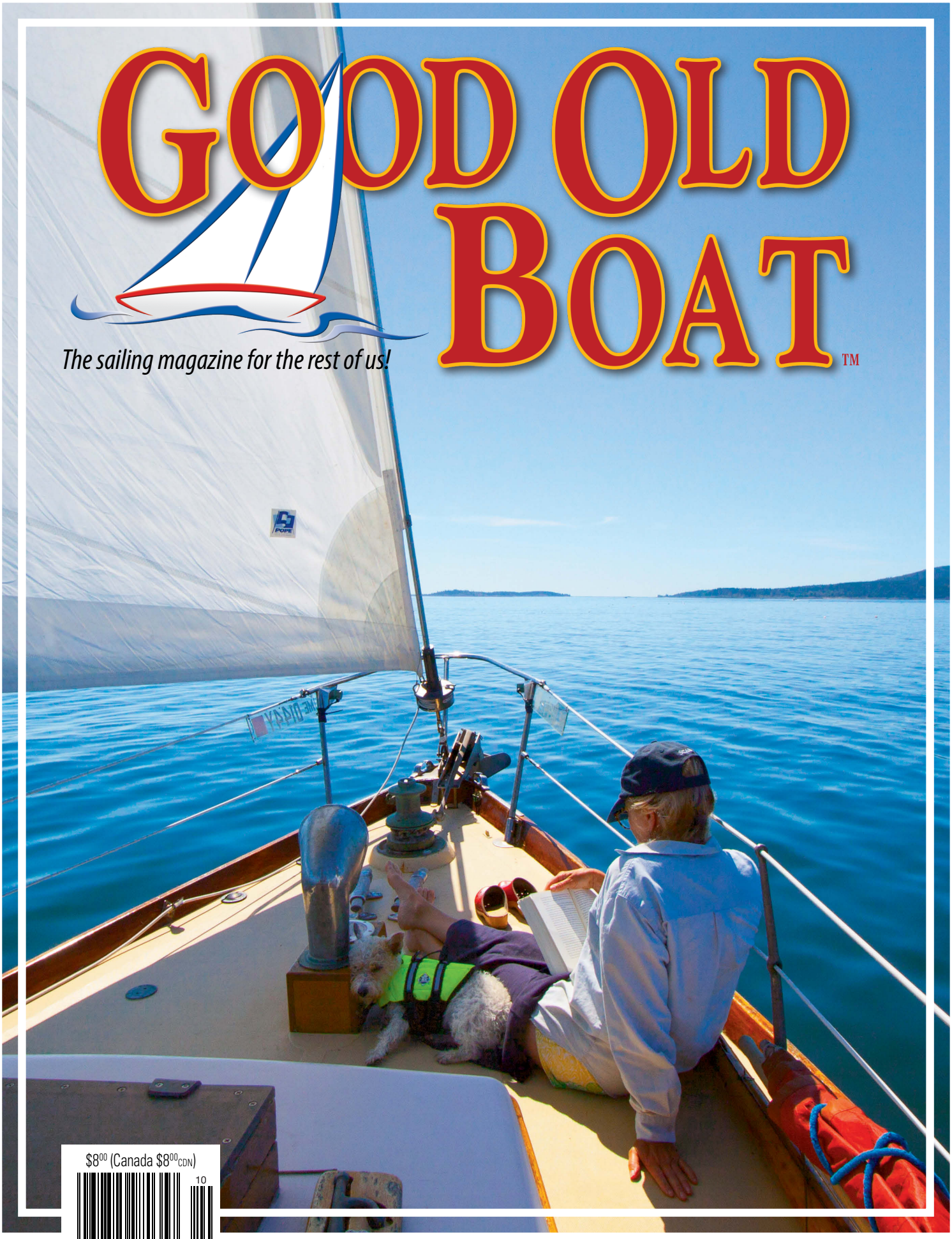

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Issue 116 September/October 2017

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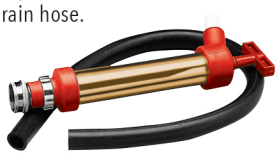

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GOOD OLD BOAT™

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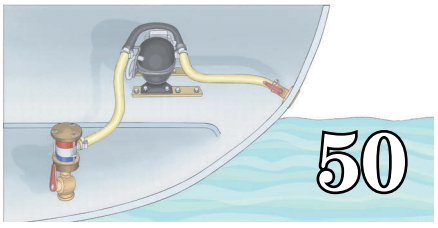

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News from the world wide web

Smooth sailing with sea dogs

Meg Marrs of K9 of Mine has put together a fun and informative infographic about dog safety and well-being on board. She tells us that seasick dogs may get relief from some human seasickness meds and explains why even fit water-loving Labs should wear PFDs. And get this: dogs with thin or light-colored coats are susceptible to sunburn — and you can buy dog sunscreens for them! Boating dog lovers can learn more at www.k9ofmine.com/dog-boating-safety.

Making a distress call

On page 36 of this issue we have an important story about a near dismasting, along with a careful examination of the root cause.

For another twist on the topic of rigging failure, go to the Young & Salty website. Guest poster Andrew Baines, at left, doesn't go into how his boat's forestay parted or why, but focuses on the immediate aftermath and his ultimate decision to request a rescue (youngandsalty.com/pan-pan).

Free boats

Way back in the November 2007 issue of *Good Old Boat*, in "The Rescuers: Fighting Entropy," Susan Peterson Gateley told the story of a company founded to save neglected and unwanted boats from the fate of chainsaw and landfill. We were pleased to learn recently that Bone Yard Boats is still going strong, matching free or nearly free boats with eager, energetic new owners. The company's David Irving is now semi-retired and will be suspending publication of the newsletter, but says he plans to keep the Bone Yard Boats website going for the indefinite future. So if you have the inclination to take on a project boat, or just want to dream about what you could do with a free 48-foot schooner, or simply to nab a cool shirt, check out boneyardboats.com. You can also head over to *Good Old Boat*'s own Fixer-Upper Sailboats page, where everything is under $5,000, recently including a Cape Dory Typhoon Weekender and a Rhodes Chesapeake 32. It's on our website, under Resources for Sailors.

Looking back; looking forward

No deviations in *Good Old Boat*'s wake

BY MICHAEL ROBERTSON

Back in 1998, when Loran-C was in widespread use and the world's attention was focused on Y2K, a couple of Great Lakes sailors noted that the content of the most popular sailing magazines was advertiser-driven toward the newest boats and accessories, and that the cost of both was already out of their reach and that of their sailing peers. In response, Karen Larson and Jerry Powlas took a chunk of money out of their savings and got to work starting a sailing magazine for the rest of us.

The premiere issue of *Good Old Boat* spoke to a silent majority of sailors, people sailing older boats and maintaining their boats themselves. Many of those boats had outlived their manufacturers. Many were no longer supported because of the frequency with which their builders changed hands. But all of them were built of fiberglass, and people had come to realize that boats built of this material would be around for a long time.

In that same issue, Karen summed up her readership by reflecting on our natural inclination to admire the big new expensive sailing yachts, offering that, "Maybe instead, [those owners] should envy us for what we get in return for the bottom-paint splatters on our seaboots and our lazarettes full of tools: we get the confidence that comes with competence. We know we can fix our boats and . . . we know we can sail in adverse situations when we have to. We have gained the companionship of others who really do know what it's like to own, care for, and sail a boat. We are part of a community of sailors, and there's nowhere we'd really rather be."

Amen.

Also in that first issue, author Don Casey summed up the reality of good old boats: "If you are new to sailing, maybe you think owning an old boat is like owning an old car. Here is an essential truth: the only similarity between a 1968 Chevy and a 1968 Hinckley is the year of manufacture. The safe assumption is that a 30-year-old car isn't trustworthy. In contrast, a well-maintained 30-year-old sailboat can be the equal of a brand-new boat in every way."

Twenty years and 116 issues later, Loran-C has bowed to GPS and Y2K is a footnote in history, but the silent majority of sailors and the number of good old boats we sail has grown.

I can't think of a better time to be part of the team putting together the most interesting and worthwhile sailing magazine published today. When Karen and Jerry asked me to join the *Good Old Boat* family early last year, I jumped at the chance. Now I've stepped into Karen's Topsiders and have taken off at full stride with a group of professionals I'm pleased to call friends. Each of us is committed to turning out a magazine we look forward to reading ourselves.

Illustrator Dave Chase, self-portrayed at bottom right, created this caricature of the contributors to the first issue of *Good Old Boat*. They are, clockwise from top left, Nigel Calder, Mary Jane Hayes, Don Casey, Karen Larson, John Vigor, Jerry Powlas, and Dave Gerr. (Contributor Stan Terryll is not pictured.)

And as always, we want your feedback. Send me an email if you spot an error in an article, or if you sense we're drifting away from what you love about this magazine, or if you think we can do better in some regard. Tell me what you think we're doing right.

And if you're at the Annapolis sailboat show next month, stop by the *Good Old Boat* booth and give us your thoughts in person. Most of the crew and several friends of the magazine will be there. We're eager to say hello.

Good old retirement, points of sail, and catboat love

Wishing Karen and Jerry fair winds

Congratulations to Karen and Jerry on founding and running a great magazine, and on their sailing retirement. It is a wonderful accomplishment that has afforded them *Mystic* and *Sunflower* time. I do hope they will continue as at-large contributors. Whatever they see fit to write, we readers will appreciate their insights. Continued good weather and seas and great sailing for them, wherever that may be.

–**Jim Hunt**, Twain Harte, Calif.

I read about the passing of *Good Old Boat* to new people. I have enjoyed the magazine and the people associated with it for many years. Karen and the gang seem just like *Good Old Boat* people, just like us. I love the reviews of boats with their lineage and the past histories of major players in the industry. Even the advertisements by Hamilton and others are enjoyable. I trust that Karen will touch base with her following, perhaps speak at local sailing clubs. I greatly appreciate all her fine work and I trust the magazine will do fine.

–**Ted O'Brien**, Clearwater, Fla.

Cover controversy

What a pleasant surprise it was to see a Tartan 30 on the cover of the May issue of *Good Old Boat*. S&S drew some beautiful and very seaworthy boats. I miss my T30, *Bird of Passage*, very much.

Whoever wrote the blurb about the cover picture cannot be a sailor. The blurb says that the T30 on the cover is heading upwind. Wrong! She is broad reaching and the boats in the background going the opposite direction are beating. I also noticed that the boarding ladder is down and dragging in the water.

–**Steve Stoehr,** Westerville, Ohio

Thanks for featuring a Tartan 30 on the cover of the May issue, but the photo raised some questions for me.

The boat is reaching with the swim ladder down and most of the crew looking to port. Is there crew overboard? (Putting down the swim ladder is step two in our crew-overboard drill.) I think not in this case, as the crew all look relaxed and confident. It looks like a pre-start situation with what could be a foredeck crew in the pulpit and other boats in the background. A word about the setting would be appreciated.

I love the magazine and look forward to each new edition. My own Tartan 30, No. 245 is named *Avanti II* and is at home at Deep Cove Yacht Club in North Vancouver, BC, Canada.

–**Russ Curtis**, North Vancouver, BC, Canada

The editor responds

Well, well, well. We received a lot of feedback on the caption for our lovely May cover photo, not just here but on an online forum (73 posts about our caption on Al Fooks' SailboatOwners.com forum). I don't think in 20 years a *Good Old Boat* cover photo caption (only 41 words!) has generated so much interest, and I'm not sure why this one did, but I checked with the photographer to see if my facts were right. I shared with him all of the feedback we'd received.

Homer Shannon got back to me right away: "Oh goodness, looks like you stepped in it this time."

Homer said that it has been a while since he took this particular photo, but that he did think he shot the photo

Ghislain Côté took this photo of his favorite aid to navigation, the Haut-fond Prince (Prince Shoal) lighthouse, located on Canada's St. Lawrence River, near the mouth of the Saguenay Fjord. Ghislain reports that here the cold nutrient-rich waters of the fjord meet the shallower river water, attracting tons of belugas, blue whales, fin whales, and porpoises, all easy to see from the decks of *Roter Sand*, the 80-foot gaff-rigged ketch he works aboard.

Gil Bogaard of the Kootenay Lake Sailing Association in British Columbia sent this colorfully processed photo he took of one of the club's Rum Cup races. The three boats running are a J/29, a San Juan 30, and a Santana 27. Do you have a photo you think will dazzle us? If you do, send it to michael_r@goodoldboat.com. If we print it in Mail Buoy, we'll send you a *Good Old Boat* hat or T-shirt.

We love to hear from our readers! Send letters to the editor to michael_r@goodoldboat.com.

during a race pre-start. (So much for my description of the Sabre 38 he was aboard being in "hot pursuit" of the pictured Tartan 30).

Homer added, "As for their swim ladder, I have no idea if it was up or down."

That makes two of us — yet several readers see it as unmistakably down. Oh well, we're *Good Old Boat*, and who among us hasn't left an anchorage with a ladder down, or raised a sail with a fender still over the side?

But then Homer weighed in on my most contentious assertion, that our cover girl was heading upwind. "From the sails, I'd agree that the Tartan was broad reaching; they would have to be trimmed much tighter to be going upwind."

Okay, thanks Homer. Now my hand begins to shake whenever I write the caption for a cover photo. Someone suggested that to be safe, I just pare it down, such as, "Boat, somewhere," but that wouldn't be any fun. Keep the letters coming!

–MR

Catboat fellowship

I enjoyed Craig Moodie's snapshots of his catboat summer adventures ("Catboat Postcards," May 2017). Craig poignantly describes his ventures on salt water with his family, enjoying both the beauty of the area and the challenge of his boat. As the owner of a similar catboat, I have not yet ventured beyond our local inland lake, claiming a lack of experience and doubt about the seaworthiness of a small open boat without a heavy keel or centerboard. I hope the confidence Craig conveys in his adventures will challenge me to expand my skills and territory in my good old boat.

Please keep the catboat articles coming!

–Ray Hornyak, Johnstown, Pa.

Clairvoyant editors

So I'm working on the cooling system on my sailboat engine, the odor and such issues with the head, and contemplating bottom work . . . then the July issue arrives and *Good Old Boat* does it again! Great articles on exactly what I needed to learn about. We keep every issue, and this is the reason. You guys are psychic. Thanks so much!

–Richard Spano, Fort Monroe, Va.

Lasers don't measure temperature

Great article on an overheating engine ("First Things Last," July 2017). Most of the author's information was spot-on. However, an infrared (IR) thermometer does not use a laser to measure temperature. The laser is just used to correctly aim the sensor at the object to be measured.

An IR thermometer uses a lens to focus thermal, or blackbody, radiation being emitted by an object and converts that to an electrical value that is corrected against ambient temperature and displayed. IR thermometers are useful tools, but results can easily be misread or misinterpreted in a small engine room with a wide variety of heat sources and reflected heat energy. I would caution readers to use a direct-contact thermometer as a second opinion before making any critical or expensive decisions.

–Sam MacNichol, Shady Side, Md.

Robin Urquhart responds

Sam, you're completely correct about the laser, and thanks for the clarification. I misstated how the instrument works. The laser in an IR thermometer is for indication purposes only. As you noted, the thermometer uses an infrared-radiation detector. There is a cone of detection, which is stated on most IR thermometers.

I'm not a mechanic, but several marine mechanics and a navy diesel engineer have recommended we keep an IR thermometer on board. A contact thermometer will always be more accurate than a remote sensor, but I don't think IR thermometers are so sensitive they will give frequent false readings. The detection cone is very important, however, and if misused will definitely cause a misreading.

To be extra safe, it's probably a good idea to follow up with a contact thermometer as you suggest, but as most engine troubleshooting deals with orders of magnitude, the IR is usually sufficient.

Thanks again for the clarification and insight.

–Robin Urquhart, aboard *MonArk* in the Pacific Ocean

Odor be gone

I just received your July 2017 issue and, as always, I enjoyed reading all of the interesting articles. I found Drew Frye's article, "Deodorizing the Head," particularly interesting, as this is an issue most of us struggle with.

I, too, have tried many ways to reduce or eliminate foul smells from the head, from replacing all the hoses, to using different chemicals in the holding tank, to keeping the surrounding area clean and providing sufficient ventilation.

There are two outlets at the bottom of my holding tank, and a three-way valve in the previous system allowed me to pump either directly overboard, to the holding tank, or to the pump-out station ashore.

I removed the three-way valve, thereby avoiding the possibility of stuff getting stuck in the valve and causing a foul odor until the next pump-out. Now, everything goes directly to the holding tank, and from there either to a shoreside pump-out or, where it's legal, overboard. (This is possible because my holding tank has two outlets, one now dedicated to the shoreside pump-out and the other overboard via the macerator pump). When replacing the hoses, I eliminated sag that allowed stuff to sit between pump-outs.

However, the biggest change I made to eliminate foul odor was to switch from saltwater to freshwater flushing. I rigged a simple and safe system from the freshwater faucet in the head sink. That alone, I estimate, reduced about 95 percent of the odor. I also pour about a cup of vinegar into the bowl before I leave the boat.

I live in Florida and use the boat about once a week, year-round.

Thanks for a fantastic magazine.

–Tom A. Strom, Homestead, Fla.

Viking 33

A rakish C&C design that races and cruises equally well

BY ROBB LOVELL
PHOTOGRAPHS BY JOHN VANDEREERDEN

Restoring an old boat is much like falling in love. Not much about it is logical or rational, but when we fall for the right girl — or the right boat — we are all in. Such was the case for John and Jo Vandereerden when they bought their Viking 33. They could see the boat would sail well enough to race competitively, and the well-designed and nicely appointed cabin would ensure they could pursue their love of cruising the Great Lakes in comfort. Given those qualities and the boat's attractive profile with its long overhangs and classic good looks, John and Jo were hooked.

The canary-yellow 1974 Viking 33 was named *Renegade II* when they bought her. She was originally purchased from Ontario Yachts by boatbuilder Haydn Gozzard, who apparently sold her in the 1980s to help fund his Scorpio Yachts business. John and Jo have had some fantastic cruising adventures and participate in weekly club racing. It's obvious that their honeymoon with *Renegade II* continues, given the long list of improvements John has made to the boat since taking ownership in 2009.

Jon and Jo keep *Renegade II* in LaSalle, Ontario, at the LaSalle Mariner's Yacht Club, a small, friendly organization of 75 members located on the Detroit River.

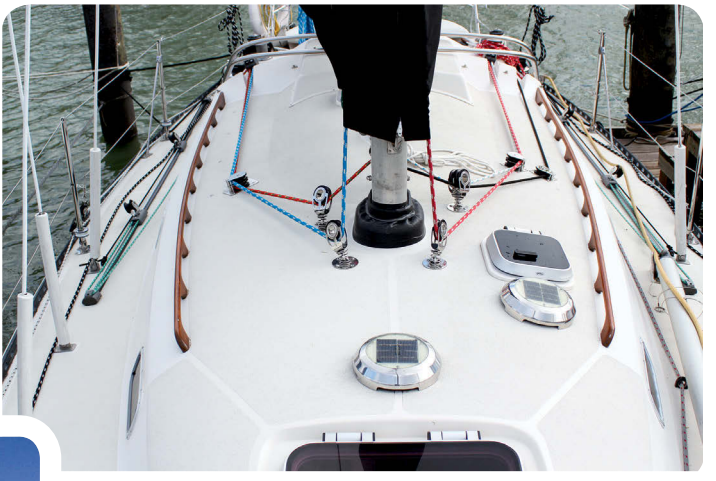
The Viking 33 embodies the style of racing yachts designed in the waning years of the CCA Rule enhanced by the design sensitivities of Cuthbertson & Cassian: quick, agile, and a pleasure to behold under sail or at anchor.

History

Building on the reputation of the Viking 28, which had gained some success in the Great Lakes region as a one-design and club racer, the builder, Ontario Yachts of Burlington, Ontario, offered the Cuthbertson & Cassian-designed Viking 33 to the market as an IOR (International Offshore Rule) racer with a reasonably well-appointed cruising interior. The same company also built the Ontario 28 and 32 models, as well as being well known for building the Etchells one-design sailboats.

Ontario Yachts survived the collapse of the boatbuilding industry in Ontario in the early to mid-1980s and is still in business, but it no longer manufactures keelboats or supplies parts for any of the keelboat models it built. It still builds the Etchells and makes some other small boats and boat parts like tillers and trailer storage boxes — and it made the fiberglass tray for the pitcher's mound at the SkyDome in Toronto.

The Viking 33 entered production in 1972. After some changes made in late 1974, it continued in production as the Viking 34 but with the same hull and an updated interior. The rig was heightened by almost 2 feet, adding 21 square feet to the sail area, the keel was reconfigured, and the rudder design was tweaked. Ontario Yachts built a combined total of about 93 Viking 33s



A local boatyard added a self-draining anchor locker at the bow, at top. John says it's the best upgrade so far, and did not affect the interior space of the boat in any measurable way.

A solar vent and small hatch John added over the head help remove odors, above. All halyards and control lines lead aft to a pair of cabintop winches, one each side of the companionway. This is certainly convenient and a must for shorthanded sailing. Most of the deck hardware has been replaced.

John recently had Garhauer make a custom rigid boom vang for *Renegade II*, at left. As well as controlling twist in the mainsail, a rigid vang makes a topping lift unnecessary. It can't be moved to the toerail to act as a preventer, but the photo shows a block and tackle that could serve that purpose.

and 34s over a 10-year production run that ended in 1982.

Design and construction

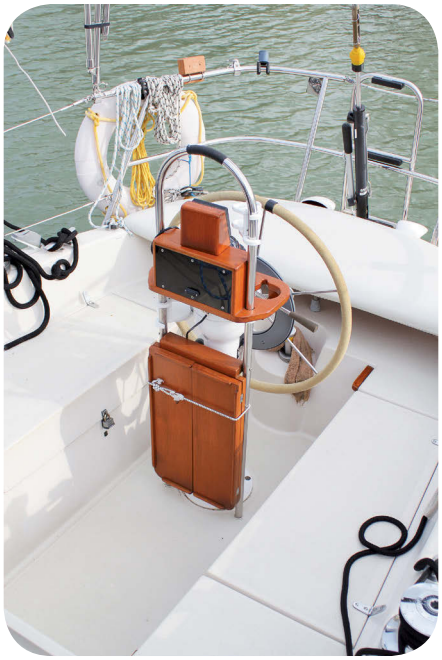
The Viking 33/34 has the look of a modern classic, and to the trained eye it's obviously a C&C design with its raked bow, counter transom, and strongly cambered coachroof. It has a swept-back fin keel and a semi-balanced spade rudder on a stainless-steel rudder stock. John says the swept-back keel is excellent for shedding weeds, which can be an issue on the Detroit River.

