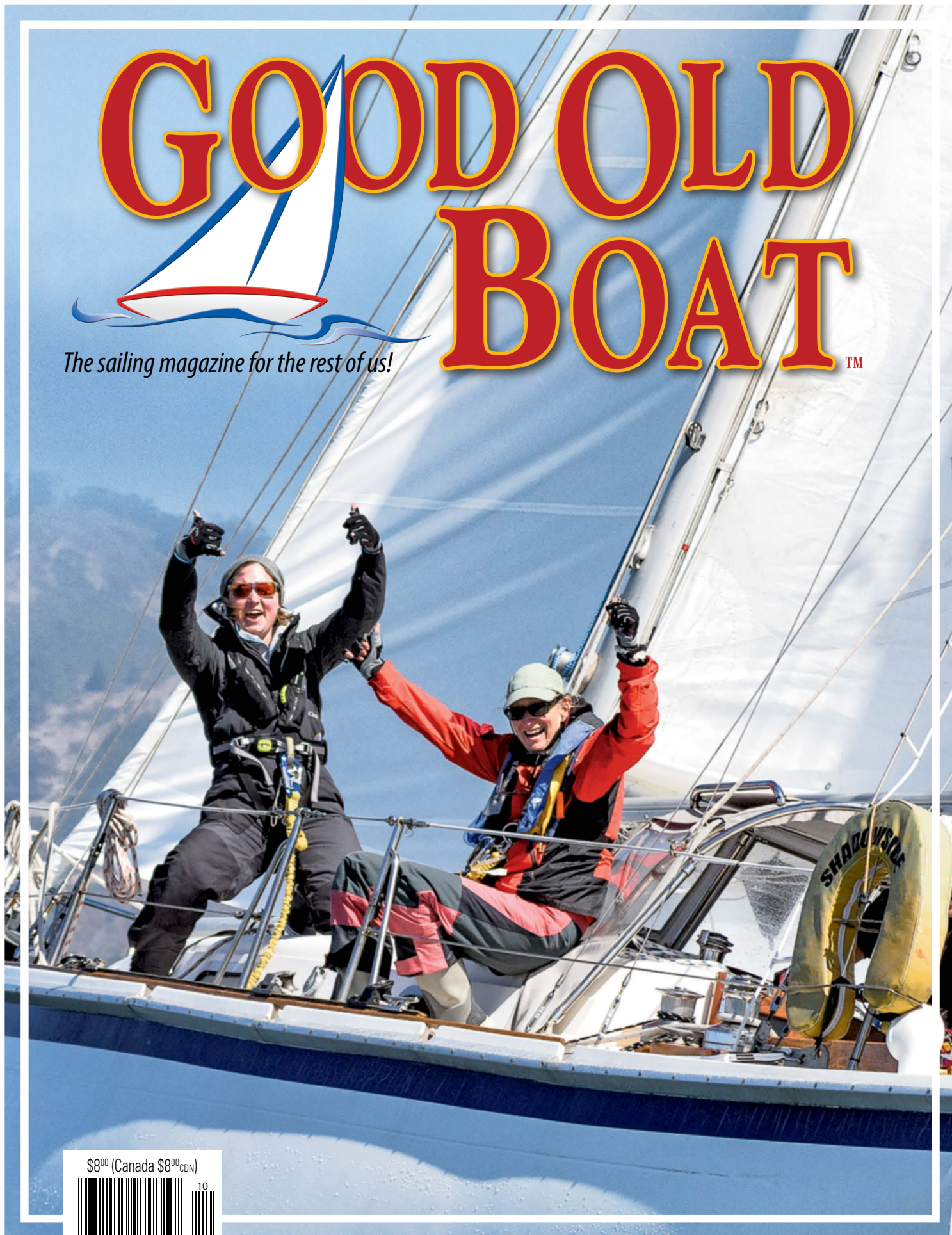


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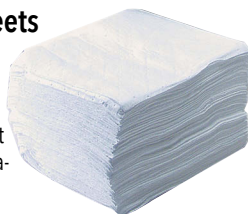
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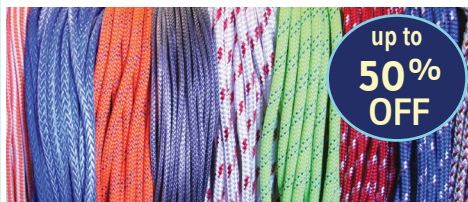
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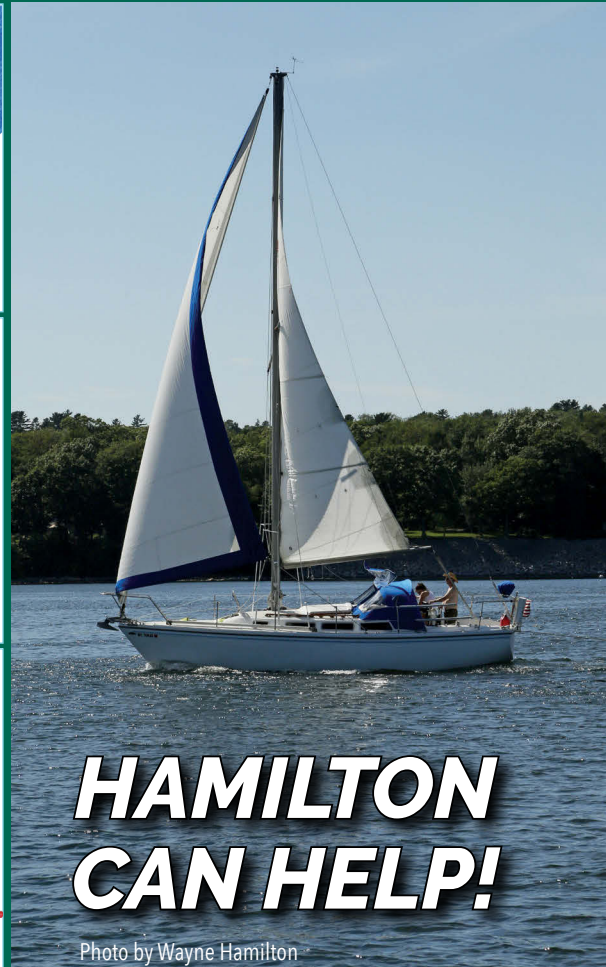
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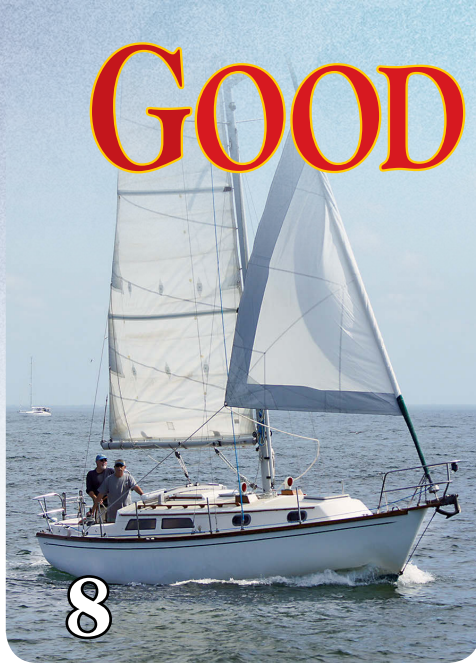
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On the cover ...