Using the conventional construction methods of the day, Ontario Yachts made the hull with a solid laminate of hand-laid fiberglass mat and woven roving, laying additional glass in high-stress areas. The deck is a sandwich of fiberglass and balsa, so is subject to the usual core issues if hardware has been fastened to the deck without due care being paid to properly sealing the balsa core to prevent water intrusion. Bulkheads are marine-grade teak-faced plywood and are tabbed (taped and bonded with resin) to both the hull and the deck to give the entire structure strength and rigidity.

The hull-to-deck joint is bonded and mechanically fastened with bolts and the rail is capped by an aluminum slotted toerail (an easy place to attach snatch blocks). Eight stainless-steel bolts secure the lead keel to the hull.

The bilge is shallow, and the wooden stringers that support the cabin sole can get wet, so this area warrants close inspection for rot. The stringers are relatively easy to access. The Yahoo owners group has information on this repair (see "Resources," page 13).

The V33/34 is a masthead sloop with a keel-stepped single-spreader mast supported by forward and aft lower shrouds. Later in the production run, the mast was changed and rigged with



John made a custom helm seat to fit across the aft end of the cockpit, near right. An emergency tiller can be fitted to the top of the rudder stock (a rag is draped around it in the photo) aft of the wheel. The top rail of the the stern pulpit is split for better access to the swim ladder.

***Renegade II*'s curved mainsheet traveler spans the bridge deck, at right. Tail bags and an array of instruments adorn the cockpit bulkhead.**

Comments from Viking 33/34 owners

I am the owner of a 1973 Viking 33 my father bought when I was working at Ontario Yachts. Ontario Yachts offered the option to buy a partially finished hull and deck for the owner to complete. As a result, although the layout is fixed, boats have a wide variety of deck hardware and interior finishes. Ours was a kit boat, so we selected and installed our own deck hardware, mast and boom, and electrical and plumbing systems. The build quality is great and it is a solid boat. The original blue gelcoat on the 44-year-old hull still shines. There are no leaks, no wet areas on the deck, and star crazing around fittings is minimal given her age.

The only areas that have needed work are the wooden stringers under the mast step — they needed to be replaced — and the core material in the cockpit-locker hatches, which also had to be replaced due to water entering at the edges of the hatches. In the last few years, the underwater gelcoat has cracked and blistered. The boat is a great sailing boat and can take anything the Great Lakes can throw at it, 50 knots or 10 foot waves no problem. It has great helm balance but can be a little skittish in heavy downwind conditions. The interior is small by today's standards, but is OK for short cruises.

–Sean Dinsmore, Oakville, Ontario

The V33/34 is a fabulous boat. My brother, *Good Old Boat* contributing editor Rob Mazza, was a naval architect for many years with C&C and Hunter Yachts. He described it as "one of the prettiest boats George Cassian ever designed." I bought mine in 2008 after years of racing International 14s and Sharks. At age 60, I bought the boat I lusted after at age 25.

–Ron Mazza on the Yahoo owners forum

The V33/34 is well-balanced with fingertip steering despite the huge genoa (480 square feet at 150 percent), but develops a bit of weather helm as the apparent wind kicks up above 15 to 20 knots if sail is not reduced. With half of its weight in its lead keel, it heels fairly quickly and then firms up. It points very well and is very fast downhill in lighter air under spinnaker. The 33 version is a better heavy-weather boat and the 34 version (taller rig) is better in light air. The glass construction is heavy, the mast section is huge, and the ballast, at 4,500 pounds, is massive.

The interiors are sparse. Most of the wooden mast bases in the sump have been replaced with metal. The Atomic 4 engine is one reason why the boat is so inexpensive to buy.

–Hugh Johnston, Ashbridges Bay, Toronto

The Viking 33 really is a delightful boat to sail in almost all conditions. With the large powerful fore-triangle, it is a bit of a wild child and was meant to be that way. The acceleration is impressive. It is also a great passagemaker. I have sailed from Toronto to Point Breeze, New York, in 8 hours flat, averaging a bit over 8 knots. Taking the chute down was a bit of an adventure that day.

–Dan Erlrich on the Yahoo owners forum

I sailed *Halinjon III* for 31 years of pure pleasure and won more than my share of races on Lake Ontario, including the Susan Hood (1st overall), the Freeman Cup, LORC season championship in 1985 (1st in 17 of 18 races), etc. . . .

–John Pretty, Oakville, Ontario

In the saloon, at left, a convertible L-shaped settee to port faces a shorter settee to starboard. Because neither of the bulkheads at the aft end of the saloon carries to the overhead, the interior feels very open and airy.

The U-shaped galley is to starboard, next to the companionway, below left, and retains the original Homestrand alcohol stove, which John had rebuilt by the manufacturer. *Renegade II* also has cold-plate refrigeration in the icebox. A single sink is placed nearly amidships.

A navigation desk with drawers, and the electrical panel outboard, is fitted to port, below. Aft of it is a quarter berth, the head of which doubles as a seat for the navigator.

double spreaders. Some owners have reported on the Yahoo forum that they had to reinforce or replace the chainplates.

On deck

The V33/34 is a relatively narrow boat with a maximum beam of less than 10 feet and has the fine entry and pinched stern typical of IOR designs of the 1970s. The cockpit is on the smaller side for a 33-foot boat. Most of the boats were delivered with a tiller, but *Renegade II* has since been fitted with Cinkel pedestal steering that allowed John to custom-build a high padded helm seat across the stern. Sheltered under the bimini, the seat is a comfortable spot when cruising.

Like most boats designed to the IOR, the Viking has a large J measurement (15 feet), which means big headsails. Trimming them is relatively easy with the large primary winches on the cockpit coamings. *Renegade II* has a pair of self-tailing spinnaker winches.

When John and Jo bought the boat, the stern pulpit had been damaged, so John ordered a custom split pulpit with an opening that allows easy access to the swim ladder. He also replaced the double lifelines along with the stanchions and their bases.

The deck gelcoat has been redone because the nonskid was worn to the point that footing was a concern. There is enough exterior woodwork to match the Viking's classic lines without making maintenance a full-time job.

Belowdecks

A well-laid-out, finely appointed cabin with some beautiful joinery awaits belowdecks. Headroom in the saloon is about 6 feet and diminishes slightly forward under the slope of the coachroof. Fixed portlights in the saloon admit light while the companionway, a hatch above the forward cabin, and added hatches in the main cabin and the head provide ventilation throughout the boat.

A fully enclosed head is to port, forward of the main bulkhead and, facing it, a proper hanging locker. At 6 feet 4 inches long, the V-berth is surprisingly large. A very large storage locker forward of it accommodates a lot of cruising provisions.

Under way

Our test sail was competing in the River Rat, a late-fall regatta on the Detroit River. Conditions were blustery with a steady 15 to 20 knots of wind and occasional gusts to 25. Our crew for the race was a mix of regulars and some first-timers to the boat.

As we eased out of the north boat basin, we headed into the rollers and steered downriver toward the start line. The original 30-horsepower

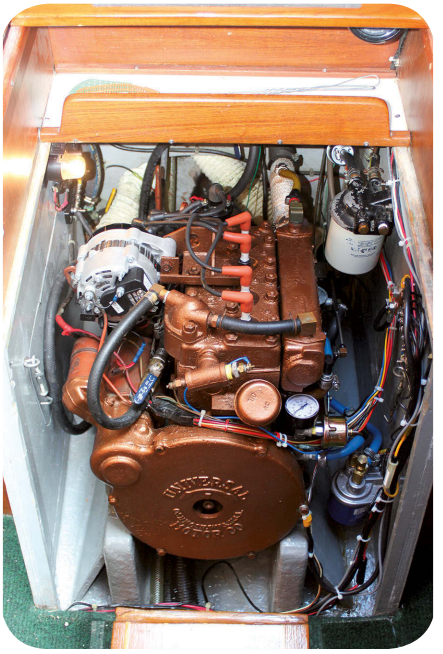
Resources

Viking owners group
A link to the Yahoo group can be found at www.viking33.com

Atomic 4 gas engine is in great shape and, paired with a folding two-blade propeller, pushes the boat well. John says parts are easy to find. He is diligent about maintenance, and has moved all the engine gauges from the engine panel low in the cockpit to a custom panel on the binnacle, putting the all-important engine information front and center. The shifter and throttle control are also on the pedestal.

As we neared the starting area, we rolled out the large roller-furling headsail and shut down the engine. *Renegade II* came alive, and it was apparent why John and Jo love her so much. She has the feel of a large solid, well-built boat while still being lively and responsive to the helm and sail trim. She felt very manageable even in the gusty conditions.

The V33/34 is a headsail-driven boat with the mainsail acting more like a trim tab, especially in heavy conditions. It likes to be sailed upwind with some heel, which most owners report adds speed by lengthening the waterline.



While the Atomic 4 gasoline engine is no longer manufactured, parts for the venerable engines are available. At least one owner feels that not having a diesel lowers the resale value of the Viking 33.

We likely sailed the boat with more sail area than was ideal, so the rail was wet for a good majority of the upwind portion of the race, but the boat handled it well. Perhaps more important, this sort of sailing is fun and put a smile on everyone's face. Tacking the large headsail up the narrow river was a chore even with the self-tailing winches. The boat won't outpoint a more modern design but it will come very close.

Downwind, *Renegade II* is lively, owing to her large foretriangle and very large spinnaker. Given her design and her narrow stern she obviously won't rocket off on a plane, but she holds her own downwind with just about any boat of the same vintage, as her record of successful racing shows. Owners

report that the boat can be a handful downwind in high winds because it tends to wander. As do most IOR boats with pinched ends and similar hull shapes, the V33/34 tends to roll downwind, but does not seem overly prone to this issue. The use of tweakers (lines set up amidships to pull down on the spinnaker sheets and create better sail shape) and sailing on a broad reach instead of dead downwind help the helmsman steer a steadier course.

Once we crossed the finish line, John and the crew instantly switched into cruise mode. They shortened sail, turned up the stereo, broke out ice-cold libations, and stretched out in the cockpit to enjoy the sun of a fading fall afternoon. John and Jo, fresh from three and a half weeks of cruising the North Channel and Georgian Bay, recounted some great stories of their adventures. Again it became clear to me why they love this boat so much.

Conclusion

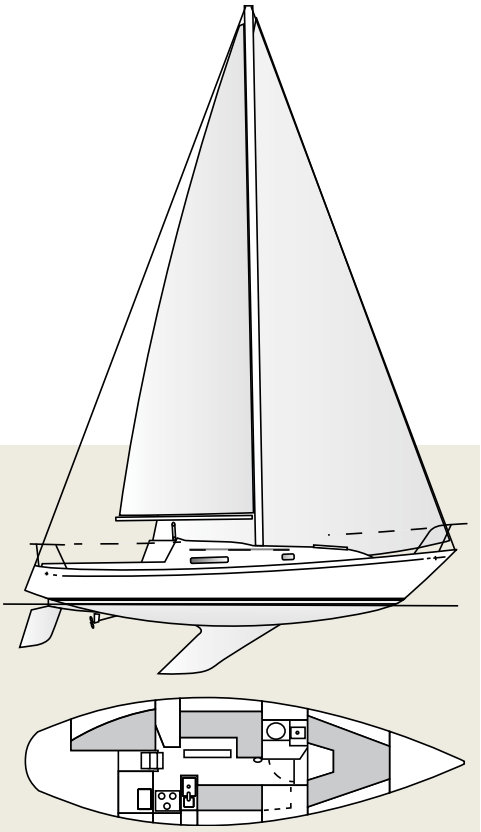
The Viking 33/34 is truly a sailor's boat that will bring a smile to any sailor's face whether on a spirited chase around the buoys or a leisurely daysail. While it is an IOR design, it is not an extreme example and does not suffer terribly from some of the stability flaws and idiosyncrasies of its contemporaries.

Athough now 35- to 45-years old, these boats have the advantage of being well constructed, and most seem to be well cared for. Anyone interested in a V33/34 would do well to have the boat surveyed, with emphasis on a careful inspection of the cored deck for water intrusion and delamination and an examination of the wood stringers beneath the cabin sole.

A survey of the market revealed prices ranging from as low as $6,000 for a project boat to about $28,000 for a well-restored example. Many of the boats seem to be in the Great Lakes region, although there is a report of a small fleet on the west coast of Canada, outside Vancouver.

A review of the Yahoo owners group for the boat reveals that John and Jo are by no means the only ones enjoying a love affair with the Viking 33/34. Numerous posts by owners convey their great affection and pride of ownership.

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. Robb 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!*



The Viking 33

Designer:	Cuthbertson & Cassian
LOA:	33 feet 7 inches
LWL:	27 feet 2 inches
Beam:	9 feet 10 inches
Draft	5 feet 6 inches
Displacement:	8,807 pounds
Ballast:	4,512 pounds
Ballast/disp. ratio:	.51
Sail area (100%):	519 square feet
Sail area/disp. ratio:	19.5
Disp./LWL ratio:	196

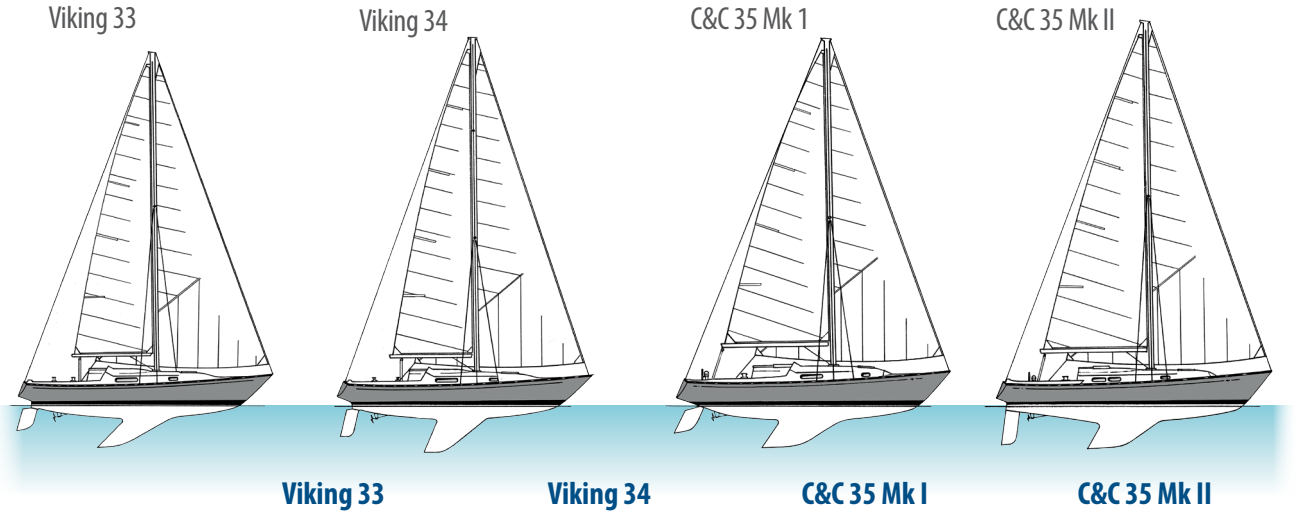
The Viking 33 and 34

. . . evolve alongside a contemporary cousin

BY ROB MAZZA

The Viking 33 is one of a small number of boats designed for another builder by C&C Yachts after the company's creation in 1969. Prior to 1969, the design firm of Cuthbertson & Cassian designed for a variety of builders, but after the formation of C&C, most of those outside allegiances disappeared. The rare North American exception was Ontario Yachts of Oakville, Ontario, with whose founder, Dick Kneulman, George Cuthbertson had always had a close relationship. Dick was already building the Cuthbertson & Cassian-designed Viking 28 and Viking 22 (Classic 22), and he also built George Cuthbertson's only International 5.5 Metre design.

Equally interesting, when looking at the Viking 33 and its successor, the Viking 34, is the nature of model updates and why some, like the Viking 34, were given their own brand designation while others, like the C&C 35 Mk II, became a continuation of an already well-established brand. Indeed the modifications between the C&C 35 Mk I and Mk II were far more extensive than those between the Viking 33 and 34. So what logic, if any, determines when a model is "new" and when it is an "upgraded" successor? It can be a little obtuse.



	Viking 33	Viking 34	C&C 35 Mk I	C&C 35 Mk II
LOA	33' 7"	33' 7"	34' 7"	35' 0"
LWL	27' 2"	27' 2"	27' 6"	30' 2"
Beam	9' 10"	9' 10"	10' 7"	10' 7"
Draft	5' 6"	6' 0"	5' 3"	5' 7"
Displacement	8,807 lb	8,900 lb	10,500 lb	13,800 lb
Ballast	4,512 lb	4,500 lb	5,000 lb	5,620 lb
LOA/LWL	1.24	1.24	1.26	1.16
Beam/LWL	.36	.36	.38	.35
Disp./LWL	196	198	225	224
Bal./disp.	.51	.51	.48	.41
Sail area (100%)	519 sq. ft.	540 sq. ft.	576 sq. ft.	629 sq. ft.
SA/disp.	19.5	20.1	19.2	17.5
Capsize number	1.9	1.9	1.9	1.8
Comfort ratio	22.1	22.4	23.5	29
Year first built	1971	1973	1969	1973
Designer	C&C Design Group	C&C Design Group	Cuthbertson & Cassian	C&C Design Group
Builder	Ontario Yachts	Ontario Yachts	C&C Yachts	C&C Yachts

The Mk II C&C 35 is a development of the Mk I hull form, but the C&C 35 Mk III is an entirely different boat, with no relation to the Mk II except in name. In the case of C&C, of course, mark designations allowed the use of the same brand names in later years, when there were so many C&C models on the market that numerical duplication became impossible to avoid. A number of builders solved this problem by going to three-digit length designations or even metric designations. So, using the C&C 35 of the same period as a counterpoint, rather than examining the performance potential of the Viking 33 compared to other like boats, I'm going to compare it to its own successor and explore some of the changes builders would make to "upgrade" a successful model to keep it in production longer.

Making a market

In production boatbuilding, the goal is to market a product that offers more features than are available on used boats. If a successful boat is in production long enough, its main competition for customers is often its own older version on the brokerage market at a considerably lower price. By refreshing an existing design every few years, builders were able to differentiate the new boats from the older boats and offer customers, new and old, the opportunity to buy a boat with upgraded features.

In C&C's case, that upgrade usually had as much to do with performance improvements as with creature comforts. That was certainly so when a change was made in the rating rule under which the boats would be racing, as happened in the early 1970s when the Cruising Club of America (CCA) Rule was replaced by the new and very different International Offshore Rule (IOR). Performance upgrades to a given model included changes in keel and rudder designs, which were rapidly developing in offshore racing yachts in this time period, as well as adjustments that allowed boats to measure into the IOR level-rated ¼ Ton, ½ Ton, ¾ Ton, 1 Ton, and 2 Ton classes.

Close cousins

It's clear from the drawings that the Viking 33 and the C&C 35 are very similar in size — they are only 4 inches different in LWL — and style — they are both obviously the work of the same design office. Both have the swept keels typical of C&C at the time but the Viking 33 is more extreme, reflecting a slight nod to a more race-oriented configuration than the 1969 C&C 35, while the 1971 Viking also has a less severe scimitar shape to its rudder, indicating a maturing or evolution of design thinking over the two years that separated these designs.

Despite their similar LWLs and the C&C 35 being heavier, 10,500 pounds compared to the 33 at 8,800 pounds, the C&C has a more typical displacement/length ratio of 225 compared to the competitively lower 196 for the more race-oriented Viking 33. However, due to the C&C's larger sail area, their sail area/displacement ratios are almost equal: a generous 19.5 for the 33 and 19.2 for the 35.

In 1973, with the introduction of the IOR, both models were upgraded, and it's interesting to compare the changes made between the 1971 CCA Rule Viking 33, the 1969 CCA Rule C&C 35, and their respective 1973 IOR successors.

Viking 33 to Viking 34

The Viking 33 was modified to incorporate lessons learned on the racecourse to improve her performance and also to meet the requirements of the new IOR ¾ Ton class. Starting with the same hull, deck, and interior, the designers replaced the highly swept keel with the more vertical Peterson-style keel, which had been so successful on *Ganbare* that year, with deeper draft to achieve a higher aspect ratio and increase stability. At the same time, they gave the boat a more vertical rudder, also with a higher aspect ratio. It looks as though they may have even installed the new foils on the same keel sump and the same slight rudder skeg to keep hull modifications to a minimum. The rig went higher by almost 2 feet and the length of the boom (E) was slightly increased, adding sail area, while the aspect ratio of the foretriangle was further increased by a reduction in J (the base of the foretriangle). Eventually, a thinner double-spreader section with double lower shrouds replaced the original single spreader rig and its tripod shroud configuration.

Essentially all the major tooling stayed the same, but new "bolt-ons" were used to improve performance and achieve the ¾ Ton rating. Logically, this model change should have been a Mk II upgrade, but Ontario Yachts stipulated a one-foot-higher designation, even though the length did not change at all.

C&C 35 Mk I to Mk II

By contrast, the C&C 35 Mk II received a new keel, new rudder, all-new rig, and more than 3,000 pounds of added displacement as well as substantial alterations to the original hull. Erich Bruckmann, who made the modifications in the C&C Custom Shop, always maintained that, rather than starting with an existing Mk I hull, as they did, it would have been better to have started from scratch with a whole new hull plug.

A 6-inch-higher sheer increased freeboard and necessitated an entire new deck and house, which was then designed to better match the newer boats in the C&C lineup. A redesign of the stern in way of the rudder, to earn a better rating under IOR, resulted in an almost 3-foot increase to the LWL over that of the Mk I. Other than the galley and quarter berth switching sides and the use of more extensive interior pans and liners, the interior was essentially the same.

So, here we have two early designs from C&C that evolved in production to meet new market requirements. One of them was introduced as a new model, while the other, with far more significant changes, was given the Mk II designation. Go figure.

Rob Mazza is a Good Old Boat *contributing editor who, in his long career with C&C and in other design offices, designed many boats that are now good and old.*

Ramping up amps to the battery bank

A new alternator delivers on the promise of faster charging

BY DAVID LYNN

David tested the Balmar AT-SF-200, at left in the photo, against an 80-amp Motorola, center, and a 200-amp PowerTap.

Electrical systems aboard cruising sailboats hang by two threads: the capacity and reliability of the batteries and the capacity and reliability of the alternator that charges them. Very often, alternators delivered as original equipment do not have the generating capacity to maintain the batteries at a sufficiently high charge when the boat is in normal use, so many owners choose to install a larger alternator.

Selecting the right alternator for a good old boat involves several considerations. For a couple of reasons, a bigger alternator is usually better. First, most battery types are happier with a large charge current. AGM batteries, for example, resist sulfation longer if the bulk charge rate is between .2 x C and 5 x C, where C is the rated capacity in amp-hours. Using this formula, the 600-amp-hour AGM house batteries on *Nine of Cups*, our Liberty 458, will be happiest if the alternator can provide at least 120 amps and as much as 3,000 amps! A rather large alternator is required to meet even the minimum output that the battery's manufacturer recommends.