This month's cover girl is *Shadowside*, a 1977 Allied Mistress Mk III, here passing under the Golden Gate just after the start of the 2016 Pacific Cup. About 14 days and 20 hours after Leslie Richter took this photo with a Nikon D810, *Shadowside* and her four crew, including owner Lad Burgin, crossed the finish line in Hawaii.



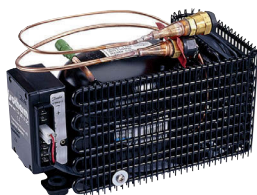
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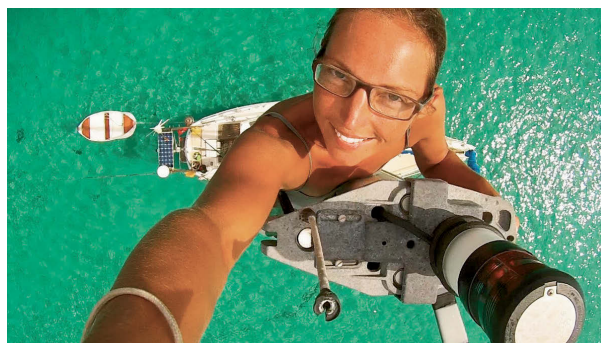


News from the world wide web

We're not just here, but there

If you're reading this, you have *Good Old Boat* in your hands (or on your device). And we hope you're receiving our digital supplement, *The Dogwatch*, via email. But there's much more. We often also post interesting and entertaining tidbits on our Facebook page ([Facebook.com/goodoldboat](https://www.facebook.com/goodoldboat)), and the video collection on our YouTube channel (*Good Old Boat magazine*) is growing (at [YouTube.com](https://www.youtube.com), type "good old boat magazine channel" in the search bar).

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Inspired by a sailor

"She figures things out and gets things done. She is one intelligent, determined, and motivated lady; I am living vicariously through her," wrote our fearless leader Karla Sandness when she recommended the YouTube channel by

WhiteSpotPirates. Untie the Lines is by and about Nike (pronounced nee-kay) Steiger, a woman in her 30s who left her career to buy a decrepit boat in Panama and voyage solo. Over the past five years she's uploaded weekly videos that document it all, showing how much her dream did not go as planned, and how much it's exceeded all expectations. Most are about 5 minutes long, all of them honest, well done, and a pleasure to watch. At [YouTube.com](https://www.youtube.com), type "White Spot Pirates" in the search bar

Got fiberglass?

There is no shortage of older fiberglass sailboats in disrepair, and many can be bought for almost nothing, if not nothing. But the real cost comes later, paid in sweat and tears and some money. Now there's a public group on Facebook for those busy paying that real cost. Restoring Fiberglass Sailboats is an active group and a great source of information and inspiration. It's folks working on boats helping folks working on boats. And according to the group, the rewards of taking that journey to fix up a good old boat "include a great vessel at a fraction of the cost of a new one, pride in your achievement, and the satisfaction that you've saved a good boat from a landfill fate." We agree.

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Sailing Is About Surprises

BY MICHAEL ROBERTSON



We learn to expect the unexpected,
then tell the story

Fifteen miles off the coast of Mexico on a sunny New Year's Day, 2012, the autopilot steering, my wife, Windy, and I and our two daughters were eating lunch on the foredeck of our home, a 40-foot sloop. Windy saw it first.

"A whale . . . we're gonna hit it!"

I was already sprinting back to the cockpit, where I disengaged the autopilot and cranked the wheel to starboard. Seconds later, our focus was off the port side as we glided past the motionless animal, whitecaps rolling over it as if over a small low-lying island.

"It's dead," Windy called from the bow.

Just then, the whale rose another foot from the water, blew a plume of stinking mist that the wind carried over us, and sank back down, again motionless. That's when we all saw the netting the whale was caught in and the small net floats that trailed behind it for at least 200 feet.


After two hours cutting away huge pieces of weighted netting, first from in the dinghy, then from in the water, I gave up. I'm a strong swimmer and wore fins, but 1- to 2-foot wind-driven seas made my efforts to move through the water feel inadequate. The first time a swell pushed me up against this living creature the size of a city bus, it was thrilling, and scary. When one of my fins got caught in the netting a second time, I imagined getting more tangled and pulled down by the mass I was cutting away. When I moved past the gaze from a brown eye the size of an apple to an unbound pectoral fin the size of a longboard, the whale quickly lifted the fin and I felt myself sucked and pulled by the strong currents it made. That happened again when I worked my way around the front of a massive head that moved quickly downward.

I climbed back aboard *Del Viento*, shivering. "I can't. I cut away a lot, but the animal's still bound somehow. I can't save it."

It's a long story involving other boats and sailors and a failed expedition at dusk to find the whale we'd left stranded hours before, but about 10:00 a.m. the following day, two other sailors, aided by other boats and dinghies standing by, spent 45 minutes in the water and managed to free the whale, which had remarkably survived the night. I'll never forget the collective joy we felt as the whale swam away.

Of course, I've told this story many times since, and I'm telling it now because it highlights the unexpected that's part and parcel of sailing. We didn't imagine we'd come across this whale that day. We've never foreseen any of the times we've run aground, the perfect passages, the engine troubles, the sail-trim discoveries, or the broken boom. Every wind shift is unexpected and requires a response.

Our shore lives aren't scripted, but it's easy, often necessary, to fall into a pattern that seems rote. That's why we own and maintain these old hulls, because in stark contrast to shore life, sailing piles on the unexpected. It's wonderfully inherent. And you don't even have to raise the sails; just messing about in boats is a sure way to keep you on your toes.

And what's the product of the unexpected? Experiences, of course. And experiences fulfill, whether they demand something from us and teach us something new, or they simply reward us for being afloat. When we tie up again, we're eager to share what happened to us, because humans are storytellers by nature and a sailboat is simply the perfect story-making machine. 

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Unlaying an Egg, Keeper Cover, and GOB's Digital Hit

He almost laid an egg

Early this morning, I received the latest issue of *Good Old Boat*. As usual I read it cover to cover. This one was a particularly good issue for me, as we just added a hatch, and replaced all the lenses in the other hatches on *Country Dancer*. Good stuff, but more important, it got me thinking. This summer, we left *Dancer* strapped down in a yard and came to Minnesota again to avoid the tropical storm drama in Florida and the Caribbean. Our son is a Professional Rodeo Cowboys Association (PRCA) clown and needed a large egg for a new act. I have the time and the skills, so I agreed to make a 3-foot-long fiberglass egg. I created a female mold and yesterday glassed the two brand-new halves together. It looked great.

But Matt Koch wrote something in his deck-hatch story ("Dank and Fusty No More," July 2018) that gave me pause. He wrote, "It was important to clean the wax off the blank . . . TSP did a reasonable job, but it took naptha . . . to remove the last traces of the wax." Uh-oh, I forgot to do that. This afternoon, I found that I could slide a simple chisel under the three finely laid layers of glass cloth and they would pop right off, because my parts were still fully waxed. This evening, I took a good shower after spending 3½ hours cleaning and sanding the parts to get ready to glass them together again.

Thanks, Matt. And if you are ever watching a PRCA rodeo on TV and see a clown with a big fiberglass egg, you can tell your friends, "Let me tell you a story about that egg."

—Gary Bratton, Duluth, Minn.

"I thought readers might enjoy a different perspective," wrote Patrick Shorey, a former deckhand aboard the Canadian Coast Guard's *Griffon*, a 233-foot High Endurance Multi-Tasked Vessel and Light Icebreaker stationed in Prescott, Ontario, Canada. "Here she's anchored in the St. Lawrence Seaway. The buoys on deck are winter spar buoys from the Trois-Rivières region, built to withstand the ice. Every spring they are swapped out for lit summer buoys; we had just finished a deck-load."

Cover surprise

I had been browsing through the June 2018 issue of *Good Old Boat* for about an hour when my wife, Lori, exclaimed, "Hey, that's our boat on the cover!" I had not noticed, but there she was in her previous incarnation as *Brown Eyes*. We purchased *Brown Eyes* in 2016, brought her up to Rockport, Maine, from Groton, Connecticut, and renamed her *Lorianne*. She is a great boat: solid, seaworthy, and, with an autohelm and all lines led back to the cockpit, easy to singlehand. Her cutter rig makes it easy to change the sail plan as conditions change. The Bayfield is a sweet-looking boat and never fails to garner questions and admiration when at a dock.

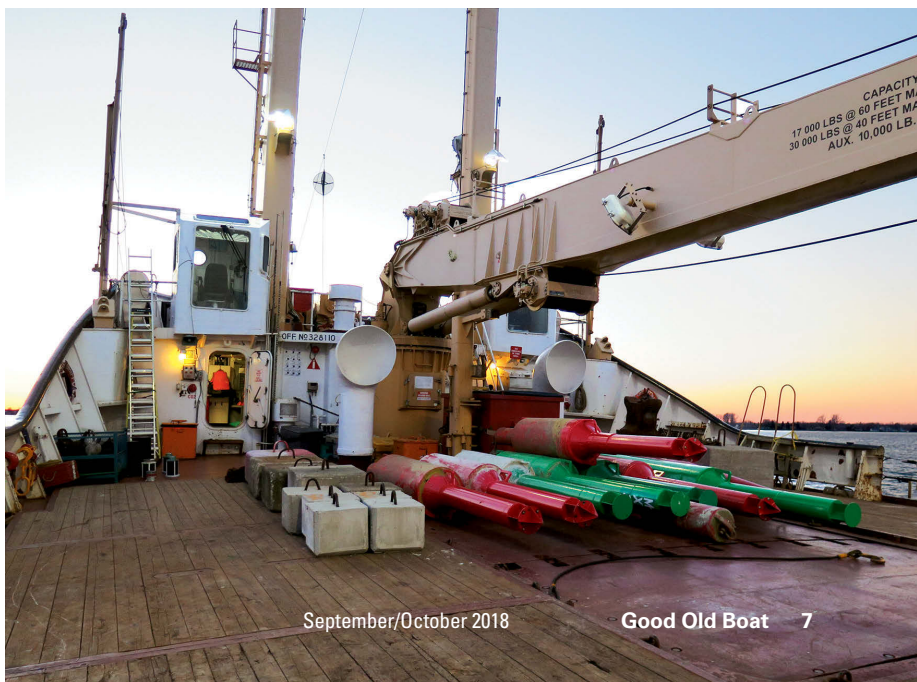
—John Alexander, Rockport, Maine

Doubling down with digital

Thanks for the electronic version of *Good Old Boat*, our favorite magazine! This is great!

—John and Susan Wood, Kestrel,
a 1968 Columbia 34, Barrington, R.I.

continued on page 54



Cape Dory 30 Mk II

BY GREGG NESTOR



In the same tradition as its predecessor but roomier on deck and below

In 1963, Andrew Vavolotis left Boston Whaler and founded Cape Dory Yachts. Until its demise 28 years later, the East Taunton, Massachusetts, company built close to 3,000 sailboats, ranging in length from 10 to 45 feet, until it ceased operations in 1991.

Noted naval architect Carl Alberg, who was responsible for about one-third of the company's designs, espoused the full keel with attached rudder, relatively narrow beam, an attractive sheerline, and moderate overhangs. Consequently, while other builders turned their attention to the racer/cruiser with its fin keel and high-aspect-ratio rig, Cape Dory stayed the course doing what it did best, and created a complete line of conservative cruising sailboats. This tack served the company well. Because Cape Dory produced boats of consistently high quality and with excellent resale value, customer loyalty was tremendous.

After Cape Dory ceased operations, the name was sold and most of the company's designs and molds were scattered among a number of boat-builders. Vavolotis took what remained of the company, along with its marine hardware division, Spartan Marine, to Maine, where he started Robinhood Marine and began manufacturing the Robinhood 36 and 40 using the Cape Dory 36 and 40 molds. Several sets of molds, including those of the Cape Dory 30 Mk II, were sold to Nauset Marine, at that time a custom boat-builder on Cape Cod.

Our review boat, *Tern*, is a 1987 Cape Dory 30 Mk II. Her owners, Doug Wilkin and Margaret Zak, proudly point out the numeral 1 on the builder's plate: this is the boat that was premiered at the US Sailboat Show in Annapolis, Maryland, in October 1986. Records indicate that it was fitted with a significant number of factory options, adding \$12,244 to the base price of \$62,995.

Design

While Carl Alberg had established Cape Dory's original design parameters, his strict adherence to them and his resistance to the changing demands of the sailing public became awkward for the company. Changes needed to be made, and in 1980, Vavolotis formed a division of Cape Dory called Intrepid Yachts to introduce a line of sailboats that looked and sailed more like their contemporaries from other builders. For them, he utilized the design talents of Chuck Paine and the firm of McCurdy and Rhodes. Soon afterward, he also made naval architect Clive M. Dent chief designer at Cape Dory Yachts.

In 1986, after 10 years of production and almost 400 hulls, Cape Dory Yachts discontinued the Cape Dory 30 and replaced it with the Cape Dory 30 Mk II,

Handsome is as handsome does. Matching its trim and well-balanced lines, the Cape Dory 30 Mk II is a well-behaved sailer.



designed by Clive Dent. While the Mk II has the same attractive full-keel profile, seaworthiness, and high quality of construction, its interior and cockpit are more contemporary. Best of all, Dent's modifications to the hull, which included lengthening the waterline and increasing the beam, gave the Mk II 30 percent more living space than its predecessor.

While the new hull form has more interior volume and greater form stability, the Mk II's looks are what initially set it apart from other 30-footers of the period. A pleasing sheerline sweeps from a modest forward overhang to a near-plumb stern. The coachroof is long and low and, because the broader beam carries aft, the cockpit is large. The generous use of teak, including a sturdy bowsprit, and bronze hardware from Spartan Marine contribute to the boat's traditional appearance. Production of the Cape Dory 30 Mk II ceased in 1990 after 31 hulls.



The rugged bowsprit carries two anchor rollers. A stainless steel rod bobstay is fitted, principally to counter tension in the headstay.

Construction

The hull of the Cape Dory 30 Mk II is a solid hand-laid laminate built up with alternating layers of fiberglass mat and woven rovings impregnated with polyester resin. All structural members are encapsulated in fiberglass and, along with the bulkheads, permanently bonded to the hull to stiffen an already stout structure.