The second reason a large alternator is desirable is to reduce wear on the engine. We racked up the majority of the hours on our engine charging our batteries. Running a diesel engine with a light load for extended periods is hard on the engine and leads to carbon buildup. We replaced our engine in New Zealand a few years ago and were amazed at how occluded the exhaust manifold had become. A larger alternator puts a bigger load on the engine, making it work harder — which in turn produces less carbon buildup. Thus, when we bought *Nine of Cups* in 2000, one of the first upgrades we made was to replace the original 80-amp alternator with the biggest and best alternator we could find (and afford). This turned out to be a 200-amp PowerTap alternator.

One of the first things we discovered, however, is that a 200-amp alternator doesn't really charge the batteries at 200 amps. The reason for this has to do with both how alternators work and how their manfacturers measure their rated output.

First, an alternator's output increases with its speed — the faster it spins, the more amps it produces. Therefore, many 200-amp alternators will only generate those 200 amps at maximum rpm. Since we usually run our engine at 1,500 rpm to charge the batteries (about half of our engine's maximum rpm), the actual charge current produced by our alternator is much less than its rated output. Our PowerTap alternator typically generates around 150 to160 amps at this speed.

Second, there is a large difference between the Hot and Cold ratings of an alternator. This is due primarily to the resistance of copper wire, which increases with temperature. When an alternator is at ambient temperature and all its copper windings are cool

For his test equipment, David used, far left clockwise from top: a digital multimeter, laser tachometer, infrared thermometer, and a multimeter with a clamp. To simplify installing the Balmar AT-SF-200 alternator for testing, at left, he chose the model with mounts that matched those of *Nine of Cups'* alternator.

(Cold), its output is substantially higher than when they are at normal operating temperature (Hot). Not all manufacturers provide specifications based on output at normal operating temperature, so it's important to bear this in mind when comparing alternators.

The new Balmar alternator

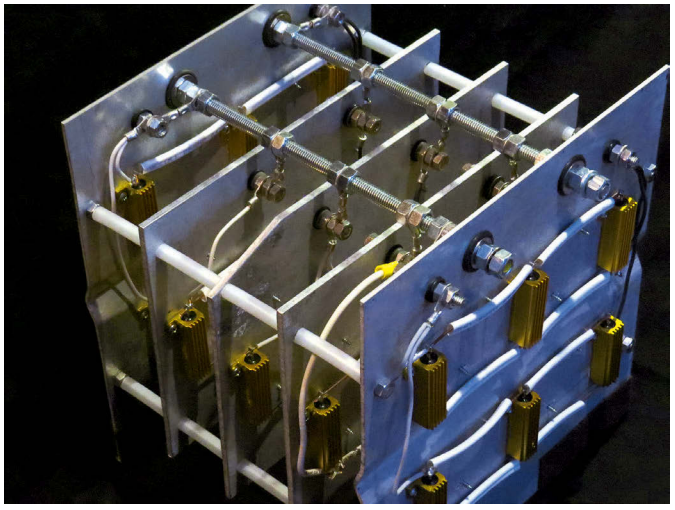
When I was talking alternators with Jerry Powlas, *Good Old Boat*'s recently retired technical editor, he suggested I take a look at a new high-output alternator made by Balmar. Supposedly, the Balmar AT-Series alternators produce far greater outputs than other comparably sized alternators, especially at low rpm.

I looked at the Balmar specs and was immediately skeptical. Balmar claims that its alternators show a 30 percent improvement over not only its own older designs but its competitors' designs also. Alternators are becoming more efficient with each decade, but it's been a slow evolution. Manufacturing and design improvements have eked out small increases in efficiency, but a 30 percent increase seemed unreasonable. I set out to learn more.

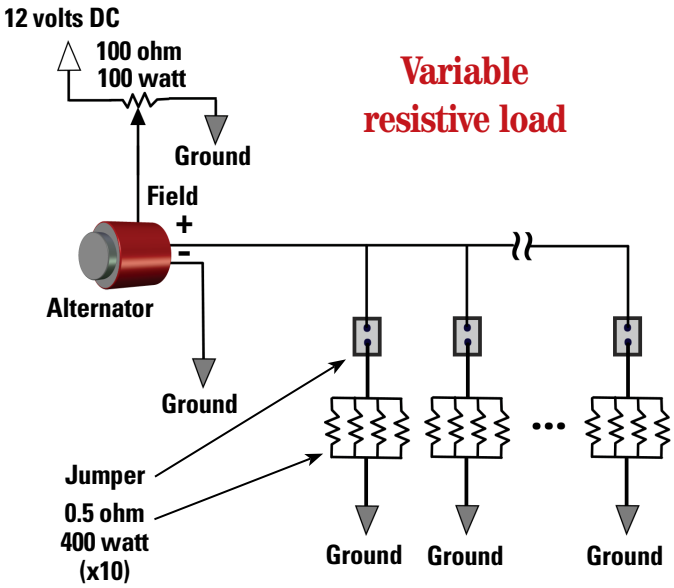
It turns out that Balmar *did* figure out a way to improve its alternators significantly. The efficiency of an alternator is directly related to the density of the copper in the stator winding. To wind the stators of its new alternators, Balmar used wire with a square cross-section (in place of conventional wire with a round cross-section). This change virtually eliminates air gaps between the loops of wire, increasing the overall density of the copper in the stator winding. Additionally, Balmar increased the number of slots in the stator from 36 in a traditional S-wound alternator to 96 in its new AT stator. The Balmar website provides several graphs that show the improved performance that results from these changes; I was definitely intrigued. When Balmar offered me the use of one of their new alternators for testing, I was happy to oblige.

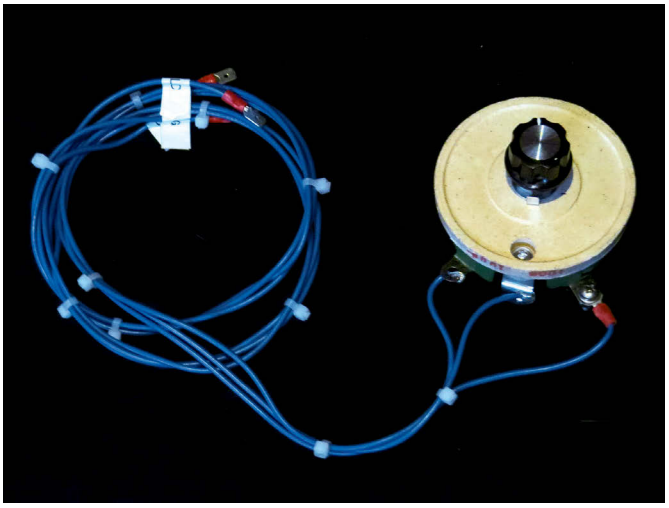
The company sent me a new Balmar AT-SF-200 alternator. It has a bright-red powder-coated finish and appears well built and designed for the marine environment. This model comes in several mounting configurations to match different engines, and I chose the model with the same foot and mounting dimensions as my current PowerTap and my backup 80-amp alternator, making the mechanical installation easy. I also chose a double-belt pulley option to match my existing arrangement.

I met only a couple of minor incompatibilities. My alternators use a different field/tach connector than the Balmar, so I fabricated a pigtail arrangement with both types of



For testing the output of the alternators at different engine rpm, David built a resistive load with 40 variably connectable resistors.





David modified the field current of the alternators, and thus their output, with a 100-watt potentiometer connected to 12 volts DC.

connector in parallel. Another minor issue was that both my old alternators use 5/16-inch studs for the positive and negative terminal connections, while the Balmar provides an 8mm stud for the positive terminal and a 6mm stud for the negative terminal. I'm sure this is to reduce the likelihood of reversing the cables, but it means that I would be faced with a dilemma if I were to keep the alternator: Should I change the terminal on the negative cable to fit the Balmar, making it too small for my backup alternator, or use the existing, slightly oversized terminal with the Balmar, increasing the resistance of the connection? I think I would take the first approach, knowing I would have to jury-rig a high-current jumper if ever I had to use my backup alternator.

Test equipment

My plan was to measure the outputs of three alternators at various rpm: my original 80-amp Motorola alternator, my 200-amp PowerTap alternator, and the new Balmar 200-amp alternator on loan for me to test. Before I could do any testing, however, I needed some new test equipment.

Before sailing off on *Nine of Cups*, I'd worked as an electrical engineer in an industry in which it was often necessary to take highly accurate measurements. Measuring to these degrees requires expensive calibrated equipment that was well beyond my budget. The equipment I could afford to buy would not yield results that were traceable to the National Bureau of Standards, but I did perform several crude calibration and accuracy checks to determine whether the results could be trusted. More on this later.

My test equipment consisted of the following:

- Current measurement: Craftsman 82014 digital multimeter with DC-current clamp
- Voltage measurement: Topone 820B digital multimeter
- Temperature measurement: General Tools IRT207 infrared thermometer
- Speed measurement: AGPtek DT-2234C+ digital laser tachometer

In addition, I needed a resistive load capable of handling more than 200 amps of current while generating a voltage drop of 12 to 14 volts. Moreover, I needed to be able to vary the load, so that I could maintain the 12- to 14-volt drop over the load as the alternator current increased from a few amps to more than 200 amps. Doing the math, I determined the resistance would have to vary between .05 and .5 ohms and be able to dissipate 3,000 to 4,000 watts. I did some checking online and found several candidates, but all came with a very high price tag: several hundred dollars to several thousand dollars.

I thought I might be able to use electric space heaters, but after measuring the resistance of one, I came to the conclusion that I would need 200 heaters in parallel to get the resistance low enough! I could find no inexpensive solution other than to build a fixture myself.

I used 40 2.0-ohm 100-watt 1 percent resistors mounted on several large sections of scrap aluminum sheet metal. Any or all of the resistors could be connected to the circuit using jumpers. It took me two days to build the fixture at a total cost of about $100.

To control the output of the alternators, I connected the field wire to 12 volts DC via a 100-ohm 100-watt potentiometer. By rotating the pot, I could modify the field current from zero to fully on. (See the schematic on page 19 for details of the test circuit.)

Test protocol

I mounted each alternator on my engine in turn and, for each one, measured the current generated while I increased the engine speed from idle (600 rpm) to 80 percent of full throttle (2,200 rpm). As the engine speed increased, I decreased the resistance of the load to keep the alternator voltage between 12 and 14 volts DC.

The ratio of the engine pulley to the alternator pulleys is 2.4:1, which means the alternator speeds ranged between 1,450 and 5,300 rpm. Through this range, I took measurements at eight different speeds, increasing the speed roughly 500 rpm between data points. At each data point, I measured the alternator frame temperature, alternator speed, alternator current, voltage across the resistive load, and the temperature of the resistive load.

I allowed each alternator to reach an operating temperature of between 190°F and 245°F. I tested the PowerTap alternator first, followed by the 80-amp Motorola alternator and then the Balmar. I repeated the test using the PowerTap alternator to verify that the results were consistent.

Results

The graph on the facing page shows the test results for the three alternators. The results for the two older alternators did not surprise me — they were very much in keeping with the charge currents I was experiencing. The results for the Balmar were slightly better than the results I was expecting, based on the data given on the Balmar website. What is most interesting is the low-rpm performance of the Balmar alternator. It ramps up much more quickly than the PowerTap, which is an important consideration in an application like ours on *Nine of Cups*.

As noted above, the pulley ratio for *Nine of Cups*' alternator is 2.4:1. The table on the facing page compares the outputs of the three alternators based on engine speed rather than alternator speed. At an engine speed of 833 rpm

— barely above idle — the Balmar alternator produces 126 amps. This is 80 percent better than the PowerTap! The Balmar also reaches a very respectable 184 amps at only 1,250 rpm, 30 percent better than the PowerTap at the same speed. I was impressed.

The table also shows the calculated load on the engine in horsepower at the various engine speeds. As expected, the Balmar alternator loads the engine more at lower rpm than the others. This loading makes the engine work harder, reducing the amount of carbon buildup for those of us who frequently use an engine to charge the battery bank.

My conclusion is that the Balmar AT-Series alternators are everything Balmar claims them to be, and anyone thinking of upgrading their charging system should definitely consider them.

Caveats

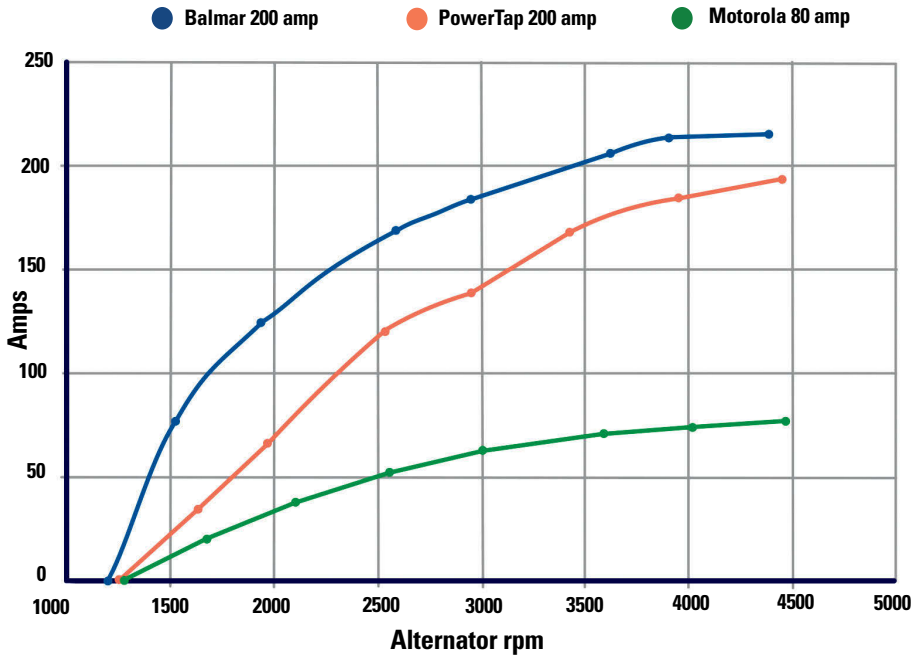
As mentioned earlier, my test equipment and environment were less than ideal. In a perfect world with an unlimited budget, I would have had my test equipment calibrated by an independent lab, I would have done the testing in an environmentally controlled workspace, the alternators would be driven by digitally controlled motors, and the resistive load would be computer-controlled. This is not quite how I was able to do my on-site testing on *Nine of Cups*.

Where possible, however, I did cross-check my instrumentation with other equipment, I took several readings to check consistency, and I repeated individual measurements. I conducted all of the testing within a few hours, so the ambient conditions were similar, and I ran all three alternators long enough under load to reach operating temperature. The Motorola and PowerTap alternators ran slightly cooler, between 190°F and 225°F, while the temperature of the Balmar alternator was warmer, between 210°F and 245°F.

In addition, I tested the PowerTap alternator twice, once at the beginning of the testing process and again at the end, to check the repeatability of the testing. I found it impossible, using the throttle on *Nine of Cups*, to set the engine to the exact same speed for all data points, so I did a linear interpolation of the data in order to compare results. Assuming my assumptions were reasonable and my calculations were correct, the results compared favorably, within plus or minus 4 percent.

Thus, I feel reasonably confident that, while the testing may not be up to laboratory standards for absolute accuracy, I achieved an acceptably accurate comparison of each alternator to the others.

Alternator power curves



Alternator output comparison

Engine speed (rpm)	Balmar output (amps)	Balmar load (hp)	PowerTap output (amps)	PowerTap load (hp)	Motorola output (amps)	Motorola load (hp)
625	67	1.12	25	0.42	15	0.25
833	126	2.11	70	1.17	36	0.60
1,042	160	2.68	120	2.01	51	0.85
1,250	184	3.08	142	2.38	63	1.06
1,460	203	3.40	174	2.92	70	1.17
1,675	212	3.55	187	3.13	74	1.24
1,875	213	3.57	195	3.27	78	1.31

David Lynn is Good Old Boat*'s electronics editor. He was an electronics technician in the U.S. Navy for six years before getting his BS and MS in electrical engineering. He spent his career designing electronic instrumentation utilizing embedded microcontrollers. David and his wife, Marcie, sold all their land anchors and have been living aboard* Nine of Cups*, their 1986 Liberty 458 cutter, since purchasing her in Kemah, Texas, in 2000. In those 17 years, they have sailed her nearly 90,000 nautical miles and visited some of the more remote places in the world in their ever-so-slow world circumnavigation.* Nine of Cups *and crew returned to U.S. waters last year and are currently cruising Chesapeake Bay and converting a van into a land cruiser. Find them on their website at www.nineofcups.com or their blogsite at www.justalittlefurther.com.*

Anchoring without

The practiced art of setting and weighing anchor under sail

BY FIONA MCGLYNN

In four years of cruising aboard *MonArk*, we've lost our engine twice. On the second occasion, in San Francisco Bay, the alternator seized and we were faced with the prospect of anchoring under sail. At the time, dozens of questions came to mind. How quickly will the boat decelerate when turned into the wind? Should we enter the anchorage under mainsail, headsail, or both? How long will it take *MonArk* to tack through the wind under headsail alone? Of course, we'd have had the answers to these and other questions had we previously taken the time to practice anchoring under sail.

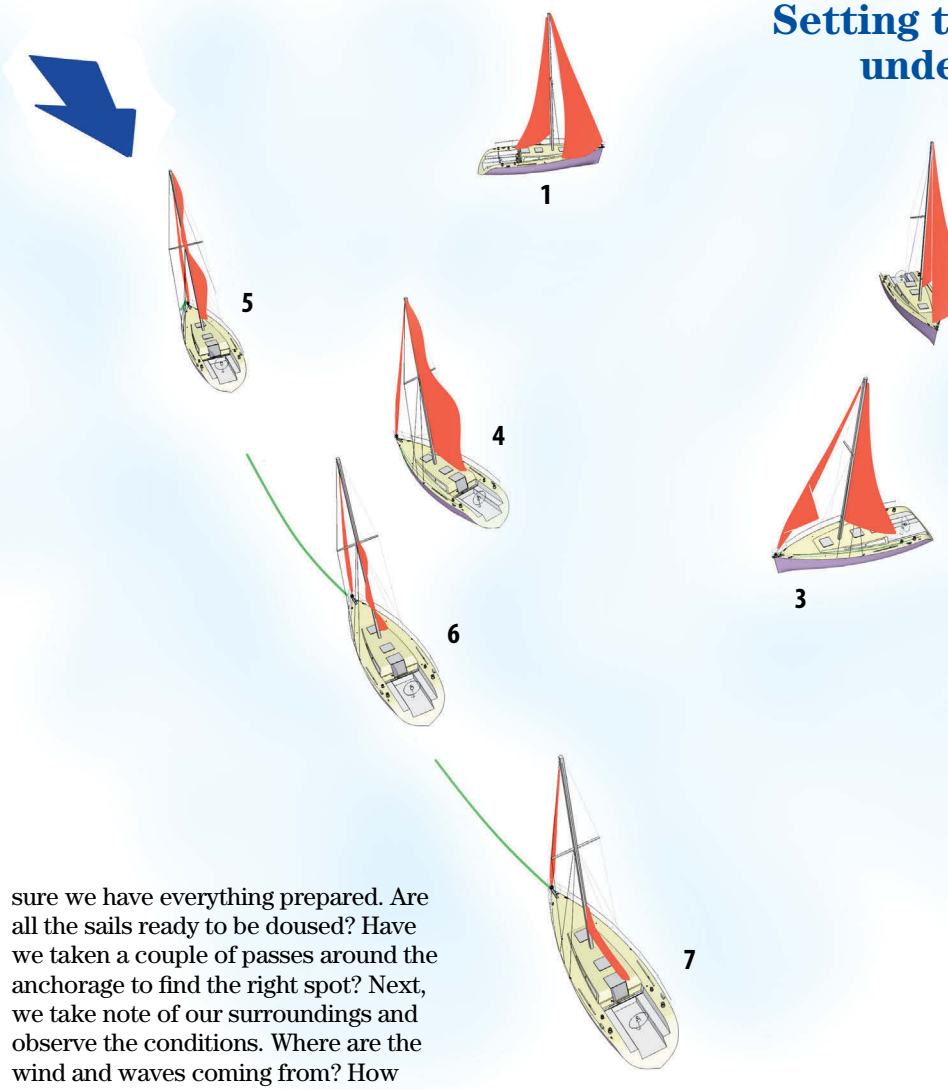
After that incident, we were sufficiently motivated to invest a little time in practicing these skills. In fact, we now make anchoring under sail a part of our regular sailing routine, though always with the engine on so we can quickly bail out if the situation gets hairy. Along the way we've learned a few things, and have developed routines that work well for us when setting or getting off the hook under sail. Other sailors on other boats might need a different approach, so we recommend all sailors experiment and practice to establish routines that work the best in a variety of situations.

Before getting into the mechanics of how we anchor under sail, I want to call out three hard-won lessons that make all the difference for us: slow down, observe the conditions, and discuss the game plan. Whether sailing on or off the anchor, we take our time to make

When setting or raising the anchor under sail, planning and teamwork are key. Fiona, upper left, sails *MonArk* slowly up to the chosen drop location, clear of other boats, lower left, while Robin readies the anchor and windlass, at right above.

an engine

Setting the anchor under sail



ILLUSTRATIONS BY ROBIN URQUHART

sure we have everything prepared. Are all the sails ready to be doused? Have we taken a couple of passes around the anchorage to find the right spot? Next, we take note of our surroundings and observe the conditions. Where are the wind and waves coming from? How much water do we have under the keel? Is there a current? Where are the potential hazards? Lastly, we huddle up as a crew and discuss the game plan. Are we both clear on the plan, as well as on the backup plans and the role they will play before we commit? It's tempting to rush (especially when it feels like the whole anchorage is watching), but a bit of planning and communicating makes things go a lot smoother.

Anchoring under sail

To select a good spot to drop the anchor, we sail slowly around the anchorage a couple of times to get a sense of the conditions, note the locations of other boats and their anchors, and plan our approach.

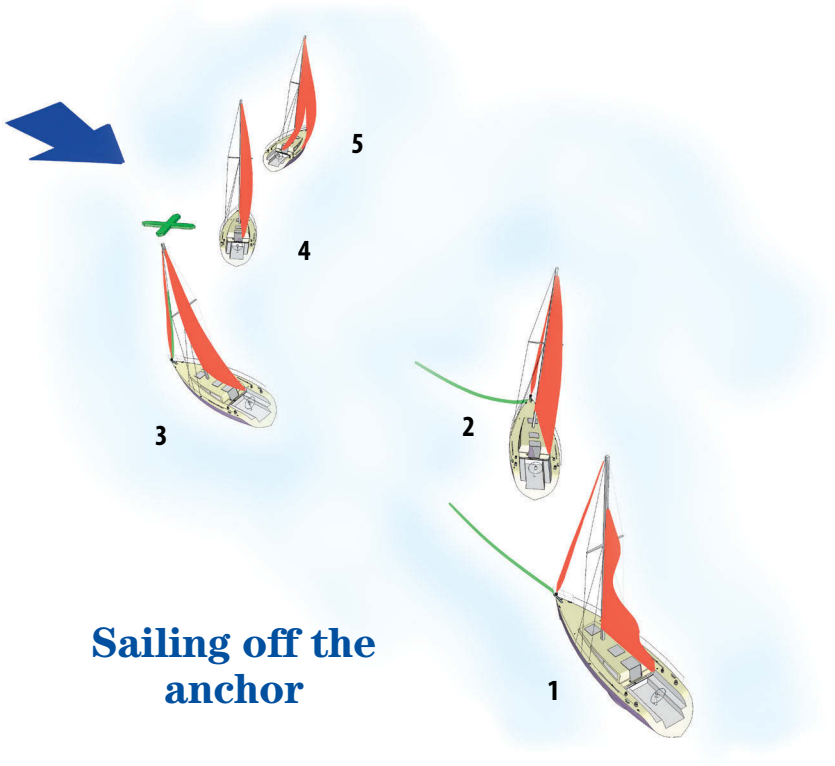
Making the approach – Having experimented with different sail plans, we find anchoring under main alone works best for us as it's usually just the two of us on board. We learned early on that our fin-keeled, sloop-rigged boat has a tendency to fall off broadside to the wind after it loses forward way and drifts back as we set the anchor. If she falls far enough off, the boom will lie against the shrouds, allowing the main to fill and send the boat sailing off its anchor. That's not a lot of fun in a crowded anchorage in a 30-knot wind — as we can attest from experience! Aware of this tendency, we get the main down quickly.

A full-keeled boat might not have the same issue, and on a ketch or a yawl the mizzen can be left up to act as a wind rudder to hold the bow into the wind. One technique does not work for every boat and crew.

As we approach the drop location, I furl the headsail from the cockpit to slow the boat (3). I then bring the boat up into the wind and luff the main (4). If the boat has too much speed and appears likely to overshoot the intended mark, my husband, Robin, (at the bow) holds the boom to windward, backing the sail to put on the brakes.

Setting the anchor – As soon as the boat is no longer moving forward, Robin drops the anchor (5) and, as we drift backward, slowly pays out chain until the scope is 3:1. He keeps a very slight tension on the rode as he deploys it, using the resistance of the anchor and chain to keep the bow into the wind. In a light breeze with no current, I'll go on deck and back the mainsail to help push the boat sternward. Once Robin feels a strong tug indicating the anchor has dug in, he cleats off the rode and comes aft to help me bring down the mainsail (6). In situations where the wind or current is strong, he will pay out additional rode (up to 5:1) before coming aft to help with the main.

Striking the mainsail – Together, we quickly drop the luffing mainsail and tie it to the boom. Once that's done, Robin pays out the remaining scope and we wait for the boat to settle with her bow pointing into the wind. We then put our sail away properly (7).



Sailing off the anchor

Sailing off the anchor

In preparation for sailing off the anchor, we first raise the main and prepare the sheets and furling line for the headsail so it's ready to be unfurled (1). We also look around the anchorage to determine what our favored tack will be as soon as we are off-anchor.

Sailing up to the anchor – Robin brings in the rode while I tack back and forth, beating as close to the wind (and anchor) as I can (2). As *MonArk* sails away from the chain on one tack, the tension gradually increases until it pulls her nose around into the wind. When this happens, I tack her (3). This takes tension off the rode, making it easier for Robin to pull it in.

Breaking out the anchor – Reading the markers we've attached to our chain, Robin gives me a signal once he's brought in most of the chain and is at the point of breaking the anchor out of the bottom. At this point, I place the boat on the favored tack and Robin hoists the remaining rode (4). Unfortunately, the action of breaking out the anchor sometimes brings the boat head to wind, in irons. When this happens, I release approximately 6 feet of the headsail furling line. Robin pulls the sail out by hand and holds the clew to windward to bring us back onto the favored tack while I get the leeward headsail sheet ready. Once we're on the desired tack, I sheet in the headsail and Robin hauls up the anchor (5).

As we learned from our episode in San Francisco Bay, the safest and most stress-free time to practice sailing onto and off the anchor is while the engine is still working! So get out there and practice before your engine fails. You'll earn kudos from spectators as you breeze out of the anchorage under sail. More important, you'll have the confidence to do it safely when your engine leaves you no choice.

Fiona McGlynn, a Good Old Boat *contributing editor, is cruising in the Pacific Ocean with her husband, Robin Urquhart, on their Dufour 35,* MonArk. *As this issue was going to press, they were sailing in and out of anchorages in French Polynesia. Check out Fiona and Robin's* Young & Salty *blog, youngandsalty.com, where they view sailing topics through the lens of thirty-somethings.*

Is it real? Is it laminate? No, it's paint!

BY PAUL BROGGER

Double-take "teak" deck

My good old boat is a 1979 San Juan 28, a plastic production-line IOR fin-keeler. When I had her hauled one recent fall for a multi-month stay in the local boatyard, one of my goals was to somehow improve the look of the non-skid surfaces — 11 panels of orange-peel texture molded into the fiberglass deck. They were coated with a tan finish that contrasted with the white of the surrounding margins and cabin sides. However, the tan color seemed to have been unevenly applied and had faded over large areas, revealing an underlying black that degraded the overall appearance of the boat.

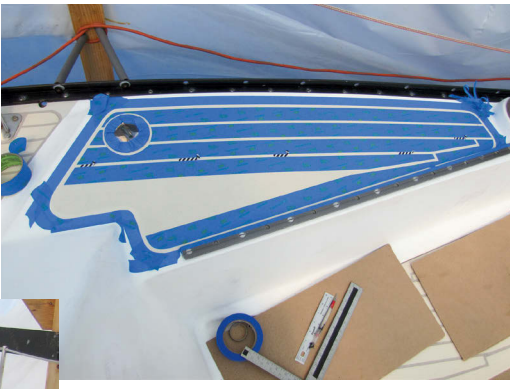
Preparation

For the primary restoration, I chose a single-part polyurethane (Pettit EZ-Poxy) in a tan color similar to the original, mixed with a flattening agent to dull the finish. After scrubbing the decks with soap and water, followed by acetone and circular strokes of a stainless-steel wire brush, I masked the perimeter of each textured panel in turn and brushed on the paint. Within a few days I had a new coat of semigloss tan on all the non-skid deck surfaces.

Before the new paint had a chance to fully harden, I'd already begun imagining how I might add darker "caulk lines" to suggest the appearance of a wooden deck. I've always loved the look of a well-done teak deck, especially the graceful sweep of the planks curving with the toerail and the sawtooth edges of a king plank along the centerline near the bow. Such a deck contributes a layer of visual complexity that I think dramatically enhances the overall beauty of a good-looking boat.

Plenty of synthetic deck-surface options are available, but all of the faux-teak deck products, never mind

A San Juan 28 with a "teak" deck must be a rare sight, main picture, but Paul needed to do something about the worn non-skid, at right, so why not make it special?



Instead of saws and chisels, Paul used masking tape and a craft knife to shape his decking, at left. On discovering the cabintop was not symmetrical, below, Paul used planks of different widths to make the pattern look symmetrical. The top of the cockpit coaming, at right, is a compact example of his technique.

genuine teak, have one major drawback: high cost. Fortunately, being recently retired, I happen to have time to spare and an open schedule, so I decided to see what I could accomplish with a little paint.

Color

I wanted a contrasting color for my faux caulk lines, but I worried that the obvious choice — polysulphide black — would be a bit too harsh-looking and perhaps uncomfortably hot for my granddaughters' little feet on sunny days, so I chose a medium brown.

I started small, experimenting first on the anchor-well cover. On a sunny afternoon I measured the painted triangular cover and laid down masking tape to reveal a simple design of caulk lines, which I painted with medium brown. When I removed the tape, I was more than pleased with the result. It then dawned on me that I'd begun just the first phase of an enormous project. I wouldn't fully appreciate the scope of that effort until weeks later!

Layout

To simplify laying out the planks, I decided that their width would be determined by the width of the tape I chose to use. From among the various widths offered at the local big-box home-improvement stores, I selected 1.41-inch (36mm) masking tape for the planks, as anything narrower or wider seemed wrong for the appearance I hoped to achieve. (The handsome teak deck on a ketch that happened then to be in the boatyard sported planks about 1.25 inches in width.) In addition, the 1.41-inch-wide masking tape is available in several types — more detail on that later. For my wider king planks and some margins, I simply laid two strips of my standard tape side by side.

I used ¼-inch-wide craft tape as a spacer to separate each "plank" from its neighbors. I found this tape in a craft store and at an office-supplies outlet. I saw ⅛-inch tape on the shelf, but I felt it was too narrow. (I think 3/16-inch tape would have been ideal, but I couldn't find any locally.)

One key practical aspect of the layout of actual wooden decks and, I think, crucial to the appeal of a wooden deck's appearance, is the shipwright's practice of "nibbing," or notching planks that join at narrow angles. Of course, on a painted deck, simulating nibbing would involve some extra effort while serving no practical purpose, but I hoped it would enhance the visual interest of the result. Indeed, in several areas (including in and around the cockpit and on the companionway sea hood) I chose to angle my planks rather than simply lay them in a more obvious fore-and-aft orientation. This required more nibbing in those areas, emphasizing its visual contribution.

Painting

When taping, I realized that painting the caulk lines was going to be at least a two-step process. I found this to be vital.

Especially on textured non-skid surfaces, it seemed there was no way to completely seal the many and lengthy edges using tape alone, and this was so regardless of the type of tape I tried. So, for my first step, with a very wet brush, I flooded all the masked edges with the background (plank) color. This did an amazing job of filling and sealing the voids and spaces where I didn't want my caulk color to bleed.

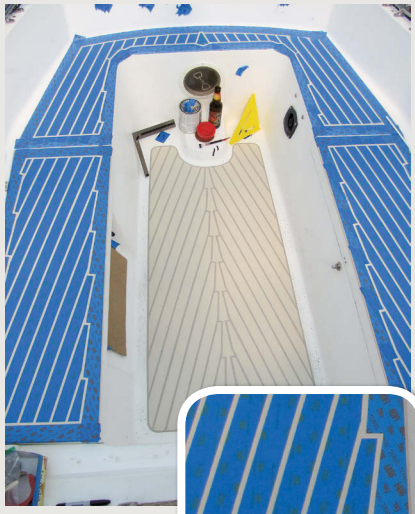
After painting the caulk lines with the plank color and letting them dry (or at least nearly so), I went over them with the darker color. Once that coat was at least tacky (patience is required here), taking up the masking tape left amazingly crisp lines almost everywhere.

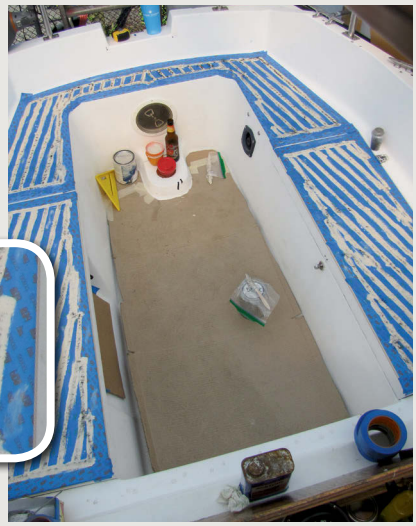
Touch-up

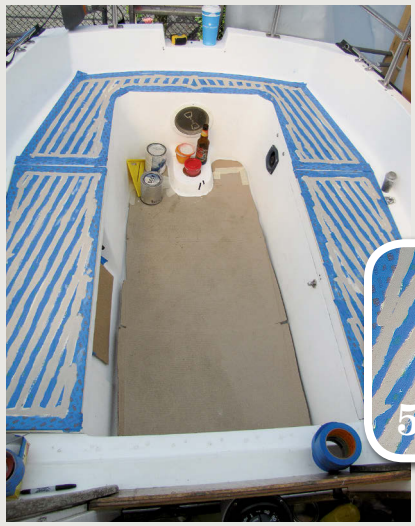
Even with my diligent attention to base-color repainting, my darker caulk color did bleed under the masking tape in some places. Fortunately, these flaws were easy to fix. After a panel was dry, I had no trouble going over it with a small detail brush, touching up the planks or caulk lines as needed.

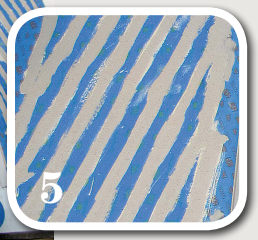
Also, perhaps due to inconsistent preparation, my background color pulled away from the deck in a few

Painting the cockpit seats, step by step









1. After painting the cockpit seats all over with the plank color, Paul masked the perimeter with his wider tape to make the margin boards.
2. He followed up by laying masks for the planks.
3. Using a carpenter's square and a craft knife, he nibbed the intersections where the planks met the perimeter tape.
4. He then painted the caulk lines with the plank color to back-fill under the tape and sprinkled black non-skid grit on the wet paint.
5. He finished by painting over the caulk lines and grit with the darker caulk color.
6. Removing the masking tape revealed the "teak" deck.

spots when I removed the plank masks. In those areas, I gave the plank another quick scrub with acetone and a small stainless-steel wire brush before touching up.

Non-skid

Throughout the cockpit area, I used a salt shaker to sprinkle sandblasting grit along the caulk lines while the first light-color coat was still wet. The subsequent coat of caulk color sealed that grit into the surface for a good non-skid texture. (To keep loose grit out of my caulk-color paint, I kept a small amount of that paint in a separate container for use in finishing the grit-treated lines.)

Beyond the cockpit, I planned to assess later the need to apply any paint-and-grit non-skid. Since launching, a couple of wet, slippery trips forward have suggested I have yet more non-skid work to do.

Laying out curves

As some of the photos show, I used short lengths of ¼-inch craft tape to establish the separation of my planks (that is, the width of the caulk lines). For relatively straight runs, a 1-inch strip of ¼-inch craft tape placed every 18 inches or so was enough to let me easily lay the planks parallel while maintaining the desired separation. (I folded over one end of each short strip of craft tape to simplify taking up the strips and relocating them for masking subsequent areas.)

Amidships, where my planks curve to follow the toerail, closer placement of those craft-tape strips helped me to lay down smoother arcs with consistent spacing. (In retrospect, I wish I'd used even more of the spacing strips than I did, as I can now discern some occasional straight-ish segments along the sections of my painted planks where they curve the most.)

Working on a masked deck

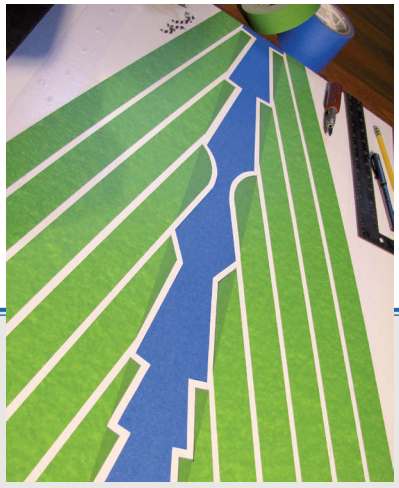
Especially with the narrow, slanted sidedecks I found myself crawling all over my mask lines even as I was laying them down. After just a little traffic, some of the edges began to wear and curl away from where I wanted them. With my boat on the hard and no scaffolding, there seemed no way to avoid this. The best I could do was wear clean soft knee pads, move gently, and tread on the tape as little as possible.

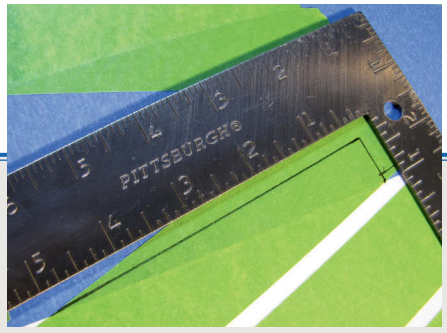
Indeed, even initial adhesion of the masking tape was at times problematic on the high-traffic sidedecks. I eventually made it routine to give the painted areas and gelcoat margins a quick gentle wipe-down with acetone, to clean the surfaces and prepare them before laying out the masking tape.

Types of masking tape

At the local home-improvement stores I found several styles of masking tape, and I tried most of them. By the time I was done, I was using the semi-translucent 3M 2080EL in a wider style over tight corners, as its see-through quality let me more easily cut the tightly rounded corner arcs with my razor knife. I also learned to use styles labeled "safe release" along the panel edges, where I was applying tape to the white gelcoat. Early on, I found that tiny circular bits of my boat's aging gelcoat tended to pull away in some areas, most noticeably along the side edges of the cockpit sole, leaving me with several new and different resurfacing projects.

By the time I was working on my last non-skid areas, I had decided the older-style tapes, ScotchBlue





Where planks would meet at an acute angle, I laid a small carpenter's square over the intersected edge. I placed the square such that the inner ½-inch mark on its shorter leg coincided with the outer of the two intersecting tape edges, then rotated the square about that point until the inner edge of its long leg met the other intersecting tape edge. After marking (or cutting) the plank's right-angle end, I slid the square parallel to its previous position to establish ¼-inch gaps along both new edges and marked or cut the notch in the intersected board.

Nibbing variations –PB

A search on "king plank layout" on the internet and a walk through a marina will make it clear that nibbing may be implemented in a variety of styles. When working in wood, nibbing avoids ending the planks in sharp narrow points that have a tendency to split and are difficult to fasten securely.

I mocked up different styles on a painted board, with the king plank blue and the angled planks green. The outermost planks simply run off the end of the board.

The next two plank pairs are nibbed with the relatively simple ½-inch right-angle notch that I used on my boat.

The fourth pair illustrates a style I'd seen on a teak deck at the boatyard, with a circular termination for each plank.

The fifth pair of planks is notched using an obtuse angle instead of the right angle.

Each of the last pair of planks is double-notched, with two smaller nibs for each plank.

When using masking tape and paint, styles need not be limited to planks and their intersections; nor even to only two colors. Designs are limited only by the imagination and patience of the painter.

Original painter's tape and the traditional off-white or tan-colored tape, performed best for plank masks. Either had enough stretch that I could lay down a gentle curve and, most important, a strong-enough adhesive to stay down overnight and in warm weather. The blue contrasted best with my plank color, so that is what I used for most of my photos, but the less-expensive tan stuff did fine too.

Mind the tape width!

Toward the end of my project, I found things were substantially out of line where I was masking the foredeck near the cabin. I was puzzled until I realized that the roll of tape I was using was actually 1.5 inches wide, not 1.41 inches. The accumulated error had reached a point that I decided to rip off and start over my layout on the port sidedeck, a significant loss of time and material.

Asymmetry in the deck

Even with a consistent tape width, at several points my plank and caulk lines didn't exactly match port and starboard, and this quickly became noticeable in places where differences caused obvious problems with visual symmetry. Such places included at the mast step, on the cabintop to either side of the fore hatch, and where the inward-progressing plank lines met the center king plank on the foredeck. Careful measurements revealed that, despite the production-line origin of my boat's deck and cabin, the structure wasn't perfectly symmetrical side-to-side, and I was forced to make subtle adjustments in my layout.

In most of these cases, I chose to make small increases or decreases in the plank widths, such that the eventual plank-and-caulk pattern would appear symmetrical (or more nearly so) about those fixed locations. Happily, in the process of making these subtle adjustments, my roll of 1.5-inch tape became a valuable asset. When I needed to make up for what appeared to be more space on one side than on the other, I laid several slightly wider planks to bring things into harmony.

Paint-drying times

Starting out in cooler weather, and working in the cockpit first, I had the opportunity to worry that maybe the whole idea of painting lines on decks was a bad one. I was laying several thick layers of polyurethane one upon the other without giving each layer adequate drying time. While simply climbing in and out of the cockpit, I was smearing and peeling my non-skid and caulk lines with alarming ease. But time and warmer days had a way of sorting that out and, with fully cured paint and a season of use now behind me, I'm confident that my new deck treatment is very durable.

Tape-adhesive residue

Although the masking tape seemed to have come away clean in most areas, some dirty-looking and gooey lines and spots appeared after only a little use. It seems that at least some of the many tapes I'd tried had left behind adhesive, which quickly caught dirt and started looking bad. (Some of the worst spots were on sidedeck planks, upon which I'd crawled fore and aft repeatedly during layout and painting.) It was nothing that a little acetone and paper towel couldn't solve, but much more of this cleanup was necessary than I would ever have suspected beforehand.

Conclusion

On launch day, I was genuinely astonished at the degree to which the new deck treatment had improved the overall appearance of the boat, and a full season of active use has only enhanced my satisfaction with my effort. Beyond the improved non-skid and a re-sealed cockpit sole, the entire boat is a bit more pleasing to the eye.

Despite its share of cosmetic flaws, I have received many compliments on her appearance, some of which have come from people who, I believe, don't realize precisely what it is that makes the boat stand out for them. Naturally I'm biased, but I think the deck patterning is a subtle but significant addition to the overall presence of what would otherwise be just another fiberglass sailboat.

Paul Brogger spends most of his retiree's spare time sailing his San Juan 28, Mid-Life Cruises, *out of — and back to — Olympia, Washington. Occasionally, he works on her some as well. He's particularly proud of his 40-year-old patched-up sails, because he does the patching himself.*

When Christmas came to *Christmas*

A beloved family member receives a whole new cockpit

BY TOM YOUNG

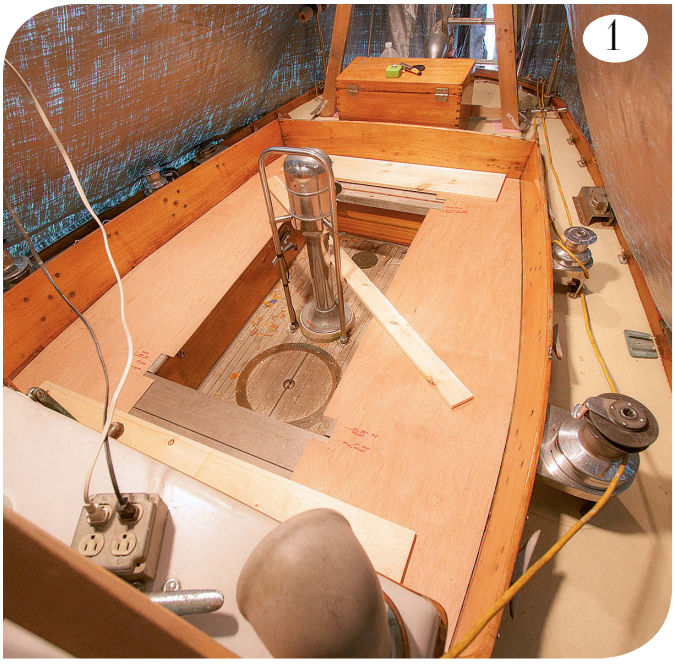
Our 1961 Alden Challenger yawl, *Christmas*, has brought us joy season after season for many years. She is one of 53 Alden Challengers built in the early 1960s. Her hull and deck are fiberglass, but the remainder of the boat, including the cockpit, was hand-crafted in wood. After 54 years, her cockpit was used up. I'd made repairs, added patches, and built supports under the sagging sole, but wooden plugs were falling out of thinning decking and nearly every inch underfoot was spongy. A good rainstorm would soak the insides of the cockpit lockers, drip through the bridge deck into the engine compartment and galley, and often fill the deep bilge.