The deck, cabin trunk, and cockpit are molded in one piece with an encapsulated end-grain balsa core. This sandwich construction adds little weight while stiffening the structure and providing some degree of insulation. Unidirectional fabrics are incorporated in high-stress areas and a tan-colored non-skid pattern is molded into the deck gelcoat.

The deck joins the hull on an inward-facing flange, where it's chemically bonded with thickened polyester resin and through-bolted. Stanchion bases, bow and stern pulpits, and other through-bolted deck hardware contribute some secondary mechanical fastening. The joint is capped with a 2-inch-high solid-teak toerail.

The ballast is a 4,200-pound lead casting carried low in the keel cavity. Voids between the casting and the keel are filled with thickened polyester, and the casting is glassed over. The rudder is a fiberglass laminate with a 1½-inch stainless steel stock and is mounted on the aft end of the keel by means of cast-bronze gudgeons and a shoe.

Spartan Marine Products, a wholly owned division of Cape Dory Yachts,



A pair of bronze opening portlights and a pair of less-traditional large fixed portlights punctuate the cabin sides, at left. A teak eyebrow accent strip highlights the well-proportioned cabin trunk. More interior light and ventilation are provided by a 20 x 20-inch hatch forward on the cabintop, a pair of Dorade vents by the mast, and an 18 x 13-inch hatch amidships. In the T-shaped cockpit, the seats are cut away to allow free movement around the wheel, at right. Small teak gratings cover the cockpit drains in the aft corners of the well.



With the insert in place, the V-berth is 6 feet deep by 6½ feet at its widest, top left. Outboard and above the V-berth are port and starboard fiddled shelves and beneath it is a large stowage bin, a portion of which houses a 24-gallon polyethylene potable water tank. A pair of opening



portlights and the overhead hatch deliver ventilation and light, and there's a reading light for night use. A teak bifold door allows privacy. The bureau at the head of the V-berth, top right, provides good stowage for clothes.

The commodious head compartment is to starboard, above left. It's equipped with a single stainless steel sink with hot and cold pressurized water, a vanity, and a vacuum-operated toilet. Natural lighting and ventilation are by means of an opening portlight and a Dorade vent. A separate shower stall with a teak seat sets this 30-footer apart from its contemporaries, above right.

fabricated all the deck hardware, including the portlights. In keeping with tradition, all the deck hardware is bronze and is through-bolted using stainless steel bolts and aluminum backing plates.

The spars and rigging are grounded for lightning protection and all underwater hardware is bonded.

On deck

A 5½-foot laminated-teak bowsprit with two bronze anchor rollers dominates the bow. Only 2 feet of the sprit projects forward of the stem. The aft 3½ feet is on the foredeck, flanked by a pair of bronze deck pipes on the deck and chocks port and starboard on the toerails. Two 8-inch mooring cleats are fitted side by side aft of the sprit.

In addition to the non-skid, on-deck security is provided by 8 feet of teak handrail on each side of the cabintop,

stainless steel bow and stern pulpits, and double lifelines with stainless steel stanchions mounted in bronze bases.

The T-shaped cockpit is 6 feet 9 inches long and incorporates a bridge-deck and 19-inch-deep seats with teak backs. There are three cockpit seat lockers. The one forward on the port side houses four house batteries, the AC compressor/condenser, and the water heater, with some room left for stowage. The starboard locker is aft and is primarily used to house the propane tank. The large lazarette is dedicated to general stowage.

While the 26-inch-wide footwell affords good bracing, the teak seat-backs might become a bit uncomfortable after a while. Forward on the port footwell side is a manual overboard waste pump. On the same side, adjacent to the helm, is the engine's control panel, and a manual bilge pump is

beneath the helmsman's seat. Aft, there's a pair of 2-inch cockpit drains and access for the emergency tiller.

Two 5-inch cleats are mounted on the stern, along with a pair of cowl vents to provide the engine with combustion air and a centerline foldable swim ladder.

Belowdecks

The traditional appearance and high-quality craftsmanship typically associated with Cape Dory Yachts carries belowdecks. The Cape Dory 30 Mk II interior has neither a fiberglass pan nor headliner. It is stick-built, mostly of teak, teak-veneered plywood, and matching hardwoods. The excellent joinery is finished beautifully with varnish. In the V-berth and quarter berth, the hull is covered with a fabric liner. Surfaces in the galley and head compartment are of an off-white plastic



When fully extended, the bulkhead-mounted drop-leaf saloon table, top left, reaches both the port and starboard settees, both of which are 6 feet 3 inches long. The starboard settee converts to a double berth; the port one is a single.

Outboard and above the head of the quarter berth, which is aft of the starboard settee, second left, is a panel for mounting electronic instruments.

Galley equipment includes a gimbaled 2-burner propane stove with oven, a large icebox (which drains to the shower sump), a pair of counter extensions, and ample stowage bins, lockers, and cubbies, third left. The double stainless-steel sink is supplied with hot and cold pressurized water and cold water from a hand pump and has its own seacock and through-hull.

Access to the engine is from behind the three-rung companionway ladder, bottom left, and from a panel located in the quarter berth. In the bilge beneath the engine is a 60-gallon fiberglass holding tank.



laminates trimmed in teak, as is the overhead liner.

From the V-berth forward to the quarter berth aft, the layout is conventional. The head compartment is on the starboard side forward of the saloon, and a drop-leaf table is mounted on the bulkhead that separates them. Across from the head is a large hanging locker with a bureau top and, aft of that, the port settee. While there's stowage behind the settee's seatback, the space beneath it houses the 20-gallon aluminum fuel tank and the evaporator for the boat's AC unit.

Another polyethylene potable water tank is beneath the starboard settee. Its volume of 46 gallons brings the boat's water tankage to 70 gallons.

Bins, fiddled shelves, and cubbies with doors provide stowage above both settees. The sole is teak and holly. Headroom throughout is 6 feet, and the overhead is fitted with long (8½- and 7-foot) teak grabrails on the port and starboard sides.

Aft of the starboard settee is a cozy double quarter berth, beneath which are the starting battery and a very large stowage area with three access points. The U-shaped galley is opposite the head of the quarter berth.

Ventilation and illumination for the saloon and

galley are provided by a single opening portlight, a Dorade vent, the overhead hatch, four large fixed portlights, and the companionway hatch. For nighttime lighting there are three reading lights and four overhead lights.

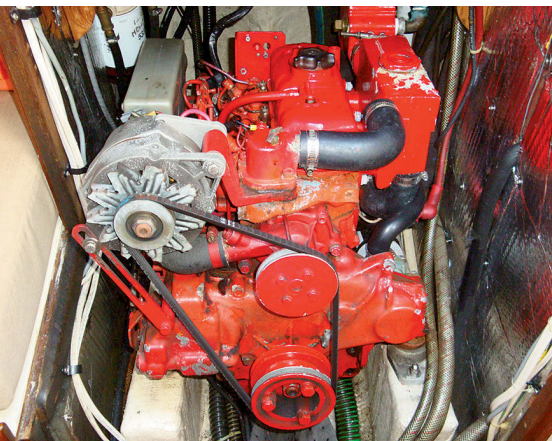
The rig

The Cape Dory 30 Mk II was offered as a sloop, with a cutter rig as a \$1,995 option. While *Tern* is rigged as a masthead sloop, both configurations employ a deck-stepped mast supported by a single pair of cap shrouds, forward and aft lower shrouds, a single pair of spreaders, a headstay, and a backstay. Bridge clearance is 45 feet. The halyards are sheaved internally and the shrouds are fastened to inboard chainplates. The aluminum spars are from Spartan.

The mainsheet leads from mid-boom to a traveler mounted on the cabintop forward of the companionway hatch, and aft from there to a 2-speed Lewmar #6 bronze winch and a cam cleat located on the port side of the aft cabintop. The headsail sheets can be led through cars on either the 10-foot jib tracks (on the sidedecks) or the 5-foot genoa tracks (on the teak toerails) to Lewmar #40 self-tailing bronze winches on the cockpit coamings.

Other rigging includes a topping lift, boom vang, jiffy reefing, and a pair of mast-mounted Lewmar #7 halyard winches and cleats.

Auxiliary power is provided by a Westerbeke 21A diesel engine. This 22-horsepower, three-cylinder power plant is freshwater-cooled and turns a two-blade propeller. As the engine is behind the companionway ladder, access for routine maintenance is good.



Under way

The Cape Dory 30 Mk II is not a light-air boat, nor does it build up speed quickly. To get going, it needs a minimum of about 6 knots of wind, but it really comes alive in medium to heavy air. While the headsail can usually be left alone, it's best to reef the main when the wind gets up to about 18 to 20 knots or significant weather helm will develop. The full keel with attached rudder allows the boat to track well both on and off the wind. With a bit of wind, a pointing angle of 30 degrees to the apparent wind is achievable. The boat doesn't seem to have any bad habits or bad points of sail.

Things to check out

Both the deck and cabintop of the Mk II are cored with end-grain balsa. On older boats it is not uncommon for the core to become wet, resulting

in delamination. The deck should be sounded out around every fitting, especially the chainplates.

On some Cape Dory models, rudders have been known to become saturated, causing delamination. Another problem is osmotic blistering of the hull. These areas can be inspected when the boat is hauled out for routine bottom painting.



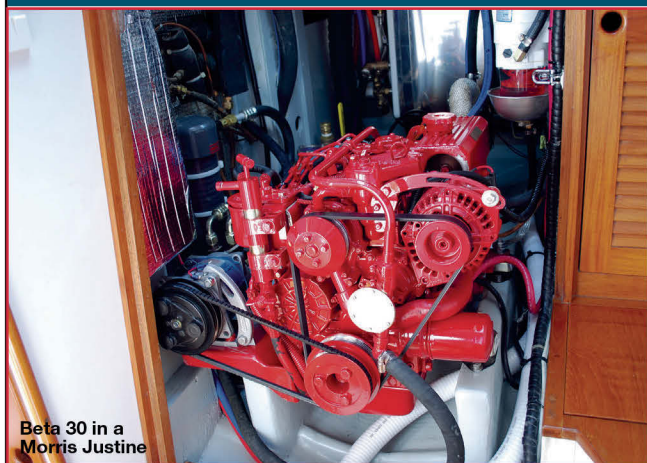
Cape Dory Yachts stuck to its own aesthetic ideas for what a sailboat should look like. As a result, the Cape Dory 30 Mk II and its sisters did not imitate design fads but have maintained their appeal over several decades.

All the deck hardware is bronze, and it's through-bolted with stainless steel fasteners to aluminum backing plates. Because of the differences in electrical potential between these dissimilar metals, it's advisable to inspect the fasteners, and especially the backing plates.

Other areas to check are leaking portlights, especially the fixed ones, and craze cracking of the deck and cabintop gelcoat. While this is often mostly cosmetic in nature, severe cracking can allow moisture into the laminate.

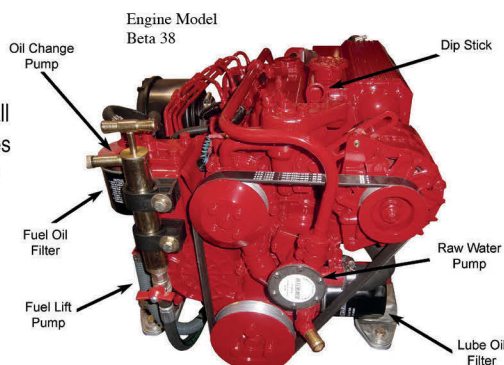
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Engine Model	Vessel
Beta 14	Albin Vega
	Hunter 27 Cherubini
Beta 16	Catalina 30
	Tartan 30
	Cape Dory 28
Beta 20	Catalina 30
	Contessa 32
	Island Packet 27
	Pearson Vanguard
Beta 25	Alberg 35
	Morgan OI 33
	Alberg 37
	Pearson 35

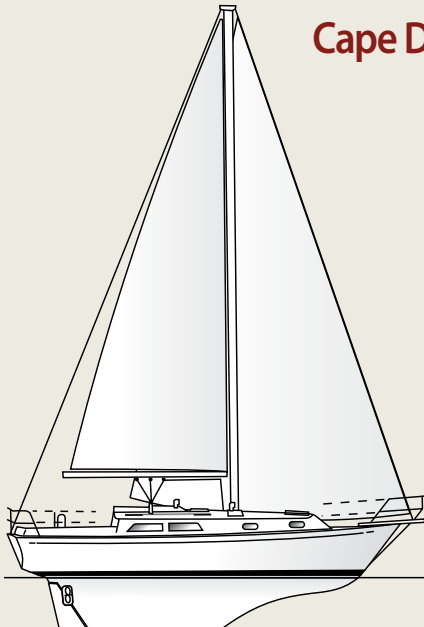
Engine Model	Vessel
Beta 30	Catalina 36
Beta 38	Sabre 38Mk1
	Valiant 37
	Westsail 32
Beta 43	Hinckley B40
	Valiant 40
Beta 50	Bristol 41.1
	Morgan 41 OI
	Morgan 45
Beta 60	CSY 44

Some of our installations

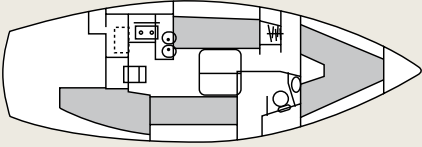
Summary

The Cape Dory 30 Mk II is easily driven and very stable. It is a conservatively designed and solidly built offshore cruiser. Both on deck and below, the boat stands apart from most production sailboats. Its mostly wood interior is warm and inviting. While the boat is not without its deficiencies, the needed corrective action won't break the bank, and the boat is worth it. Depending upon year, condition, and equipment, examples are listed at prices from \$30,000 to \$39,000. 

Gregg Nestor has been a Good Old Boat contributing editor for 15 years. His home port is on Lake Erie, but he has become a snowbird and spends much of the winter in Florida aboard Raconteur II, a Caliber 35. He recently released his fourth book, Twenty Comfortable Sailboats to Take You Coastal Cruising. It might loosely be considered a sequel to one of his previous books, Twenty Affordable Sailboats to Take You Anywhere.