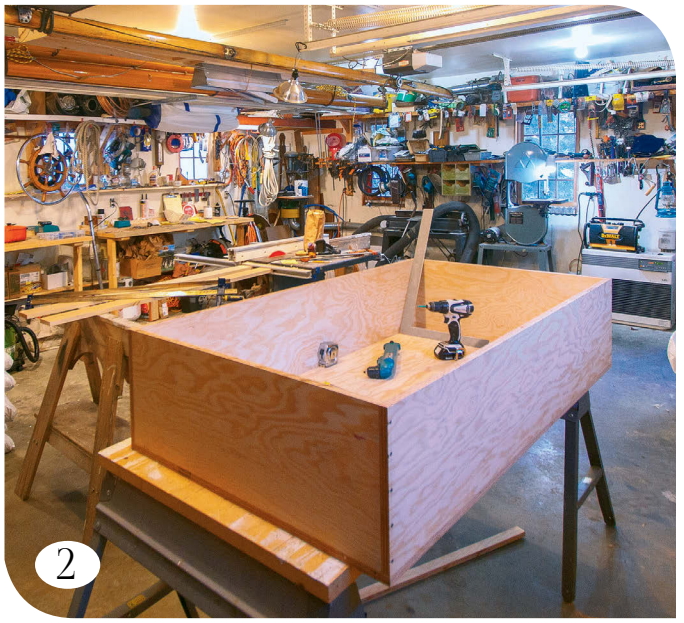
In the spring of 2016, just weeks before launch, I started ripping the old cockpit out of the boat. However, this drastic step wasn't the beginning. I had started this project months before. While *Christmas* sat under a snow-covered tarp on the coast of Maine, I planned to build a new cockpit for her — off the boat.

The new cockpit had to be strong enough to stand alone while it was being built and also when it was later transported and installed in the boat. It had to be stronger than the original that had been "stick built" in place.

After many seasons of use, I had some changes to make. Among them, I would fiberglass and paint the sides of the cockpit well to make maintenance easier.

The first step was to create a pattern from the old cockpit and accurately record all the dimensions (photo 1).

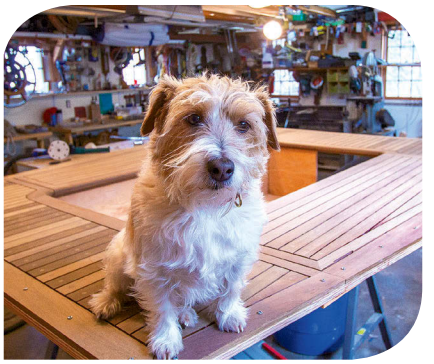


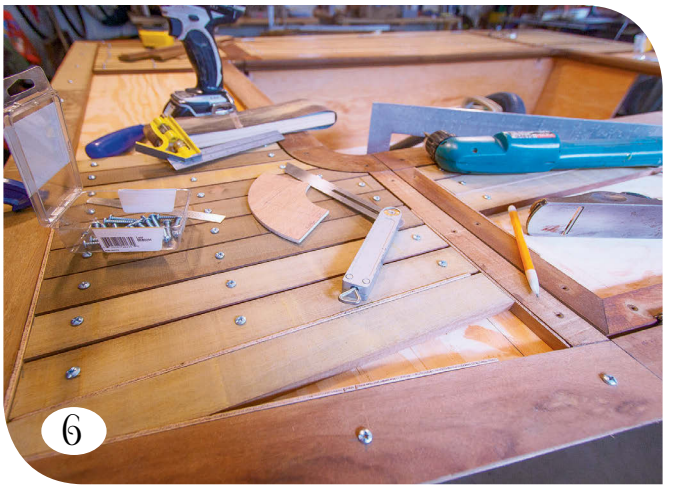


As snow was flying outside, I started building the new cockpit well in my warm shop (photo 2). Using ¾-inch marine-grade fir plywood, I constructed the well to the same dimensions as the original.

Next, I built the seat/bridge deck level to the exact dimensions of the pattern (photo 3).

I changed the shape of the locker openings, making them wider at the forward end to allow easier access to the huge lockers, and made the perimeter drain channels wider and deeper (photo 4), to improve drainage, and encapsulated them in epoxy. These channels also provide solid support for the hatch lids, which are working platforms when sailing.





For the trim and the decking, I used ipe, an extremely hard, rot-resistant tropical hardwood. It's a bit more difficult to work with than teak, but is one-third the price.

To frame the decking, I milled a wide bullnose for the inboard trim around the well and a wide decking board to go around the outside margin (photo 5).

Making a real wood-strip deck was a lengthy process, but its unique qualities and appearance were worth the effort. I milled 1½ x ½-inch stock for the decking. The narrow strips contrast with the wider frame and will be more stable with less movement than heavier stock.

I spaced the decking strips ⅛ inch apart and fixed them in position with pan head screws (photo 6). I then removed the screws, brushed slightly thickened epoxy liberally on both the plywood and the decking, and refastened the decking to "clamp" it while the epoxy cured.


7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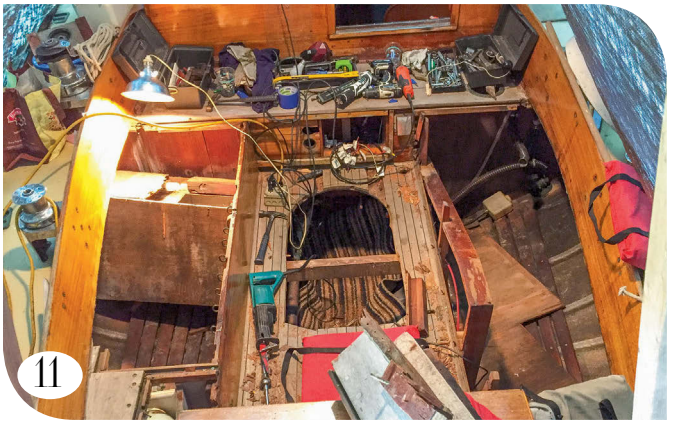
When the epoxy had set, I removed the screws, counterbored their pilot holes the full depth of the decking, and set solid wooden plugs into the holes with epoxy (photo 7). This left no fasteners in the deck (photo 8), so the cockpit will require little maintenance and should last a long, long time.

After finishing the decking on the seats and bridge deck, I took out the plywood subsole to deck and caulk it (photo 9). While the cockpit sole was on the sawhorses, I installed the steering and linkage, the original bronze access hatch, and the scuppers.

I bonded the completed sole, now stronger than the original, into the cockpit well with epoxy (photo 10).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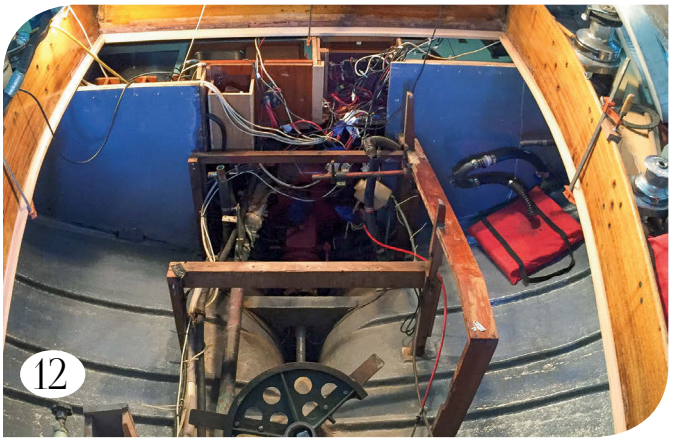

12

By the time the new cockpit was ready to go into the boat, spring had arrived and, with it, warmer temperatures. It was now time to demolish the old cockpit (photo 11).

Removing the old cockpit gave me access to paint the hull interior and reglass and refasten the support posts and beams for the cockpit well (photo 12).

The new cockpit, like the original, would be fastened to the coamings, which are through-bolted to the deck, and to the aft end of the cabin trunk. The well is also supported by six posts and three beams.

Now came the day of reckoning — installation day! As the travel lift maneuvered the cockpit toward *Christmas*, a good (and trusted) friend guided it in for the landing while I snapped photos (photo 13).

A perfect fit! I was pleased to see the well resting exactly on the support beams beneath the sole (photo 14). An hour later, I had fastened the exposed cockpit flange with screws and epoxy to the laminated mating flange. Every inch was as solid underfoot as Maine granite. I was now ready to install the deck margin boards and caulk the perimeter.

Then the details . . . I installed new cedar ceiling in the lockers (photo 15). The larger lids made that job easier and give me better access to the engine.

I reinstalled the old gauges — a nice detail from a bygone era — in a newly built engine panel of ¼-inch Lexan that I back-painted black (photo 16).

Classic and comfortable

The Alden Challenger's design, like that of many CCA-era boats, has proven to be timeless. That's not due solely to its beautiful form but to its time-tested function as well. Alden's cockpit is brilliant, as my family can attest after 15 years of coastal sailing in *Christmas*. It's huge. Everyone can find a comfortable spot whether we're sailing down the coast or anchored in a quiet cove, and cavernous storage beneath the cockpit accommodates all the gear a family needs, with room to spare. That's a simple formula that isn't easy to find in newer boats.

When it came time to replace the cockpit, I studied hundreds of boats (it's my hobby) for cockpit details, and borrowed some contemporary design ideas that I hope make the new cockpit a lttle more stylish than the original. Using modern materials and construction methods not available 50 years ago, I was able to build a stronger, drier cockpit while updating our Challenger's looks in the process. Wood, with its unique qualities, will never go out of style.

After a full season's use, the new cockpit is turning a pleasing silver-gray. Sitting in it at dawn with a cup of coffee, I reflect on how pleasing it is to my eye and how our use of *Christmas* has been enhanced. I think this new cockpit is going to work out very well.

Tom Young, a lifelong sailor, is a design-builder. When not restoring old homes on the coast of Maine, Tom and his family — wife, Mary Anne; now-adult children, Mary Jane and Thomas; and a couple of dogs — sail the world-class coast of Maine and New England every season. Tom cares for their 1961 Alden Challenger, Christmas, *with a passion.*

Come rain, come

A cannibalized cockpit enclosure provides versatile shelter

BY JENNIFER BAGLEY

How much shelter from the weather does a sailing crew need? Some sailors look at their bare unprotected cockpits and add a dodger, then a bimini, and then the whole caboodle, as Dale Bagnell described in the July 2016 issue of *Good Old Boat* (see "Cockpit Canvas One Kit at a Time").

We did the opposite. We subtracted.

When we bought our Caliber 38, *Catamount*, 12 years ago, it came with a dodger and full cockpit enclosure. We are not full-enclosure sailors. We like to see our sails, feel the wind on our faces, and anticipate the waves, and we don't mind donning rain gear when necessary. We feel cramped and confined in a full enclosure and, apart from that, we don't like what it does to the lines of a sailboat, so we dismantled it. While we discarded much of the stainless-steel framing that cluttered the cockpit area, ever frugal, we kept many of the other parts. As we used the boat and discovered how different weather conditions affected our comfort in the cockpit, those parts came in useful for making adaptations to suit a variety of situations.

Rain fly – Our first obvious need was for a rain fly. We'd kept the awning that zipped onto the aft end of the dodger and served well in most rainy conditions. We also had enough of the original stainless-steel tubing to support it.

For the aft end of the fly, we fitted a bar (made of the tubing) horizontally between the boat's twin backstays. The forward end is supported by a hoop that hinges on the cockpit coaming, and we added a third overhead bar across the middle section. We altered the aft ends of the awning to accommodate these new supports. So we could dismantle the apparatus and stow it on board, we cut all three overhead tubes in half. Dowels fitted into one cut end of each tube allow us to reconnect them.

Ventilator – Variation two evolved on a particularly hot day. Motorsailing in searing heat, we realized we could unzip the front portion of the awning from the dodger, flip that section back on itself, and attach the flipped-back ends with snaps to the side support bars. We secured the leading edge of the bimini to the handles on the outside of the dodger with webbing. The result? We were still shaded, but enjoyed a breeze and a better view of the sails and our surroundings.

Rain shield – Variation three was born after a hard rain while at anchor. The awning alone was not keeping us dry when rain blew in from the sides. Where were those original rain windows anyway? We'd luckily saved two of them, the ones that connect to the zippers on either side of the dodger.

We discovered that, when those two windows were up, we could still make good use of the cockpit during a rainstorm. At anchor, the bow faces into the wind and the protection the windows afforded was enough for us. The three overhead tubing pieces are bowed, so the awning sheds rainwater and does

With the dodger, awning, and rain fly set up, top left, *Catamount* is well shaded from the sun. Zipping the rain shields to the dodger and awning keeps most of the cockpit dry in a rainstorm, above.

sun, come biting bugs

When Jennifer and Fred don't feel the need to be shaded from the sun, they secure the entire awning, in a special cover, to the backstays, at left. Setting up the awning but folding the front part back on itself, at right, lets in the breeze and allows a better view of the sails.

not allow puddles to form. And those windows also keep us warmer on cold days at anchor. When we don't need them, they unzip easily and stow well in our forward shower.

Open air – Variation four allows us to quickly adapt to warm days. Because the awning's main supports are attached to the cockpit coaming with a hinged fitting, we discovered we could flip the whole thing aft and secure it to the horizontal bar attached to the backstays. At first we tied it with ugly bungees. That arrangement soon gave way to a new Sunbrella cover we designed that secures the canvas and its supports to the backstays. We can fold it all back or reassemble it in a few minutes while under way.

Shade from the side – The impetus for variation five was the *really* hot days when the late-afternoon sun poured into one side of the cockpit. A roll of brightly striped Sunbrella made a great separate sun awning that zips into the existing zippers on the edges of the original awning. Two straps secure it outside the lifelines and down to the toerail. It zips to either side, so we find ourselves using it often to keep the cockpit cool.

Screens – And mosquitoes? Wanting to stay outside in the evening despite those pesky critters, we came up with variation six. Having kept all the extra zippers from the full enclosure we had rejected all those years ago, mates to the zippers still on the original awning, we were able to sew netting to them and enclose the entire cockpit. We added a zippered door so we could get out to check the anchor or reach the barbecue. Secure and unbitten inside, we find it delightful to sit out on a full-moon evening and count the mosquitoes buzzing on the outside of our screens. The whole netting arrangement fits into one small bag, dismantles in minutes, and stows easily below.

A brightly colored piece of Sunbrella blocks the sun when it's low and to one side, upper left. An all-around insect screen keeps the biting bugs at bay, at left.

Six shelters from one

So, over 12 years, our original cockpit enclosure has now morphed into six different flexible variations: rain awning, bimini, rain-window protection, extra sunshade for either side, mosquito protection, or an open cockpit with the whole awning apparatus secure against the backstays. Our subtraction evolved into addition after all.

We appreciate the high quality of the original materials and the skill used in making the full enclosure, and are glad we were able to render all our variations easy to convert and store. We sail most often with the awning secured aft so we can see our sails, feel the wind on our faces, and enjoy sailing the old-fashioned way.

Jennifer Bagley and her husband, Fred, live in Vermont but sail the Upper Great Lakes out of Cheboygan, Michigan, near the Mackinac Bridge. They primarily cruise Georgian Bay, the North Channel, and Lake Superior on their Caliber 38, Catamount.

Lessons from a rigging

Well-drilled junior sailors help save a mast

BY TOM ALLEY

To the tune of the *Beverly Hillbillies* theme song . . .

Let me tell you a little story 'bout an engineer named Tom.
Had a little boat that he sailed upon the pond.
Then one day he was going for a cruise,
And what happened next left a pretty nasty bruise!

Figuratively, that is.
Indelible. Unforgettable.

Well, Captain told the crew, "Kids, get away from there!"
The big loud noise surely gave them all a scare!
And when the backstay started sagging toward the deck,
Captain then said, "Oh! What the heck?"

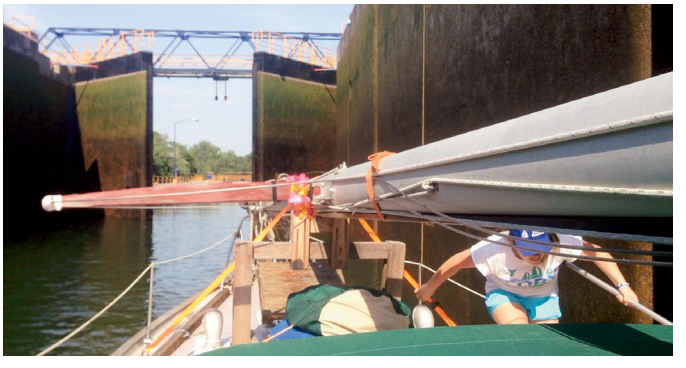
In sailing terms, that is.
With "sentence enhancers."

It was just past two in the afternoon on Sunday, July 3. The sun was shining brightly and a few picturesque fluffy white clouds were drifting across the deep blue sky. The heat wave of the prior days had broken with the passage of a cold front and the temperature and humidity had both dropped to comfortable levels. A westerly wind was blowing at 15 to 18 knots and the waves on Lake Ontario had slowly been building to 3 to 4 feet throughout the day. In other words, it was a near-perfect day for *Tomfoolery*, our 1965 Alberg 35.

We had just tacked onto starboard to clear the shoals off the southern end of Grenadier Island when I heard a loud BANG! The backstay went slack and nearly laid down in the cockpit. Our foresail, furler, and forestay went off to leeward, attached only to the masthead and the furling line.

At that moment, all I could think was, "Oh, no! We're going to lose the mast . . ."

Motoring against a headwind on the St. Lawrence River toward Lake Ontario, *Tomfoolery*, upper two photos, and her cruising buddy, *Seek Ye 1st*, above, alternately lifted and buried their bows in building seas. The conditions were in stark contrast with those encountered while transiting the New York canal system, here at Lock CS-3 in Seneca Falls, New York, at right.



failure

Shortly before the forestay let go, *Tomfoolery* was making good progress on starboard tack under a reefed foresail, at left. The failure prompted immediate action on board, below, but *Tomfoolery* was now exposed to a lee shore on Grenadier Island.

One week earlier

On the morning of Sunday, June 26, anticipation was in the air. Aboard our fleet of two vessels, *Tomfoolery* and *Seek Ye 1st*, a 1973 Islander 36, our crews of experienced junior sailors, all high school students, were ready to depart on an adventure, from the sheltered waters of Seneca Lake, through the New York canals, and onto Lake Ontario to get a taste of voyaging on bigger water. For the boats, it would be a homecoming of sorts, as they were both veterans of those waters.

With masts unstepped and secured on the decks, and with both vessels laden with as many provisions as could be stored, we set off midmorning. Two days later, our small fleet reached the port of Oswego, New York. The weather had been good and the canal traffic was light. The next day, we stepped our masts, bent on the sails, and set out onto the "big lake" for a cruise, first to Sodus Bay and then to the St. Lawrence River and the Thousand Islands. The cruise was everything we'd expected, so far.

Sunday, July 3

We left Clayton, New York, shortly after 0900 and motored southwest on the St. Lawrence toward Lake Ontario, where we intended to sail south and stop for the night in Sackets Harbor before heading home the following day. The wind was right on our nose as we motored up the river toward the lake. As we got closer to the river mouth, the waves began to grow in size, making for some dramatic photo opportunities.

Upon leaving the river and entering the lake, we bore off a bit to the south. Both *Tomfoolery* and *Seek Ye 1st* sailed under jib alone to reduce some of the pitching and rolling motion. We expected that we would clear the Grenadier Island Shoal in just a few hours, then enjoy a nice reach into Henderson Bay.

The loud bang that startled *Tomfoolery*'s crew later that afternoon also motivated us into action. I disengaged the autopilot and threw the helm over to point the boat down-wind, to reduce wave action and so the wind pressure on the rigging would be from astern. Training kicked in. The crew of junior sailors slacked the jibsheets to further reduce stresses on the mast, and several of them went forward to begin damage control and secure the now-flogging sail and flailing furler and forestay. While they worked, I made a radio call to *Seek Ye 1st*, sailing about a half mile from us, to inform them of our plight and to request that they stand by to assist.

The next order of business was to secure the mast to prevent it from falling over. Halyards on the forward side of the mast had become fouled during the gyrations of the forestay and foresail and were useless. Instead, the crew ran the spare main halyard forward, tying it to the anchor platform before tensioning it to minimize the mast's pumping in the waves, which by now had grown to 4 or 5 feet. Working on the narrow foredeck was a challenge, as the short-period waves caused us to repeatedly bury the bow.

With the mast secured, we attempted to snuff the foresail. This proved extremely difficult, as the furler was by this time seriously damaged and the sail, partially reefed at the time, so tangled that it could not be furled, unfurled, or lowered. Our attempts to manually rotate the entire furler assembly proved futile, as the fouled jib halyard had effectively locked the top of the furler in place. In the end, we freed up the main halyard and led it forward. Timing our movements with the waves, we attempted to wrap the halyard around the still-flogging sail and snuff it against the remains of the forestay and furler. This was marginally effective, but



***Tomfoolery*'s crew was unable to completely snuff the foresail, at left, and it made motoring to windward impossible. Halyards rigged as jury headstays, center, kept the mast intact. Removing the foresail revealed the full extent of the damage to the furler, at right.**

conditions made it impossible to get a good-enough angle to snare all of the sail.

After nearly an hour of effort, I radioed *Seek Ye 1st* to ask if they could spare someone to provide some relief to *Tomfoolery*'s exhausted crew. *Seek Ye 1st* came alongside and, using their dinghy as a floating bridge, transferred junior coach Andrea Johnson aboard. At this point, *Tomfoolery* was drifting down onto the lee shore on Grenadier Island and the depth sounder was showing less than 40 feet. Our attempt to motor to windward proved ineffective, as the partially doused headsail was acting as a brake. Furthermore, the jury rig holding up the mast was under stress from the boat's motion. We decided to retreat to the closest harbor to leeward that could provide shelter, so we turned around and headed back into the St. Lawrence River.

Three hours later, *Tomfoolery* and *Seek Ye 1st* arrived safely in Cape Vincent's harbor and tied up to the village dock. The captains and crews could breathe again!

Sunday evening

With a few hours of daylight remaining, both crews worked together to clean up the hastily made jury rigging aboard *Tomfoolery* and to see if she could be rigged sufficiently for a trip back to her home port on her own keel. Here we discovered the extent of the damage, along with what we believe to be the root cause.

It was a disheartening scene. It took almost an hour to unwrap the sail from the furler. Not one section of the furler foil had escaped damage. Each one had a twist, kink, or bend in it. At least one joint had sheared, resulting in the sail being wrapped not just in unequal amounts at different levels of the stay but also in opposite directions. The sail was ripped in several places and seriously stretched out in others.

With the sail unwrapped, how would we get it down? The upper section of the foil had a sharp bend in it right below the upper swivel, which meant the sail wasn't going to move without someone going up the mast to free it from its halyard. Given the risk of climbing a mast that was not properly supported, I could not send crew aloft with a clear conscience, so I put on my harness.

We cleared off the foredeck and freed a spinnaker halyard to use as a forestay. We led our mainsail halyard forward and cinched it tight as a backup forestay. We also removed the 15-foot, 130-pound solid-spruce boom from the mast to eliminate its tendency to pull the mast aft. This left the spare main halyard for my climb and allowed me to use the boom topping lift as a safety line. After talking through the plan with the crew, I ascended the mast.

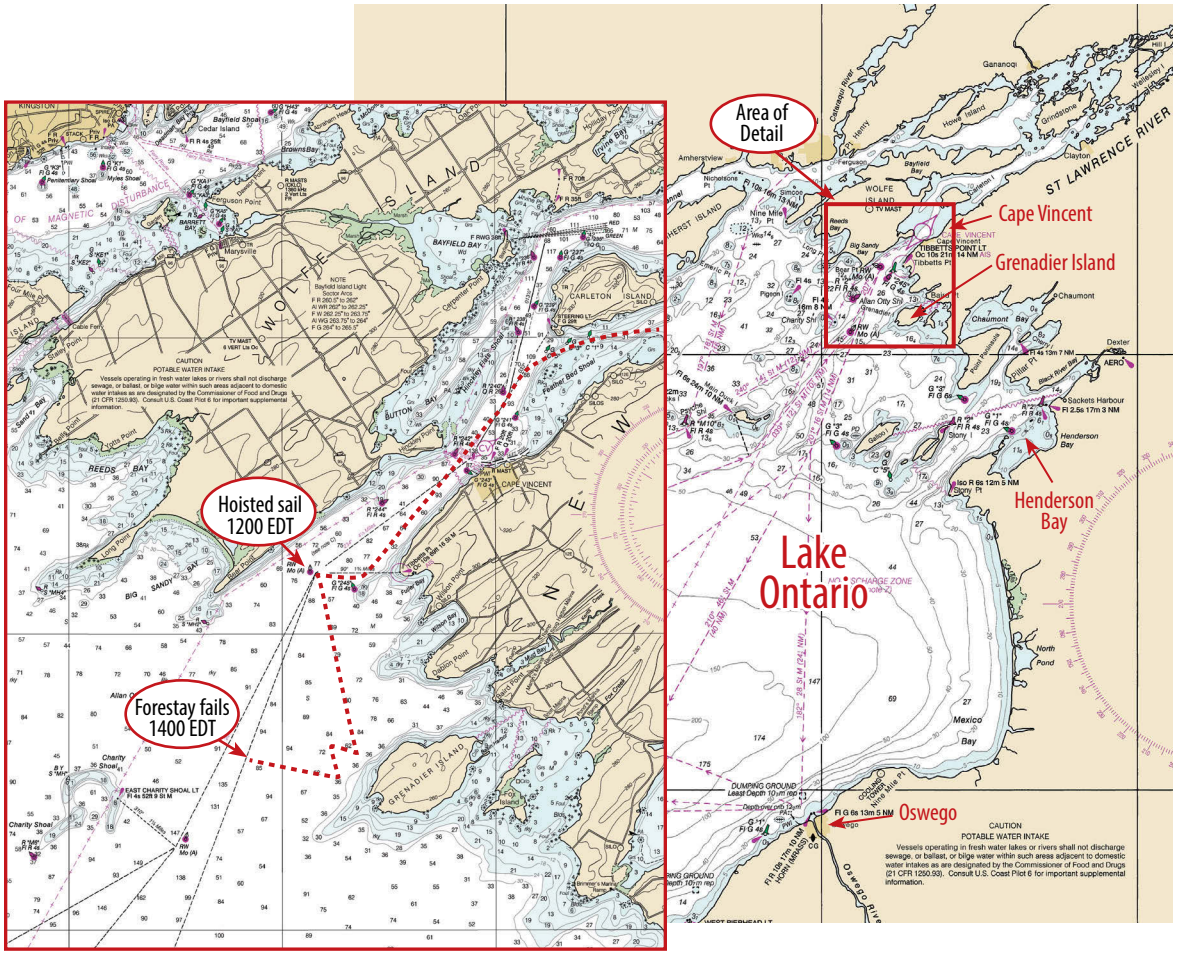
Once I was at the top, it did not take me long to detach the headsail from the swivel and help it slide down the damaged furler foils. Before descending, I retrieved the jib halyard from the swivel and pulled it down to deck level, where it could be used to help secure the mast.

With the jib and spinnaker halyards secured to the anchor platform as temporary forestays, the crew then used a short line to secure the foil-shrouded forestay to the stem chainplate to keep it from flailing around during the trip home.

The next day brought light and variable winds and waves of less than 2 feet, which made for a reasonably comfortable passage for our injured boat back to Oswego, where we took the mast down for our trip back through the New York canals to Watkins Glen.

Analysis

During the cleanup in Cape Vincent's harbor we found a curious piece of debris on deck. It was half of the clevis pin that held the forestay to the stem chainplate. There appeared to be an old fracture in the pin, just behind the cotter pin, that I judged to be due to fatigue. The stresses on the pin in wind and waves had probably continued to work the pin and propagate the crack (in the photo on page 40, different shades of darkening are visible along the fracture surface) until it fractured completely that Sunday afternoon and allowed the forestay to separate from the boat.



CHARTS COURTESY OF NOAA

With the bottom of the forestay free, the sail, foil, and forestay then flew to leeward until stopped by the furling line, still attached to the boat. A sudden load on the furler (imposed by the repeated arrested momentum of the flogging sail) probably sheared the lower joint in the furler extrusion. At this point, the lower part of the sail started to furl as the furling line unwound, while the rest of the sail tried to unfurl, causing a number of stresses in the furler and in the sail. It's likely that the torsional loads on the extrusion, combined with the whipping action of the sail in the wind and the lack of support from a taut forestay, caused the damage to the furler's foil sections.

Retrospect and conclusions

What is truly frightening about this incident is that I'd inspected the rigging the week prior when we unstepped the mast for the outbound trip in the canals. The shrouds were fine and all the clevis pins appeared to be in good condition. The photo of the broken clevis pin, however, tells a different story. The pin had begun to fail some time before, long enough for the defect to propagate and show signs of corrosion before it parted.

Ultimately, the problem was not the clevis pin, but complacency. Our sailing brethren in salt water and in areas that have year-round boating seasons have learned hard lessons about corrosion and metal fatigue and are, as a result, rigorous in their vigilance to ensure the reliability of their rigging. Living farther north, in fresh water and with low duty cycles on our boats, it's very easy for us to become complacent with these inspections.

I have made it a habit to drop the mast at least once every five years to inspect all of the rigging, and I make opportunistic inspections whenever the mast is taken down for other reasons. Nevertheless, it's still easy to overlook details, and tempting to put off maintenance until "later."

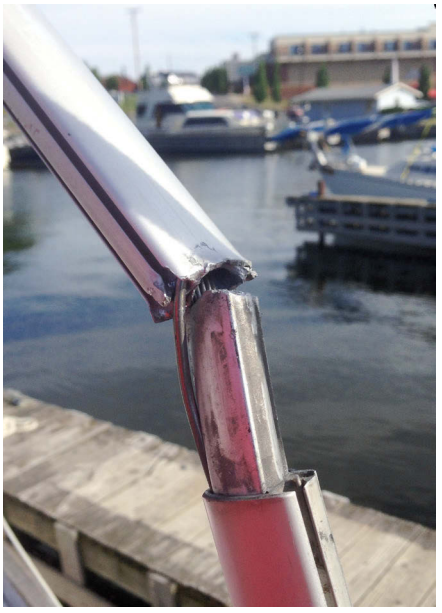
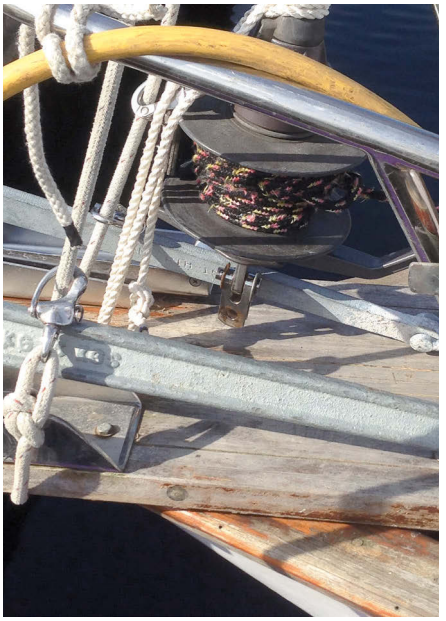
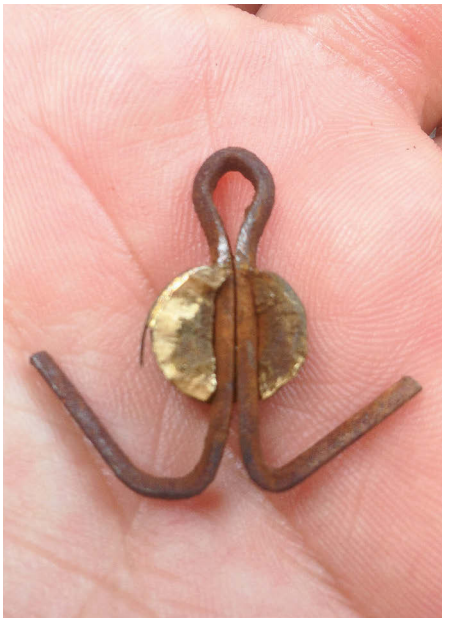
I've read numerous accounts of boat owners replacing their standing rigging every five to 10 years to offset the effects of salt water and prevent incidents like the one we just experienced. It stands to reason that freshwater sailors should do the same, but perhaps on a more appropriate schedule, say 10 to 15 years?

Our family purchased *Tomfoolery* in 1996 — 21 years ago. While we have replaced a few of the clevis pins (usually after the originals were dropped overboard during some other type of maintenance), we've never deliberately retired any component of the standing rigging. This means everything is at least 20 years old. As a result of this incident, I replaced all the clevis and cotter pins on *Tomfoolery* when we got back to our home port of Watkins Glen. The shrouds and stays will see a similar renewal in the coming year, with the old ones to be kept as spares.

Finally, the ultimate introspection: Will I take an extended trip with our junior sailors to Lake Ontario again? Absolutely — they are already talking about where to go next summer. I just hope the trip holds a little less drama next time!

Epilogue

Working for a large multinational corporation has its advantages. One is that there is lots of expertise to tap when I have a complex technical question requiring a specialist.

After the forestay parted, the violent flogging of the sail caused this joint between two sections of the furler extrusion to shear apart, at left. It was the lower clevis pin, the one that connected the forestay to the stem chainplate, that broke, center. A lucky find on deck was the piece of the clevis pin that sheared off, at right. An analysis of the pin allowed Tom to determine the possible cause of the failure.

At first I believed the cause of the clevis pin failure was metal fatigue and that I had missed seeing a crack in the pin when I last inspected it. I assumed the staining on the fracture face was due to cotter pin corrosion leaching into a crack. Metallurgical analysis of the fracture face proved otherwise. In fact, it produced a number of surprises.

First of all, it was not metal fatigue but corrosion that caused the failure. As the corrosion propagated across the pin, its structural strength lessened until it could no longer support the load and failed.

Second, the corrosion started on the inside of the clevis pin, in the hole for the cotter pin. This means the corrosion was invisible from the outside of the pin. This is why I didn't notice it when I last inspected the rigging. Note the detail of the fracture face in the photo. The darker (corroded) areas are on the inside and the outer surface has bits of bright (uncorroded) metal on it.

Finally, the composition of the pin was not bronze as I'd believed it to be. In fact, the pin is a composition not typical of any marine alloy. It is 44 percent nickel, 32 percent copper, 18 percent zinc, and 5 percent chromium.

So it appears that, aside from metal fatigue and corrosion, sailors have yet another thing to worry about, and that is whether the supplier of clevis pins is reputable. This pin came with the boat when I purchased it, so I don't know where it came from. I purchased all new pins from a known supplier and they are all marine-grade stainless steel.

I sent one of the new pins to my corporate resource for analysis and confirmed that it really is type 316 stainless steel. But type 316 stainless steel is not immune to the crevice corrosion that can lead to this kind of failure. Crevice corrosion is not always visible even with a magnifying glass, and that is a good reason to replace this kind of hardware at intervals appropriate to the waters where a boat is sailed. Don't be like me and wait for a component failure to be your signal to replace hardware!

Tom Alley and his family sail a 1965 Alberg 35 sloop, Tomfoolery, *and are active racers and cruisers with the Finger Lakes Yacht Club in Watkins Glen, New York. Tom has been a member of the U.S. Power Squadrons (USPS) 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, www.Alberg35.org. When he's not sailing, thinking about sailing, or tinkering with his boat, Tom is either scuba diving, hanging out with fellow amateur radio operators, or (as a last resort) working as an engineer to support his sailing addiction. Tom's daughter, Katie Alley, has also been published in* Good Old Boat, *most recently in the November 2016 issue.*

The "I Survived Lake Ontario" party was, from left to right, Captain Tom, Coach Andrea, Captain Mike, and junior sailors Henry, Katie, Isaac, and Maggie. Tom is holding the furling unit, which turned out to be totally destroyed. The genoa (lying on the dock) went into critical care at a local sailmaker to see if it was salvageable.

An editor speculates

by Jeremy McGeary

My first reaction on seeing Tom's photo of the broken clevis pin was that I was looking at a tensile fracture in a brittle metal. The granular appearance of the break is typical. I had seen this years before in the "let's break stuff" lab when I was studying engineering. Some years later, I witnessed its effect when a halyard winch came off the mast in my crew's hands when he was hoisting the genoa. The winch had been attached with no insulating barrier between its bronze base and the aluminum mast. Corrosion on the aluminum built up to the degree that it forced the winch base away from the mast, stretching the bolts to their breaking point.

In Tom's case, the rusted cotter pin is a clue. Even after the clevis pin broke and landed on the deck,

the cotter pin is still wedged in place, coated with rust. I surmise that this rust buildup initiated the fracture. The rusty color appears to extend into the granular areas of the broken clevis, suggesting the initial break was quite old. The shiny part of the break is where the pin finally sheared off under the sideways load from the sail in the bumpy conditions *Tomfoolery* encountered.

That the clevis pin was made of an alloy of copper and nickel, likely far more galvanically noble than the steel cotter pin, could be a contributory factor. That should only serve to emphasize the need to ensure all metal components on a boat are compatible, especially in critical systems like the rigging.

As to why such corrosion would appear on a freshwater boat, a rigging specialist I spoke to suggested that stray electrical currents might be at work, possibly as a result of aging wiring. Stray currents are hard to trace, but some of their effects can be paint bubbling around fittings on an aluminum mast, corrosion at the mast step, and corrosion in unexpected places — like a connection in the standing rigging.

Readers take to the water

Dean Raffaelli takes Charlotte Keer for an outing on Lake Huron's North Channel aboard *Rosie*, the dinghy they built in their basement. *Rosie* is tender to *Carrie Rose*, the couple's Nordic Tug 32.

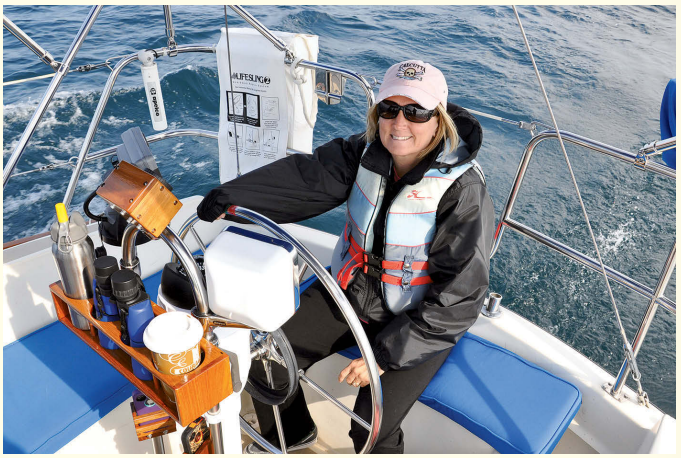
Jim Bryan is at the helm of *Money Pit*, the 1976 Tartan 30 he's owned and sailed on Lake Erie for 25 years, while his daughter Kelly keeps a lookout from the bow. His friend Ron Harrison of the Ford Yacht Club took the picture. And while we're throwing numbers around, Jim's been a *Good Old Boat* subscriber since the first issue came out in 1998!

Gregg Bruff captured this self-portrait while single-handing *Arcturus*, his and his wife's 1977 Columbia 8.3, south of Escanaba on Lake Michigan. Arcturus is a navigation star, the "red giant," the brightest star visible year-round from the Northern Hemisphere.

Pamela Hall is a happy crew aboard *CrazyCakes*, Cherie Calabrese's 1979 Intrepid 9, sailing off Sag Harbor, New York. In the background are sailing friends from the Shoreline Sailing Club.

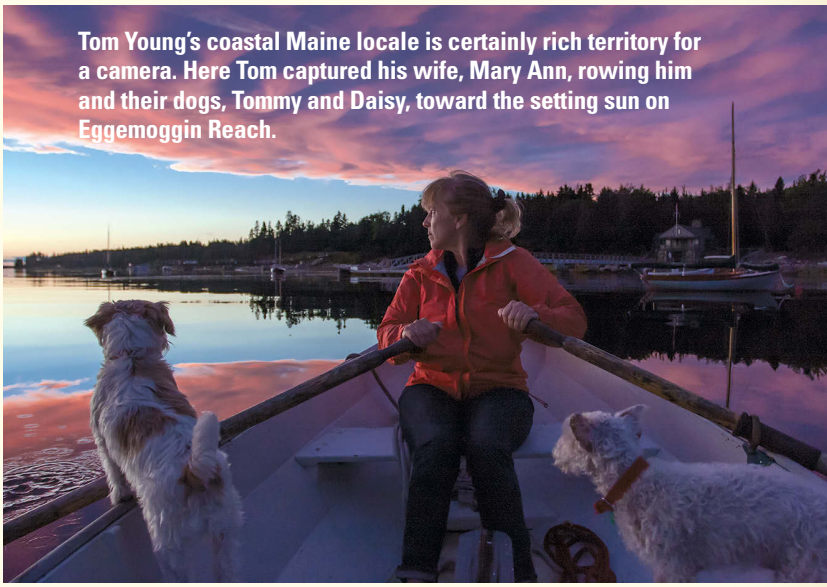
This is the view Kennedy and Renee Lewis enjoy when sailing *Solitude*, their 1981 O'Day 25, on Florida's Choctawhatchee Bay. *Solitude* is their first sailboat.

Can you guess which new-wave band's song inspired Jeff and Cindy Shutic when they named their Corbin 39 *Luff Shack*? Cindy is trimming and Jeff is at the helm as they sail off Ohio's Lorain Harbor on Lake Erie. Friend Debbie Parker captured the action.



"This was taken on our first sailing trip aboard our 1985 O'Day 30," wrote Steve Dean. He and his wife, Donna, had worked on the boat for years preparing for this day, so she is naturally all smiles at the helm as she guides *Morning Dove II* from Presque Isle to Hammond Bay on Lake Huron.

Jeff and Dawn-Marie Rudolph have paraded their 1977 Morgan Out Island ketch, *Live the Dash*, in the annual Christmas Boat Parade in St. Croix each of the past three years. Check out their Christmas tree in the dinghy.



Tom Young's coastal Maine locale is certainly rich territory for a camera. Here Tom captured his wife, Mary Ann, rowing him and their dogs, Tommy and Daisy, toward the setting sun on Eggemoggin Reach.

A keel too deep

Turning a deep-draft racer into a shoal-draft cruiser

PHOTO BY TOM WELLS

BY TOM WELLS

As we approached our retirement, Sandy and I confronted a dilemma. We had owned our Tartan 37, *Higher Porpoise*, since 1997 and had come to love the boat and her accommodations and performance, but she had a fin keel that drew 6 feet 7 inches. For cruising Southwest Florida, our destination, we needed a more reasonable draft of around 5 feet. We faced a critical choice: buy a boat with shallower draft or reduce the draft of our current boat. We considered both paths, but in the end we chose to keep and upgrade the boat we knew, and to reduce her draft.

The draft-reduction process was the final step in an extensive refit. We researched the available methods and found that, since *Higher Porpoise* had an external lead keel secured with bolts, we could replace it with an entirely new custom-designed keel.

We also found that we could have the keel cut to reduce the draft, with the lost ballast replaced by a heavier split bulb through-bolted to the remaining keel section. However, the split-bulb option would only work if the design was proper and if the cut line would be below the embedded ends of the existing keel bolts.

We began to gather the information that would tell us whether or not the keel reduction was feasible. We contacted Tartan Yachts and, through conversations and correspondence with Tim Jackett and Art Averell, located someone who had been involved in casting the fin keels all those years ago. We were able to confirm that the cut line for removing the desired 19 inches from the keel would be below the keel-bolt embedment. We also looked at the stability calculations for the boat as designed by Sparkman & Stephens, and it was apparent that additional ballast would be needed if we were to retain the boat's original righting moment and overall stiffness.

After reading several articles describing such keel-reduction projects, we elected to work with MarsKeel Technology of Burlington, Ontario. The company is a renowned leader in keel technology and we wanted to be certain we were on the right path.

Design and casting

William Souter and the staff at MarsKeel were extremely professional throughout. We provided the information they would need, including the keel-bolt depth, detailed measurements of the existing keel, and the cut-point dimensions. We produced an accurate template of the keel at the proposed cut point and sent it as an AutoCAD file for them to use as a model for casting the bulb halves. They designed the split bulb to weigh approximately 2,300 pounds, replacing and augmenting the 1,800 pounds of ballast lost in removing the bottom 19 inches of the

Cutting short the Tartan 37's deep racer/cruiser keel, top of page, and adding a lead bulb, above left, made it Florida-friendly.

PHOTOS COURTESY OF IAN GATES UNLESS OTHERWISE INDICATED

Lead is soft enough to cut with a saw, far left. After making the cut, the boatyard staff test-fit the bulb halves and drilled the holes for bolting them to the keel, at left.

original keel. The cost of the casting was higher than expected, based on what we had read about prior projects. However, that was largely due to a dramatic increase in the price of lead over the last couple of years, something that was beyond MarsKeel's control.