Cape Dory 30 Mk II



LOA:	30' 6"
LWL:	24' 2"
Beam:	10' 6"
Draft:	4' 6"
Ballast:	4,200 lb
Displacement:	10,617 lb
Sail area:	489 sq. ft.
Sail area/disp. ratio:	16.2
Disp./LWL ratio:	336
Air draft:	45' 0"



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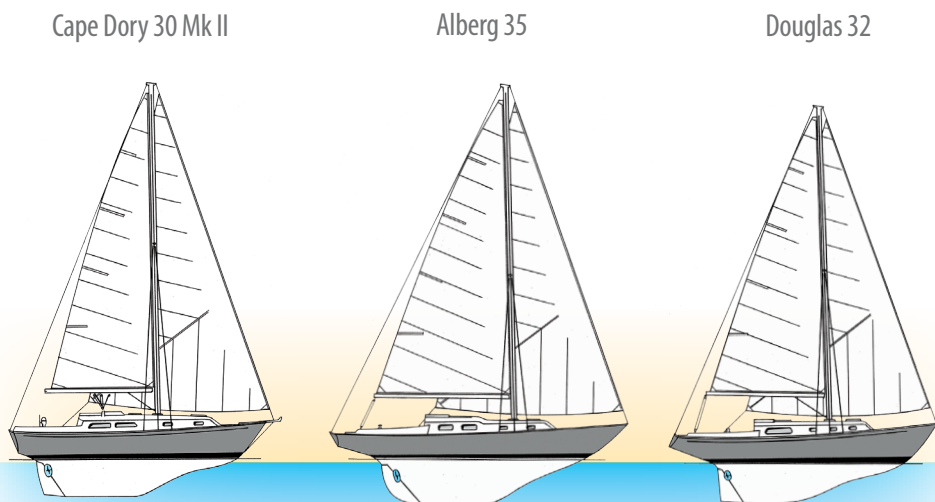
The Cape Dory 30

... and similar, but older, full-keelers

BY ROB MAZZA

Analyzing the performance characteristics of the Cape Dory 30 Mk II presents a bit of a challenge. When you look at the boat from above the waterline, you see a configuration that fits well with its 1986 contemporaries. That is, shorter overhangs and a long waterline for its 30-foot LOA, a rig with a large foretriangle and a smaller main with a higher aspect ratio that shows International Offshore Rule (IOR) influence, and an interior layout that's quite roomy for a 30-footer and includes a generous shower area in an especially large enclosed head. However, below the waterline, you see a hull form with a full keel and attached rudder that is more typical of boats of 20 to 30 years before, not the more performance-oriented separate keel and rudder of its contemporaries. Indeed, in the mid-'80s, even designers of cruising boats, such as the C&C Landfalls, were doing their best to cut away the deadwood between the keel and rudder to reduce wetted surface and improve maneuverability. Ted Brewer's "Brewer's bite" is a modest example. Cape Dory, though, under the unswerving influence of its original designer, Carl Alberg, maintained the full-keel configuration throughout its long history, and never deviated from it.

I should also point out that fiberglass boatbuilders were more than willing to abandon the full keel because of the difficulty of laminating down into a deep sump, especially at the narrower trailing edge where the rudder attached, not to mention the challenges of laminating around the propeller aperture. In some cases this could only be achieved with split molds. The simple canoe body with a bolted-on fin keel and free-standing cantilevered rudder was much easier to lay up. After Carl Alberg's retirement and his subsequent



	Cape Dory 30 Mk II	Alberg 35	Douglas 32
LOA	30' 6"	34' 9"	32' 1"
LWL	24' 2"	24' 0"	24' 6"
Beam	10' 6"	9' 8"	9' 6"
Draft	4' 6"	5' 2"	4' 8"
Displacement	10,617 lb	12,600 lb	11,500 lb
Ballast	4,200 lb	5,300 lb	4,350 lb
LOA/LWL	1.26	1.45	1.31
Beam/LWL	.43	.40	.39
Disp./LWL	336	407	349
Bal./disp.	.40	.42	.38
Sail area (100%)	489 sq. ft.	545 sq. ft.	459 sq. ft.
SA/disp.	16.2	16.1	14.4
Capsize number	1.9	1.7	1.7
Comfort ratio	27.5	34.8	33.0
Years built	1986	1961	1967
Designer	Clive M. Dent	Carl Alberg	Edward S. Brewer
Builder	Cape Dory Yachts	Pearson Yachts	Various

death in the same year that the Cape Dory 30 Mk II entered the market, Cape Dory remained loyal to this "traditional" hull form, even under the guidance of its new English designer, Clive Dent,

who joined the company in 1983. Dent had apprenticed in the Camper & Nicholson's design office in England before moving to the US to work for Dick Carter. His first project for Cape

Mk II ...

Dory was actually a 30-foot motorsailer, which premiered a year before the Cape Dory 30 Mk II.

To find other full-keel production boats to compare to the Cape Dory, we have to go back to the early and mid-'60s. The 1961 Pearson-built Alberg 35 is a logical choice, since it was Alberg who established the Cape Dory design philosophy. The Douglas 32, introduced originally in 1967 by Ted Brewer, is also typical of the breed and stayed in production for many years under a variety of different builders. It started life as the Douglas 31, but was lengthened a foot by raking the transom to give it a more modern profile. Some of the early raked transoms were created by chopping off, or "bobbing," the longer overhangs of older CCA or Metre-boat designs.

Note that all three boats are within 6 inches of each other in waterline length, even though their LOAs differ by more than 4 feet. This shorter length often presented a marketing problem when selling boats by length, since weight really had a greater influence on cost.

The more "modern" Cape Dory has the lightest displacement and the lowest displacement/LWL (D/L) ratio of a still-conservative 336, although the Douglas at 349 is not far behind. The Alberg's hefty D/L of 407 reflects the heaviest displacement on the shortest LWL. The power-to-weight ratio, as expressed in the sail area/displacement ratio (SA/D), shows the Cape Dory and the Alberg at a respectable 16, while the Douglas is a tad underpowered at 14.4.


The most notable change in design philosophy from the 1960s to the 1980s can be seen in the substantial 1-foot increase in beam on the Cape Dory, which not only reflects the influence of the IOR, but also is helpful in achieving that improved interior volume mentioned above. The increase in beam also contributes to an increase in stability. Even with that greater beam, due to her moderate displacement, the

Cape Dory still has a suitable capsizes number of 1.9 which, being under 2, is acceptable. The narrower beams and heavier displacements of the Alberg and Douglas produce a capsizes number of 1.7, a figure not often found in boats of this size.

The heavier, longer, and narrower Alberg and Douglas have a more comfortable motion, as reflected in their comfort ratios in the mid-30s. The Cape Dory's at 28 is still quite reasonable for a boat of this size.

The more modern Cape Dory is the only one of the three to incorporate a bowsprit. With the headsail tacked well aft, the sprit's real purpose seems to be more associated with anchor storage and retrieval than greatly extending the

foretriangle, although that might have changed with the optional cutter rig.

In the Cape Dory 30 Mk II we see a builder adhering to an older design tradition, while at the same time trying to incorporate more modern design features to make its product marketable against its competitors and even its own older product. I'd say Cape Dory pulled it off pretty well. 

Rob Mazza is a Good Old Boat contributing editor. He set out on his career as a naval architect in the late 1960s, working for Cuthbertson & Cassian. He's been familiar with today's good old boats from the time they were new, and had a hand in designing a good many of them.



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An Icebox Becomes a Fridge

One boat's discard is another's chill deal

BY TOM ALLEY

One day at the dock, my slip neighbor James asked me if I had a need for a refrigeration unit on my 1965 Alberg 35.

"I had to replace mine last year," he said. "My dad fiddled around with it, found a leak, and got it working again, but I wouldn't feel right selling it to someone and then having it stop working six months later."