MarsKeel cast the bulb in two halves and shipped them to Larsen Marine in Waukegan, Illinois, where the modifications to the keel would be carried out. We bought *Higher Porpoise* at Larsen Marine in 1979, and the yard was highly recommended by fellow Tartan owners. The only missing part preventing the work from getting under way was *Higher Porpoise*. She was still at Mark Twain Lake, Missouri, where she had gone through the rest of her refit, which included installing a new engine and new standing rigging.

In early July, *Higher Porpoise* was loaded onto a transport trailer for her ride to Waukegan. As soon as she arrived, she was offloaded and placed in the area where the work would begin. Ian Gates and the Larsen crew went to work immediately, and Ian documented the entire project in photos.

Prep and assembly

The first step was to measure and mark the keel for removal of the bottom 19 inches. Next came the cut, after which the boat was lowered so the keel stub was resting on blocking. The crew then carefully and precisely maneuvered the two halves of the split bulb into position so the holes for the through-bolts could be drilled.

After drilling the holes and testing the fit of the bulb, Ian and his crew removed the bulb halves so they could prepare the keel surfaces. They removed all the old coatings down to the lead and roughened the surface to provide some tooth for the heavy thickened epoxy they would use in the final installation.

After attaching the bulb and tightening the bolts, they removed all of the thickened epoxy that had extruded under pressure, then used the same compound to fill the bolt holes and smooth any gaps between the cut keel and the underside of the bulb. They faired the entire bulb and the mating surfaces to produce a clean smooth surface before final finishing, which consisted of a barrier coat and several coats of new antifouling paint.

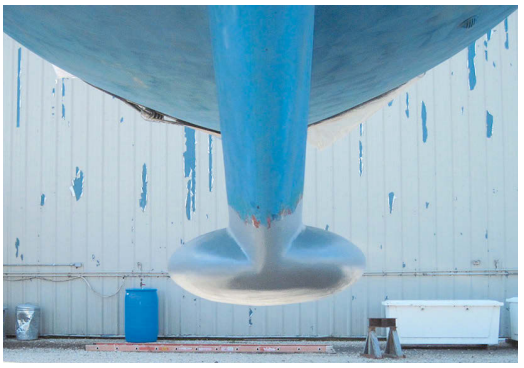
While the modifications were under way, Sandy and I were in Portland, Oregon, delivering family heirlooms to our daughter and her family. When we finally returned to Larsen Marine, we were anxious to see the finished project. We walked over to visit *Higher Porpoise* as she hung in the travel lift slings and were very pleased to note that her new keel looked as if it had come that way from the builder. To our eyes it was beautiful.

How does she sail?

The proof, as they say, is in the pudding. We had a number of questions that could only be answered on the water. On August 2, 2016, *Higher Porpoise* was launched in her new configuration. A couple of days later, after we'd tuned the rig and moved aboard, we began a 3,000-nautical-mile journey to our new home port at Burnt Store Marina in Punta Gorda, Florida.

Our first question was, "How will she feel?" We wondered what effect the keel modification would have on her

During the test fit, the keel began to take on its future appearance, at left. The bulb halves were then removed, for the keel surface to be ground to bare lead, then bolted back on with epoxy in the joint, center. The faired bulb and adjacent keel surface await paint, at right.

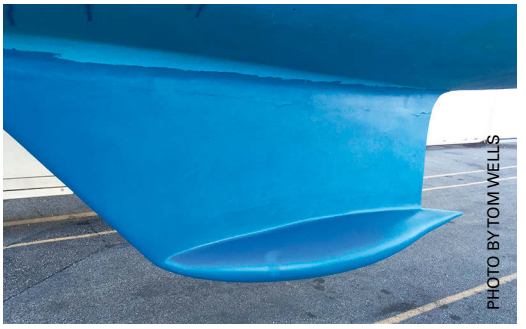


From forward, aft, and the side, at left, and at splash time, below, the bulb appears to be organically part of the keel.

overall stiffness. If anything, she seemed to be slightly stiffer than before.

The second question was one of performance. Our Tartan 37 with its deep fin keel had always been an excellent performer when going to weather. The purists wrung their hands and told us we'd be spoiling a good boat and would lose that performance edge. We have sailed to windward enough on our voyage south to say that, if she's lost anything at all, it isn't much. She still points quite high and goes fast when properly trimmed. If she does make a bit more leeway when going to weather, we have not noticed it, and in any case our racing days are over. We were also concerned that the modified keel might adversely affect weather helm, but to our delight we found it basically unchanged. She's still a great performer and that's good enough for us.

The third question was that of durability. How would the bulb and its attachment hold up to inevitable stresses, including groundings? (Yes, we did find a couple of shallow spots along the way!) Once we were safely home at Burnt Store Marina, we had a professional diver clean and inspect the hull, rudder, and keel. He reported that the keel was in excellent condition, and he was surprised when we told him that it was an attached split-bulb modification.



This was an expensive improvement. Anyone contemplating this modification for their boat and having the work done by professionals must expect the project cost to run from $10,000 to $16,000 depending on the boat's size and the weight of the split bulb.

Replacing the entire keel would likely be even more expensive. Those bold enough may be able to save as much as 60 percent of the cost by doing the cutting and installation work themselves, but should be mindful of the difficulty in working with lead and the potential health risks involved.

To sum up, we are glad we decided to keep our beloved boat and modify her keel. Faced with the same options and armed with our experience, we would make the same choice again.

Tom Wells had a long career as a professional engineer. He and his wife, Sandy, both retired in June 2016, and in August 2016 they set out from Waukegan, Illinois, on a 3,000-nautical-mile voyage south via the Great Lakes, Erie Canal, Hudson River, and the East Coast. They now live aboard Higher Porpoise *and are based in Southwest Florida, cruising and enjoying life.*

Resources

Lead casting
MarsKeel Technology, a division of Mars Metal Company
https://marskeel.com

Larsen Marine, Waukegan, Illinois
www.larsenmarine.com
847-336-5456

Draft-reduction balance sheet

Weighing cruising gains vs. performance losses

BY ROB MAZZA

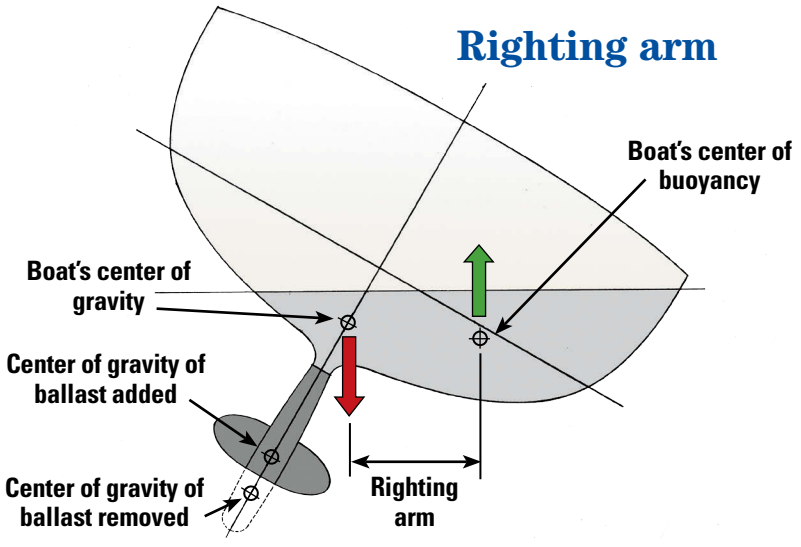
By modifying the keel on his Tartan 37 to reduce its draft (see "A Keel Too Deep," page 44), Tom Wells has taken a step that many sailors have taken in recent years when converting older racing boats for cruising. He certainly chose well by involving MarsKeel with this project. The company has been in the keel business for a good many years and has perfected the draft-reduction technique that Tom describes. Indeed, I featured MarsKeel in an article in *Professional Boatbuilder* magazine in August 2015.

Deep draft does certainly narrow cruising options, but it contributes greatly to sailing performance. It allows the ballast's center of gravity to be placed low, to provide stability for carrying sail, and increases the keel's aspect ratio, improving the efficiency of the keel by reducing tip loss and the resulting induced drag. The deep-draft keel also was configured to the optimal area as perceived at the time of design. Anyone contemplating such a draft-reduction venture should first consider the performance ramifications.

Stability

Had he simply cut 19 inches and 1,800 pounds off the bottom of the keel, Tom would have reduced his boat's stability in two ways: by lowering the total displacement and by raising the boat's center of gravity. As we saw in articles in previous issues of this magazine ("Fundamentals of Stability, Parts 1 and 2," May and July 2016), for a given beam, stability is directly related to the boat's weight or displacement. All things being equal, a 12 percent reduction in displacement will result in a 12 percent reduction in stability, or the ability to carry sail at all heel angles.

All things are not equal, however. Removing the lead from the deepest extent of the keel will result in the boat's total center of gravity moving upward, reducing the righting arm at every angle of heel as well as reducing the range of positive stability.



Ballast added to compensate for cutting off the bottom of the keel must necessarily be higher up, so a greater weight is needed to restore the boat's center of gravity to its original position and achieve the same righting arm. This is accomplished with the bulb.

Therefore, if the goal is to reduce draft while at the same time maintaining stability, weight has to be added to make up for the weight of ballast removed. Where this additional ballast is installed has an important effect on the righting arm.

In order to generate equal righting moments with a shorter righting arm, the amount of weight or force has to be increased proportionally. In some cases this added weight can be placed in the bilge, if there is enough room under the cabin sole. But with the added ballast placed this high in the boat, barely under the boat's total center of gravity, the weight has to increase substantially to achieve an equal righting moment with the much shorter righting arm. The weight of added ballast has to increase so much, in fact, that in typical modern shallow-bottomed hull designs it is essentially impossible to fit that much lead under the sole.

The best solution is to add less weight as low down as possible. This is the solution that MarsKeel has adopted with the addition of a split bulb on either side of the new shortened keel tip. Adding 2,300 pounds at the bottom of the shorter keel compensates for the reduced righting moment that would result from removing 19 inches and 1,800 pounds from the keel tip (see the diagram on page 47). The additional 500 pounds of ballast is enough to achieve the original righting moment by retaining the previous center of gravity, and it also increases the total displacement of the boat. This increase in displacement, although moderate at 500 pounds, will improve the boat's capsize number, because any increase in stability for a given beam will have a positive effect, even if slight.

Foil efficiency

Removing 19 inches from the very tip of the keel reduces the total keel area significantly. It also reduces the keel's aspect ratio, thus greatly increasing tip losses and induced drag. Adding a sizable bulb to the new keel tip further reduces the lifting surface, because the sides of the bulb do not form an efficient lifting foil. However, the bulb, being wider than the keel, does act as an end plate and thus helps to reduce tip losses and induced drag (see the diagram on this page).

Adding the bulb further reduces the lift area of the keel, but does its acting as an end plate really restore the keel efficiency enough to compensate for that loss of lift area? The short answer is no. In my hours delving through old NACA (National Advisory Committee for Aeronautics) wind-tunnel tests on wing-tip fuel tanks on low-speed aircraft, I found out that the effective aspect ratio can be measured to the center of the bulb, not to its tip. So, while the bulb will restore stability, it will not be as efficient a foil as the same planform without the bulb.

In addition, cutting 19 inches off the bottom of the keel significantly reduced its total area. This smaller area of keel still has to generate enough side force to balance the same area of sail. The result is a more highly loaded keel surface. The keel of smaller area can only generate the same lift as the original larger keel through an increased angle of attack, and this manifests itself in more leeway.

The smaller, more highly loaded keel is also more prone to stall if loaded too greatly. This could occur when sheeting in after a tack, when the sail forces become higher but the boat has not yet gained enough speed to generate lift to counter the increase in sail loading. When and if the keel stalls, the boat could well begin to go sideways! This tendency can be overcome by swinging wider through a tack and footing a bit before resuming a close-hauled course.

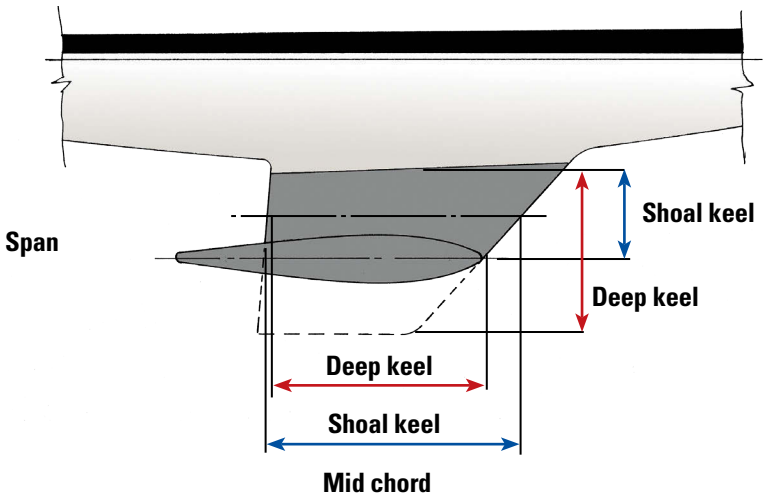
The tip of the bulb is flush with the leading edge of the keel so it won't catch lobster pots and the like. This is not optimal. Those same NACA wind-tunnel tests mentioned above indicated that the bulb would be more efficient if it projected forward of the leading edge. This would also help in matching the center of gravity of the added bulb with that of the removed section of keel.

Structure

Keel bolts and interior floor structures are designed to handle the bending moment induced by the weight and depth of the ballast. Reducing the draft and increasing the weight places about the same load on the bolts and interior structure, so there is no need to add more structure to compensate for the increased weight. However, the reduced draft comes with a big plus as it reduces the loading caused by grounding.

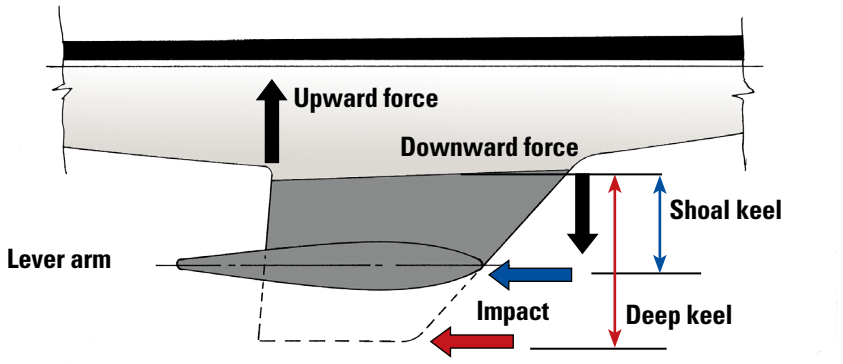
A deep-draft keel hitting a rocky bottom will induce a high upward load on the hull at the trailing edge of the keel and a high downward load at the

Span and aspect ratio



Aspect ratio = span ÷ length of the mid chord
The aspect ratio of the cut-down keel is much lower than that of the original deep keel because it has a shorter span and a longer mid chord.

Grounding impact



In a grounding, due to the shorter lever arm, a shoal-draft keel imparts smaller impact forces on the hull forward and aft than a deep-draft keel.

leading edge (see diagram above). That is, the trailing edge will be punched up into the hull and the leading edge pulled away. This can result in cracked floors at the aft end of the keel and damage to the hull laminate at the forward end. The substantial reduction in draft greatly reduces the impact moment, putting much less strain on the hull and internal structure in a severe grounding. This is good.

Conclusion

Reducing draft and adding a heavier bulb, as Tom has done, will maintain, or even increase, sailing stability and sail-carrying ability when sailing upwind. Despite the fact that Tom has not noticed any loss in upwind performance, there certainly will be a reduction due to the lower aspect ratio and the smaller area of the lifting surface. But as Tom admits, he is now, like many of us, more a cruiser than a racer. Off the wind, any difference in performance will be even less noticeable, although the 500-pound heavier displacement and the larger wetted surface of the bulb compared to the original keel tip will lead to a marginal reduction in speed.

The big plus for Tom and Sandy, in addition to their ability to access more cruising destinations, is the reduced risk of serious damage in a grounding. So, on the whole, reducing draft in this way is certainly an option worth exploring by anyone who wants to follow them into thinner water.

Rob Mazza's bio appears on page 17.

Tropical cold

A water-cooled fridge keeps its chill in warm waters

BY PATRICK BOUCHET

Sailing in any region where the water is warm — the Tropics, Florida, and the Bahamas come to mind — can impose a real strain on an air-cooled refrigeration system. The compressor may run 24/7 and get so hot you can't touch it. Batteries will be taxed trying to keep up. Worse still, the beer may never get colder than 50°F.

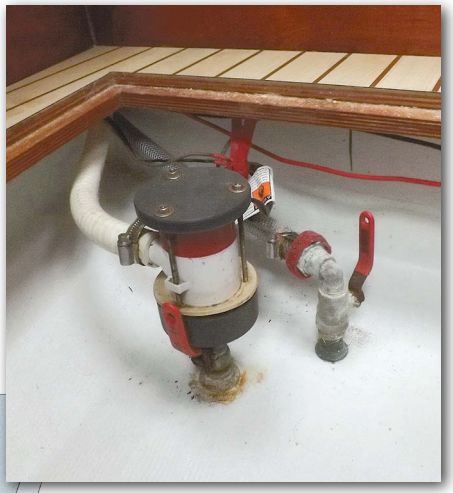
If this is your reality, you may be better off cooling your refrigeration system with seawater. As well as having a much higher thermal conductivity (the ability to conduct heat) than air, water is able to absorb more heat because it is much denser than air. The cooling efficiency of water is very apparent to anyone who goes for a swim to cool off in hot weather.

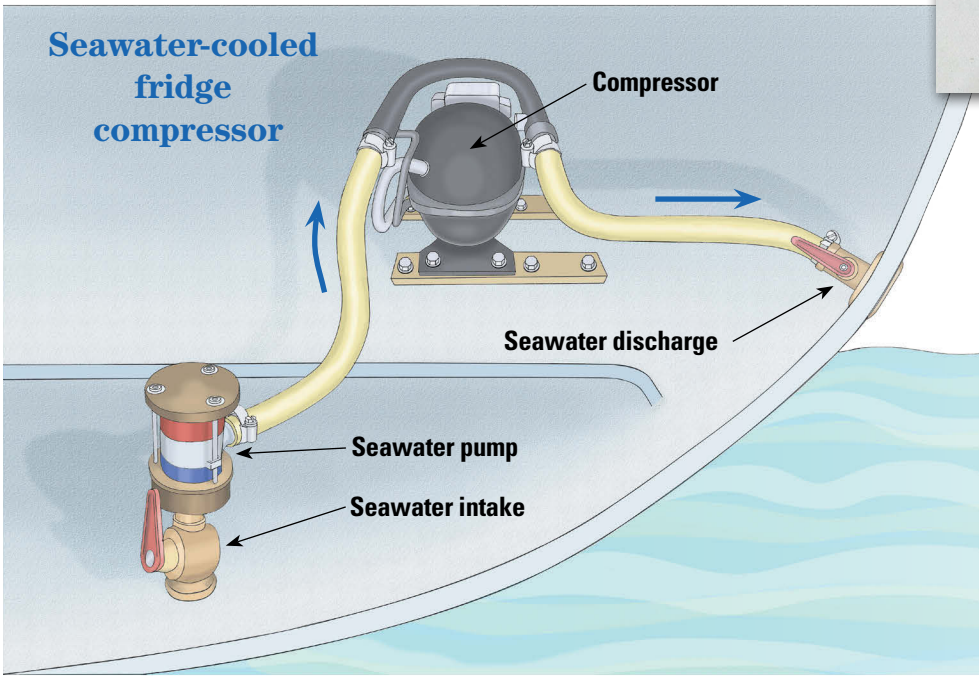
A refrigeration system doesn't create coldness, it's a heat pump that removes heat. The smaller the temperature difference between the evaporator inside the box and the condenser outside, the more efficient the heat pump. As the inside temperature of a refrigerator has to be constant and close to 40°F, it's important to cool the condenser as much as possible. The most efficient way to do this in warm-water regions is with a water-cooled compressor. Even when both are warm, say 88°F, water is 24 times more efficient at conducting heat away from the compressor than is air.

Water in and water out

To install a water-cooled refrigeration compressor, you'll need access to a through-hull deep enough in the hull so it is below the waterline when the boat is heeled *and moving fast.* (At speed, a sailboat's windward underbody is exposed in the trough between the bow and stern waves.)

You'll also need a pump to drive the seawater through the compressor's heat exchanger. One option is to use any of the freshwater-delivery pumps available in any chandlery. They are usually self-priming, making it possible to install the pump above the boat's waterline. The problem is that they are often noisy. This might be acceptable for a pump





Patrick mounted his seawater-cooled refrigeration compressor, upper photo, in a compartment close by the seawater delivery pump, lower photo, which he installed directly to the valve on the intake through-hull by means of a specially made adaptor. The illustration at left shows the cooling-water flow path from the intake, via the compressor, to the discharge through-hull mounted just above the boat's waterline.

that runs only when a faucet is open, but not for a refrigerator that may cycle on at any time of day or night.

If the above-the-waterline mounting advantage is too great to ignore, I have good news for those who choose the freshwater pump. Because the compressor's cooling system does not require a high flow rate, with the use of a DC/DC converter, the pump can be run at 6 volts instead of 12 volts. This results in a quieter pump that consumes less power.

I prefer the other option, which is to use a centrifugal pump like the common Rule bilge pump. These pumps are simpler, less expensive, and much quieter. When run at 6 volts, they are nearly silent. The catch is that centrifugal pumps are not self-priming and so must be mounted below the waterline — well below the waterline for the reason mentioned above. (Using a lathe, I made an adaptor that allowed me to mount my pump directly onto the ball valve attached to the through-hull.)

The seawater plumbing consists of a pipe from the seawater-pump outlet to the compressor's cooling-coil inlet, and another pipe from the compressor's outlet to an overboard-discharge through-hull, which also should have a shut-off. The discharge should be above the waterline, so you can hear or see water exiting, but not so high that the running water creates a noise problem.

Running the power for the pump from an auxiliary power output on the compressor will ensure that it runs only when the compressor is running. If two compressors are used, for a refrigerator and a freezer, they need to be installed in series on the same water circuit, with an electrical relay that allows the pump to be powered any time either compressor is running.

For the cost of a water pump, some hose, and a few fittings (and some spares to carry on board), you can have an efficiently cooled refrigerator that will hold the fridge at the ideal storage temperature even in the Tropics.

Patrick Bouchet and his wife, Françoise, have owned four boats since they began sailing in 1978. They built their current boat, Noulica, *from the ground up over 4 years. They've cruised extensively in the Mediterranean and more recently in the Bahamas and on the Intracoastal Waterway in the U.S. They've crossed the Atlantic three times.*

Reliability of the system –PB

During the nearly five years we have been living aboard *Noulica* full-time, we have had several failures.

Leaks – As is common with any plumbing system, we've experienced leaks. As you can imagine, a saltwater leak near the compressor is harmful to that equipment and to the associated electrical connections.