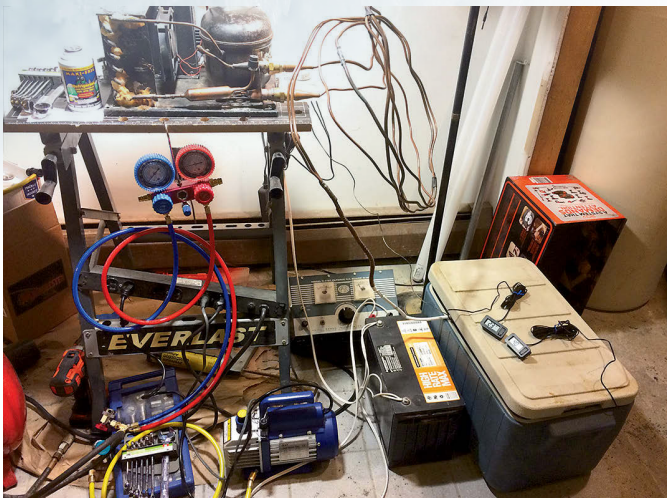
As I was still lugging ice to keep the beer cold, I didn't see how I could refuse, and found myself in possession of an Adler/Barbour refrigeration unit that once lived in a Tartan 31. The labels on it were not readable, but after some searching on the internet I was able to download a couple of manuals that looked to be appropriate to the model.

Testing before investing

Before installing it, I wanted to make sure that the unit would function long enough to warrant the effort, so I set myself up in my basement to test it. Initial tests went badly. Pressure gauges I connected to the unit showed me there was no refrigerant. After investigating, I discovered that one of the couplings between the compressor and the evaporator was not torqued down sufficiently to create a proper seal.

I first charged the low-pressure side of the refrigerator with 60 to 70 pounds per square inch (psi) of compressed air and monitored the gauges to see whether the pressure dropped over some period. Three days later, the gauges were still reading the same pressure, so I declared the leak to have been found and fixed. Next, I recharged the unit with refrigerant and ran it for a while on the workbench.

Because the unit had been manufactured in the early 1980s, it had been charged with the now-banned Freon, also known as R-12. For most mobile applications, R-12 has been replaced



Before installing his free refrigeration unit, Tom set it up on a workbench in his basement to make sure it would function, facing page. Satisfied that it would at least get cold, Tom further tested the evaporator by placing it in a cooler with assorted beverages, above left. After several days, ice forming on the evaporator verified that the evaporator was getting cold enough to be of service, above right. Initial temperature readings taken inside and outside the evaporator backed up the visual evidence, at right.



with R-134a. Unfortunately, the two aren't simply interchangeable and do not perform the same. To use R-134a, I would have to purge and clean the unit, because the lubricating oil used with R-12 (typically mineral oil) is not compatible with R-134a. Having read several stories about R-134a retrofits ending badly after six months because of compressor problems, I was hesitant to mess around with the compressor lubricants. I also knew I could expect up to a 10 percent reduction in performance from replacing R-12 with R-134a.

A few days later, I came across a product called Maxi-Frig, which is advertised as a drop-in replacement for R-12 refrigerant. The supplier asserts that Maxi-Frig is compatible with all types of compressor oils (mineral, synthetic, ester, and PAG). Further research revealed that the product is a mixture of propane and isobutane (usually referred to as a "hydrocarbon-based" or "HC-based" refrigerant) that mimics the characteristics of R-12. It actually improves the performance of the refrigeration system by about 6 percent and, making it even

more attractive, only one-third as much Maxi-Frig 12a is needed to replace a given amount of R-12. Some states ban the use of HC-based refrigerant in automotive applications due to its flammability, but since I have 10 pounds of liquified propane on board for the galley stove and a full gas-detection system in the bilge, I didn't think a few extra ounces of propane and butane would bring any significant increase in risk. I ordered some Maxi-Frig and compressor oil.

I evacuated the system, bled in some refrigerant, and cycled the compressor a few times to distribute the refrigerant throughout the system. Once I had about half of the refrigerant that I thought I would need, I started up the unit and adjusted the charge to be approximately where I wanted the temperatures to be. (When charging an AC unit, the temperatures attained in the evaporator and compressor are directly related to the refrigerant pressures.) I then added oil to ensure that the compressor was well lubricated.

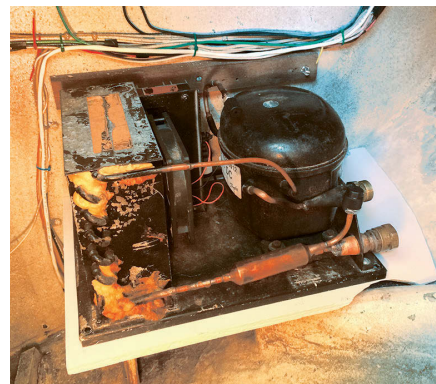
It wasn't long before the evaporator started to "sweat" and feel cold to the

touch, and it soon had a thin layer of frost on it. A quick look through a thermal camera I borrowed from work confirmed that everything was working as it should.

The next step was to simulate "field conditions," so I loaded a picnic cooler with soda and beer and put the evaporator into it. I had a couple of digital thermometers available and placed one in the "freezer" (the interior of the evaporator) and the other in the "refrigerator" (the section with the beer and soda). After a couple of hours, the temperature gauges showed promising numbers.

Flush with success, I let the system run for about six weeks, occasionally checking the battery charger to make sure I wasn't over- or under-charging the battery, and also sampling a beer or soda from time to time to ensure it was at the optimal temperature. Because the refrigerant lines prevented me from completely closing the lid to the cooler, the "freezer" did ice up over time, which I took as a favorable sign. By this time, my teenage sailing crew were planning cruising menus that included ice cream.

A shelf at the forward end of the starboard cockpit locker offered a good location for the compressor, near right. (Behind the pegboard is the main distribution point for all the AC and DC electrical wiring.) Before mounting the compressor, Tom enlarged the shelf by fastening a piece of plywood on top of it, far right.



On to the installation

As my confidence in the system grew, I shifted my focus toward the installation phase of the project, and my first task was to figure out where to locate all the components and how to route the refrigerant lines between them. Because the refrigeration unit is air-cooled, it had to be mounted where it could breathe and shed the heat it pumped from the icebox.

Fortunately, the space under the Alberg 35 cockpit is large enough to satisfy Adler/Barbour's requirements (about 100 cubic feet). A small shelf already glassed into place at the forward end of the starboard cockpit locker immediately aft of the icebox, and adjacent to the main electrical distribution point in the boat, would allow for straightforward routing of the electrical wiring as well as the refrigerant lines.

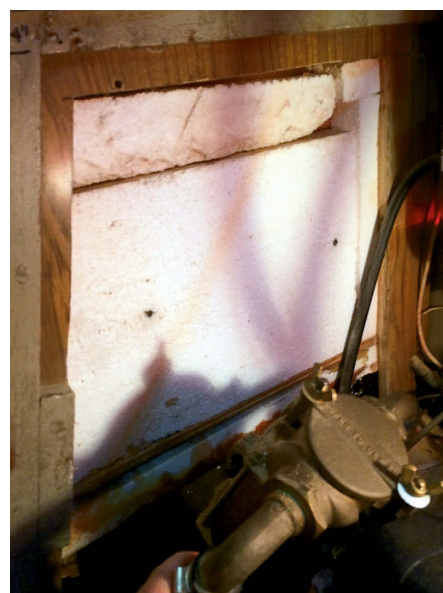
The compressor footprint was slightly larger than the shelf, so I cut a piece of ½-inch plywood larger than the shelf, sealed it, painted it, and screwed it into place. I then bolted the compressor and condenser to the shelf.