Electrical problems – Our DC/DC converter has failed. When this happened, I was able to easily bypass it with a 12-volt supply to keep the system running until I could replace the converter. Running on 12 volts, the pump was noisier and consumed more power.

Pumping problems –The seawater intake, pump, hoses, and pipes have been plugged by algae, shells, and other strange sea creatures. This is easy to detect: the pump runs but no water flows out. Fixing the clog is simply a matter of shutting the intake through-hull valve and disassembling and cleaning the circuit components. I routinely do this whenever we haul *Noulica*.

Pump failure — On the second day of our Atlantic crossing, the fridge stopped working. The pump motor was running, but the water didn't flow. Working in the bilge in a heavy sea was not much fun, but I was able to discover that the pump's shaft had broken at the motor bearing. Fortunately, we had a spare pump on board and I was able to swap them easily.

Screens for ventilator cowls

BY
GREGG NESTOR

Keep out their prey and spiders won't move in

From open invitation to entry denied: Gregg's cowl, at top, received a temporary cover while Gregg hemmed a circle of screen material, threaded a drawstring, then secured the screen around the cowl.

Over the more than 40 years that I've been messing around in boats, I've had to deal with a variety of uninvited guests that have tried to set up house on board. In addition to the seasonal invasions of mayflies, midges, muckleheads, and black flies, I've evicted swallows from my boom, mud daubers from between the flakes of the mainsail, and numerous species of spiders from every nook and cranny of the rigging.

With the exception of periodic cockpit invaders, most critters come aboard while the boat is moored in its slip awaiting use. Fortunately, I've screened the opening portlights, hatches, companionway, and engine vents, and these measures have been effective at keeping bugs and other creepy-crawlies out of the cabin.

Recently, though, I had to remove a mother spider, her numerous offspring, and her extensive web from inside my starboard Dorade vent. It wasn't an easy task. While the Dorade vent's outlet is screened and prevents any intrusion into the cabin, the cowl is large, wide open, and inviting.

After evicting the stowaway arachnids, I wrapped the cowl with an applicator cover from my electric buffer. It prevented an invasion by insects and airborne debris, but it also eliminated 90 percent of the air movement. So much for a quick fix!

While the applicator cover was temporarily in place, I fashioned a proper screen cover. To do so, I measured the diameter of the cowl, cut screen material 6 inches larger, folded over the screen's perimeter edge approximately 1½ inches, sewed the folded edge, and fed a cord between the fold all the way around the screen. While I was at it, I made a screen for the other Dorade cowl, and tied the new bug- and debris-proof screens over the cowls.

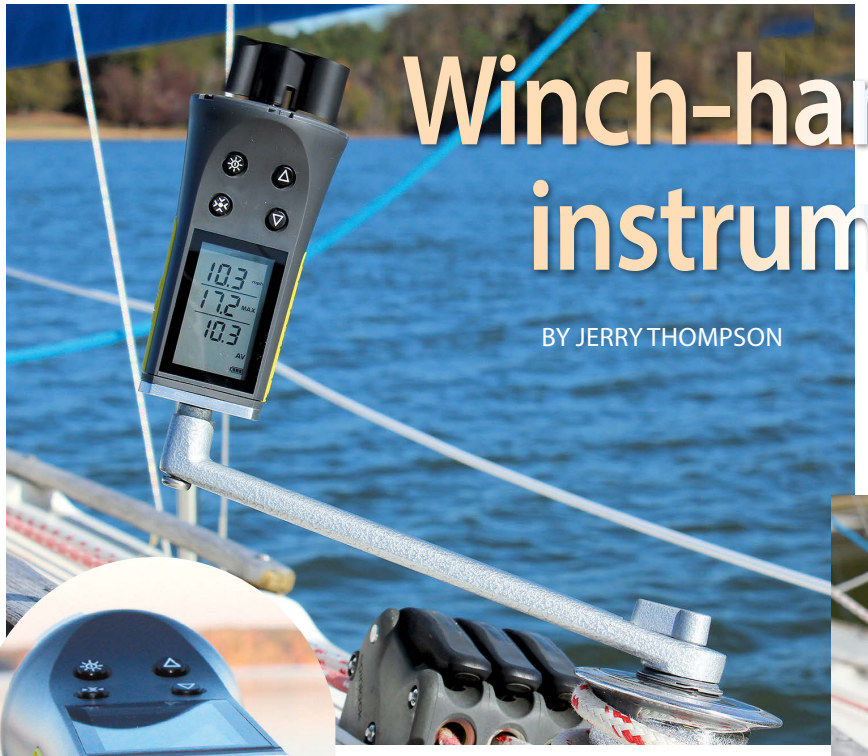
Now all I need to do is devise a way to keep water snakes from sunbathing on my sugar-scoop stern.

Gregg Nestor is a contributing editor with Good Old Boat. *He has authored three books on sailing:* Twenty Affordable Sailboats to Take You Anywhere, The Trailer Sailer Owner's Manual, *and* All Hands on Deck. *Last year, he became a snowbird after relocating his boat, a Caliber 35, from the Great Lakes to Florida, where he now gets to experience tides, manatees, dolphins, wonderful winter weather, and the occasional hurricane.*

Winch-handle instrument mount

It uses a feature common to many devices

BY JERRY THOMPSON



It started with a search for an anemometer, as I was curious about wind speeds while sailing my Seaward 24. Sure, I had an idea of what they might be, but I wanted to see actual numbers that would confirm my guesses.

I quickly learned that a righteous wireless masthead anemometer costs north of $1,000, while a wired system costs a little over $800 — before it's wired.

I turned my search to a handheld omnidirectional anemometer and found the Swiss-made Skywatch Eole. It's waterproof, has a backlight for night use, and displays all the information I need: current wind speed, average wind speed, and highest gust. But sailing a Seaward 24 with one arm up in the air holding an anemometer was an imperfect solution.

I noticed the Eole has an aluminum baseplate with a threaded socket, the same found on cameras and on other small electronic devices. Seeing this universal socket sparked an idea for a perfect solution.

I removed the hand grip from a winch handle and, in its place, drilled a ¼-inch hole through the winch handle's arm. I passed a 1½-inch-long ¼ x 20 bolt through the hole, threaded a nut onto the bolt, tightened it, and was left with a winch-handle arm with a short threaded stub poking up where the grip used to be. Screwing the anemometer to the winch handle and inserting the handle into the cabintop winch gave me an effective mount that allowed me to read the wind speed from anywhere in the cockpit.

It wasn't long before I realized that many electronic devices have the same ¼-inch threaded socket. I began to get creative, and that winch has become the base for a navigation center and my onboard entertainment.

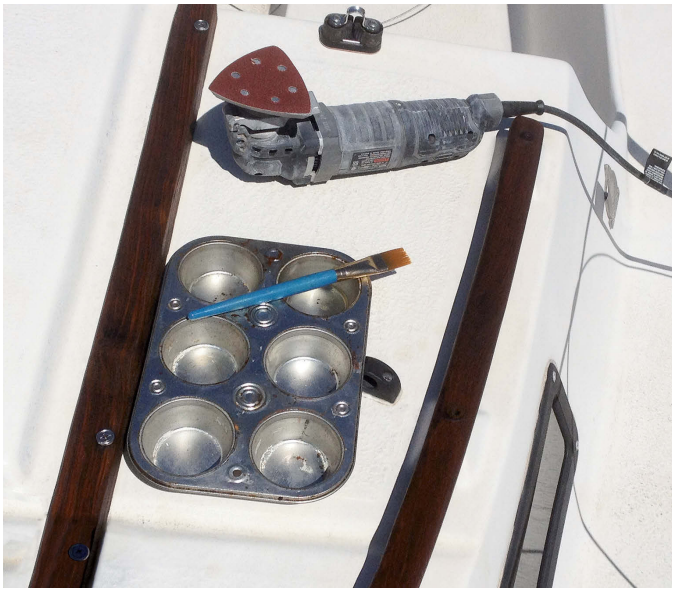
Jerry Thompson is an information systems professional who works and lives in eastern North Carolina. He learned to sail more than 25 years ago at the Armed Forces Recreation Center, Lake Chiemsee, Germany. North Carolina's milder winters keep Jerry on the water year-round.

Devised as a mount for an anemometer, main photo, Jerry's modified winch handle became a multitasker. It can hold as desired, from top right, a smart phone, an iPad (both with the aid of third-party adaptors), an all-weather HD video camera, or a Bluetooth speaker.

Small-batch brightwork

Dash off little jobs with dispatch

BY ALLEN PENTICOFF



When I'm desperate to get a relatively small teak finish job done in a hurry I . . .

1. Sand — 80-grit, then 120-grit — with a power oscillating tool. (This tool is a must-have for any handyman. It's very fast and I can maneuver the sanding edge around hardware. With its vast array of available blades and adaptors, it's also versatile, and makes easy work of tough jobs.)
2. Hand sand a little under handrails and other hard-to-reach spots.
3. Blow off the work area with a powerful electric leaf blower (compressed shop air contains too much water and oil).
4. Wipe the surface with a tack cloth.
5. Pour a little teak oil into an old 6-cupcake pan. (It's very stable at rest, easy to grasp, and great for holding small parts and small amounts of liquids.)
6. Apply the teak oil with a ¾-inch-wide artist's brush. (A brush with tight bristles and a squared-off tip allows very good control and I can cut such a fine line with it that I can skip masking. It's good for lots of other touch-up painting jobs too.)
7. Repeat with more coats as needed.
8. Clean brush and pan.
9. Admire the result.

Allen Penticoff, a Good Old Boat *contributing editor, is a freelance writer, sailor, and longtime aviator. He has trailer-sailed on every Great Lake and on many inland waters and has had keelboat adventures on fresh and salt water. He owns an American 14.5, a MacGregor 26D, and a 1955 Beister 42-foot steel cutter that he stores as a "someday project."*

Boats for Sale

Chris-Craft Apache 37
1967 Sparkman & Stephens-designed sloop. Yanmar 3YM 30 diesel w/125 hrs. RF headsail and FB main. Aft-led halyards. Awlgrip hull and deck. Quick little boat. Norfolk, VA. $24,000.

George Wigfall
757-486-0022
gwigfall2@cox.net

Islander 29
1967. Well maintained in good cond. Bristol brightwork. Raised dinette saloon w/ample storage throughout. New interior and cockpit cushions. New holding tank system. FWC A4 w/electronic ignition runs well. Vapor and high-water alarms. ProFurl RF, 3 anchors, 2 Plastimo cockpit compasses, Datamarine D/S, 3 bilge pumps, 2 VHF radios, new stereo, Raymarine GPS. Many extras! Beverly, MA. $11,000.

Dean Gibbons
989-362-1016
deangibbons67@gmail.com
islander29.tumblr.com

Seafarer 31
1968 Bill Tripp design. *Trilogy* of Rockland, ME. Cruise ready. A master cabinetmaker's boat. A classic inside and out. Solent-type rig, furler, and headstay, inner cutter sail, spinnaker in sock, red canvas dodger/awning. 200W solar 400AH battery, inverter, hot showers, microwave, fridge, AP, cabin heater, Corian counters. 15-hp OB in lazarette. Rockland, ME. $20,000.

D.T. Lewis
603-669-7937
dtlewistrilogy@gmail.com

Grampian 26
1973. Carefully maintained for the last 20 years. New Beta Marine Diesel 26 (w/200 hrs), new Vetus wet exhaust and 3-blade prop. Upgraded electronics and batteries. Dodger and bimini. 4 anchors, 3 sails. Very roomy, high cabin w/long cockpit. Wiarton Marina, Wiarton, Ontario. $16,000.

Andrezij Kesik
519-913-1705
akesik79@gmail.com

Mariner Yachts 36 cutter-ketch
Hull #15 New Hampshire-built Mariner 36 designed by Peter Canning. Cutter-ketch rig adds significant sail area, improving light-air performance and making this solid bluewater boat easily adaptable to various weather conditions. *Kittiwake* has been dutifully maintained and upgraded throughout her life cruising the East Coast and Chesapeake Bay. Annapolis, MD. $52,000.

Geoff Ferrell
202-547-7757
geoff@ferrell-madden.com

Willard 30
1995. Custom-built downeast-type trawler. To step aboard is to return to an era when naval design featured rugged construction and traditional layout. Interior is light, airy, and uncluttered. Salty looking with bronze opening ports and cowl vents and stabilizer poles w/ paravanes. Heavy displacement, 2,500 lb encapsulated lead ballast. Extra fiberglass in bilge provides great stability. Mechanicals all modern. Dinghy included. Long Island, NY. $69,500.

Andrew Galasso
631-722-3400
Andrew@lighthousemarina.com

Bruce Roberts 34
1986. Freshwater boat, fully prepared for offshore. Strong C-flex hull, rigid dodger, new 2 x 250W solar panels. Mast, boom, all standing rigging, mainsail replaced in '05 refit. Everything else replaced during total refit in '13-'16. Because of changed travel plans, we are buying a larger boat. Whitby, Ontario. $49,000.

Anton Pachkine
416-275-8495
forceanboats@gmail.com
www.mistyblueii.com

Sea Sprite 33
1984. This is not your father's Sea Sprite. *Panache* has been featured in 2 episodes on PBS. Relaunched in '07 after $200,000+ keel-up restoration with more upgrades every year since. New Awlgrip Timeless Green hull paint in '15. Brightwork refreshed every year, fresh bottom paint '16. Butterfly hatches added '14. This full-keel vessel backs like a dream with its powerful bow thruster. Manitowoc/Kenosha, WI. $79,500 OBO.

Richard Charette
847-867-8296
richchar96@gmail.com
www.panachesailboat.com

Classic 42' wooden yawl
1964 Sanderling International 800. Robert Henry design custom built by Jon de Dood in Germany. Completely rebuilt with new cabins, interior, new decks, and major hull work completed in '00 and maintained in great condition. Enclosed center cockpit w/ hard dodger and bimini make her the perfect cruising yacht. New Beta 50-hp engine '14. All systems replaced: electrical, plumbing, electronics. Watermaker, and solar panels. Well equipped for immediate cruising by her new owners. West Bath, ME. $62,000.

Robert Deans
207-389-6180
sanderling2000@yahoo.com

Pearson Renegade 27
1968 classic. Hull #124. Restored '01. Rebuilt Atomic 4, Awlgrip bottom, solid keel, furling jib, mainsail, butterfly blooper, new main bronze winch '05. Enclosed head, sleeps 4, fresh water, no balsa. New survey '17. Steel cradle. Rubber dinghy. Sad captain loved this boat but crew has aged out. Slip #143, Port Superior, WI. $5,000.

Judy Hoover
612 747-3026
frdr@aol.com

Seidelmann 245
True K/CB yacht w/cast-lead keel and FRP swing CB. LOA 24'2", draft board up 1'11", board down 4'6". Two RF jibs, lightly used 2-yr-old main, sailcover. 2-yr-old Yamaha 4-stroke. Tandem trailer, jack stands. Porta potty, anchors, stove, D/fishfinder, swim ladder, and more. Ocean View, DE. $5,500.

Hugh MacRae
302-539-2644
capthugh72@gmail.com

Cabo Rico 38
1984. Handsome, classic design by Bill Crealock. Cruising cutter, full keel, protected rudder. Heavily built ocean cruiser. Fresh water since 2004. Good, clean cond. Professionally restored hull. Deck recaulked. New bowsprit. New main, genoa, spinnaker, staysail, running rigging. Many reviews including in *Good Old Boat*, May/June 2012. West Michigan location. Stored inside. $87,500.

Warren Fritz
269-345-8004
jubilate38@gmail.com

O'Day 25
1976. Draws 2' CB up, Easily trailerable. Great condition. New Honda 9.9-hp OB, electric start, power tilt. New main and cushions. Going to a larger boat, must sell to vacate slip. Old Saybrook, CT. $5,900 OBO.

Gordon Towle
860-399-5224
sandy.towle200@gmail.com

Van de Stadt 32 steel sloop
1970. Rugged, reliable, well-maintained Dutch cruising boat. Yanmar 2GM20 diesel, Aries vane, Treadmaster decks, stainless lip on toerail and cockpit coamings. Functional cruising layout. Survey w/hull thickness gauged Aug '15. Most areas accessible for maintenance by owner. Contact owner for more information. Kittery, ME or South Dartmouth, MA. $15,900

Rich Holzer
603-724-2206
richard@dolphinseye.com

Allied Chance 30/30
1972. New 30-hp diesel, RF, new sails and halyards, vg cond. Baltimore, MD. $18,500.

Ted Diehl
443-690-7893
baron9292@gmail.com

Dickerson 35
1968 center-cockpit ketch, *Cygnet*. Great Lakes boat. Mahogany strip-planked w/white oak frames. Perkins 4-108 diesel runs great. 3 group 27 batteries, charger, and monitor. New wiring. Garmin instruments. All gear and equipment on board included. Sunbrella covers. Diesel heater in main cabin. 70W/4A solar panel. Spare 2-blade prop, 3-blade installed. Suttons Bay, MI. $15,000.

Howard Crisp
231-929-3328
hncrisp@gmail.com

Hunter 28.5
1985. *Wind-Borne* is a beauty inside and out. No major known issues. Mainsail, 150% genoa on new Profurl furler, lazy-jacks, 2-cyl 18-hp Yanmar diesel. Bimini and all cushions in vg cond. Beautiful interior/exterior teak. Everything on boat properly maintained and cared for. Always in fresh water. Registered thru April 30, '20. Fast and fun to race, points right high, finishes quite well in class. Lake Norman (Charlotte), NC. $14,250.

Ferman Wardell
704-236-5200
fwardell@bellsouth.net

Catalina 25
1986. Fin keel, standard rig, new sails, 12-hp Universal diesel, fresh bottom, Garmin 498, VHF, depth, stereo. New forestay, trailer. Very well cared for. Middle Georgia. $10,000.

Jack Sterrett
478-232-2908
lsterrett@bellsouth.net

Mercer 44
1962. Classic Bill Tripp-designed CCA keel/CB sloop for sale by third owner. *Good Old Boat* feature boat, July '12. Raced in SORC as *Jolie Madame*, won Lipton Cup, More recently as *Spirit*, won Turkey Shoot Regatta. Featured in *Great American Yacht Designers* as example of Tripp's work. Cruised to Maine, Tahiti, Caribbean, Bahamas. Professional total rebuild documented in magazine article "Glass Menagerie." Full details online at the Mercer owners' website. Irvington, VA. $120,000.

Floyd Hollister
804 435-8729
fhh11@columbia.edu
www.mercer44.net

Catalina 30 tall rig
Original owners. Fully equipped and set up for cruising. FB main w/stack pack, 3 headsails. Diesel, 3-blade prop. AP. Self-deploying anchor w/cockpit control. Dickinson cabin heater. Solar charging and Automac systems. Dual radio and mapper stations. LifeSling, MOB/horseshoe. Great Lakes boat, wintered indoors. *Xanadu* is ready for more adventures and seeks new owners. Northport, MI. $17,000.

Phil Von Voigtlander
231-386-7922
philfvon@chartermi.net

Rafiki 37
Documented bluewater liveaboard cruiser. 4JH3 56 hp Yanmar only 1,250 hrs. New dodger and bimini, new Harken RF and headsail. Comfortable at the dock or at anchor. Bay City, MI. $52,000.

James Countegan
989-529-9491
jcount54@yahoo.com

Boats for Sale, cont

Whitehall sail/rowboat
1983. Built at Washington County Voc-Tech Institute, Calais, Maine. Classic wooden rowing boat w/ aux sail rig. Carvel planked, mahogany seats, oak trim. 44 sq ft spritsail, 2 pairs Shaw & Tenney spruce oars w/sewn leathers. All bronze fittings. Mint cond. Seldom used. Stored indoors. One owner. Tilt-load trailer w/winch. MinnKota electric transom motor. Ashburnham, MA. $5,500.
Denis Roux
978-502-3111
denisroux@comcast.net

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Out of fiction and into reality

The novelty of a first sail is a source of joy

BY AVITAL KEELEY

Avital Keeley was 13 last summer when she spent a couple of days as a guest of Good Old Boat *founders, Jerry Powlas and I, aboard our C&C 30,* Mystic. *As a family friend, Avital had been hearing about* Mystic *for many years, but this was her first time on board. Her smiles brightened an otherwise gray day.* –Karen Larson

Pouring rain, flowers in my hair. My kind of day! But we didn't drive five hours from Minneapolis to walk around in the rain in the small town of Bayfield, Wisconsin. We came to sail. To sail on what, to me, was a legend, a boat I was afraid I might never see in person. But when the rain cleared up enough that it was decided we would head down to the docks, there sat *Mystic*.

My favorite books of all time, the Bloody Jack Adventures series, are all about sailing. Now, standing between expert sailors, *Mystic*'s owners, I felt obliged to reveal that all I knew about sailboats was the little I'd picked up from a fiction series based in 1801. Well, that plus some other nautical knowledge, such as the fact that one shouldn't stand up in a canoe. Also, I had committed to memory almost every known fact about the *Titanic*. When I got a chance, I confessed to Karen my mixed feelings about being a newbie aboard. Jokingly, of course.

Unless my hands are busy, you can bet they'll be somewhere on my special anchor necklace, a gift from my sister. It's an anchor because of those books. This was the only valuable thing I dared bring aboard. I was definitely not going to leave it behind on a sailing trip.

I was seated in the cockpit and we had just gotten out of the marina and onto the great Lake Superior. The wonderful wind and the beautiful bouncing on the small waves was enough to rock everything out of me but the smiles. Then Jerry said to Karen, "Why don't you and Avital raise the main?" My heart leapt and, together, Karen and I raised the mainsail (one of the few acts on a sailboat described using straightforward terms).

Eventually, I worked up the courage to ask if I could steer for a bit. Boy, what a treat! I sailed *Mystic* around in the West Channel, even across a sandbar just off a point where I had to pay attention to the depth! We reached a high speed of 4.5 knots and a depth of 101 feet. Jerry taught me how to open the furled jib. Then came a tack and a jibe (I thought he said "attack" and guessed the name came from wartime).

Jibe, jib, navigation, watch the wind! Heeling, stay on course, and watch the boom! I not only learned a new knot, but I tied it over and over, pretty successfully, if I may say.

The wind in my hair, standing at the helm, watching Madeline Island grow nearer and nearer. Watching the depth sounder for that shoal. Keeping an eye on where the wind was coming from and another on the compass and other boats. Then there was a moment when I said to myself, "This is it. This is your HMS *Dolphin*, the beginning of your sailing adventures."

Before I knew it, the first line from the first book slipped right out of my mouth. "My name is Jacky Faber and in London I was born . . ."

Avital Keeley fell in love with sailing and the adventures it has to offer after reading the Bloody Jack Adventures series. She wrote this at age 13, after her first real sailing experience aboard Karen Larson and Jerry Powlas' Mystic.

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