Getting at the icebox posed a challenge. As on most boats, my Alberg 35's icebox is a built-in component of the interior cabinetry installed before the deck was fitted. I would have to open up at least one bulkhead simply to gain access. An extended trip through the New York Canal system the year before had revealed the engine's ability to melt ice in the icebox at a fantastic rate, so I also had an incentive to upgrade the insulation however possible.

Using an oscillating multi-tool, I cut through the bulkhead between the engine and the icebox. Removing the panel answered most of the questions I had about the icebox design and

construction. The icebox itself is made of plywood, and the interior is painted. The insulation was solid 2-inch-thick Styrofoam around the top, sides, and bottom. The piece covering the bottom had fallen off at one end, which probably contributed to the rapid ice melt from engine heat.

To determine where to locate the evaporator coil, I made detailed measurements of the inside of the icebox. After some deliberation, I decided to locate the evaporator coil near the aft end of the icebox, where it would interfere least with the icebox opening and the upper "shelf" of the icebox itself. I drilled a 1½-inch hole through which to pass the refrigerant line and couplings, and for an additional pair of wires for the future installation of a small circulating fan to help equalize temperatures within the icebox cavity. I used standoffs to create



Tom marked the bulkhead separating the engine compartment from the icebox compartment where he would cut it out to gain access to the icebox, at left. Removing the bulkhead, center, exposed the icebox insulation, which was 2-inch-thick Styrofoam blocks simply stacked around the icebox with little effort made to seal the gaps between them, at right.

a 1-inch space between the evaporator and the sides of the icebox.

While I was at it, I decided to install a couple of temperature sensors so that I could ensure that future payloads of egg salad remained domesticated while being stored. I placed one sensor inside the evaporator (which I hoped would become the “freezer” section of the box) and the other sensor high in the forward end, where I believed the warmest temperatures might occur. I located the refrigerator thermostat/control here, too, figuring this would provide the most pessimistic reading within the box and therefore help me prevent any food from going bad.

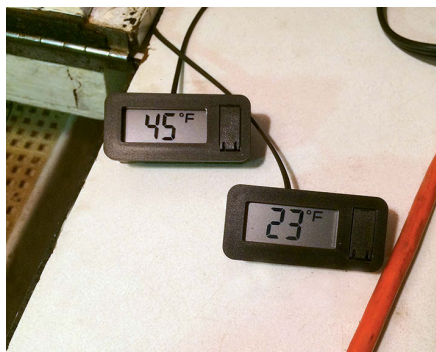
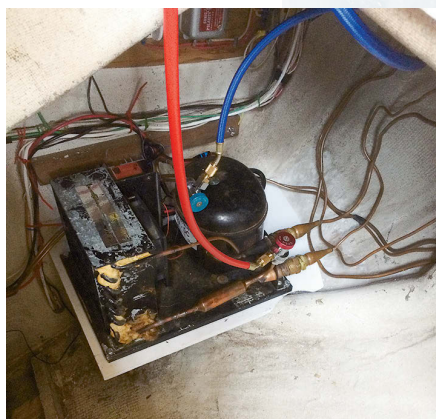
I snaked the refrigerant lines from the icebox to the compressor, connected them, and torqued them to specifications to ensure a good seal. After wiring the compressor into the boat's DC distribution, I powered the unit on and charged it with refrigerant and oil.

Reassembly and insulation

Because the hole in the side of the icebox was rather large, and condensation in this area was likely, it had to be sealed with something that was moisture-resistant. I cut a piece from the side of a gallon plastic milk jug and glued it into place with TotalBoat Seal. With this arrangement, I can remove the seal should the time come to replace the refrigeration unit.

Before reinstalling any insulation, I powered on the system and allowed it to run overnight, and checked temperatures and pressures to verify that there were no leaks. The temperature gauges showed promising results, and the pressure gauges held steady. This gave me the green light to proceed with rewrapping the box with insulation and putting back the bulkhead between the engine and the icebox.

For the new insulation, I used polystyrene foam panels with aluminized faces to help reflect away heat. These panels, which I obtained from Lowe's, are rated at R-5, which should slightly improve resistance to heat from the adjacent engine compartment compared to raw Styrofoam, which is rated R-4. I sealed the seams with foil tape, then placed a second layer of



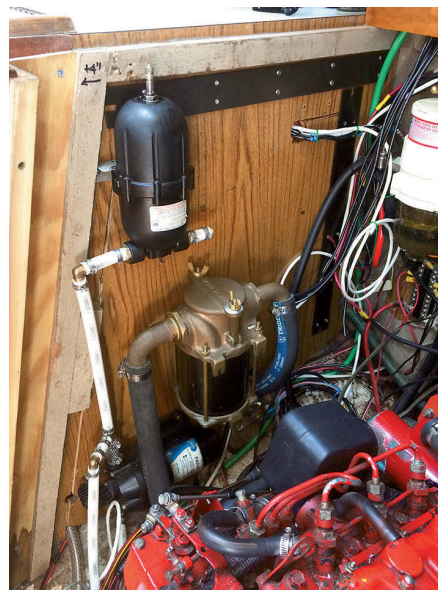
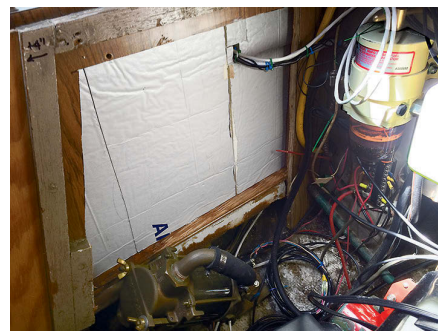
Before closing everything up, Tom connected gauge hoses to the compressor unit so he could draw down a vacuum prior to charging the compressor with refrigerant and oil, at top. In initial testing on the boat, the gauges showed satisfactory temperatures in the refrigerator and freezer, above.

panels over the first with the seams in different places.

The drains in the original icebox emptied into the bilge, and also provided an escape route for cold air to leak out. While everything was apart, I rerouted the drain tubing to form a trap where condensate could accumulate and form a seal to minimize further leakage. I then fixed the detached Styrofoam insulation back into place and added insulation beneath the icebox in such a way that it could not fall away from the icebox again.

With the insulation work completed, I replaced the bulkhead and secured to it the water strainer for the engine and the pressure water pump and accumulator.

Because of space constraints in the engine compartment, I cut some additional rigid foam panels to fit inside the icebox to increase the insulation thickness to 3 inches on the bottom and the side facing the engine. While this does reduce the volume of the icebox, because I no longer carry ice, there is still a net gain in storage capacity.



Tom fitted two layers of new aluminized-foam-board insulation around the icebox, staggering and taping the seams, at top. He restored the bulkhead, using aluminum strips to sister it in place, above.

Resources

Adler/Barbour user manuals can be found with an online search. One source is:

baymarinesupply.com

Maxi-Frig MX-134a & R12 refrigerant

www.maxifrig.com

or web search for resellers

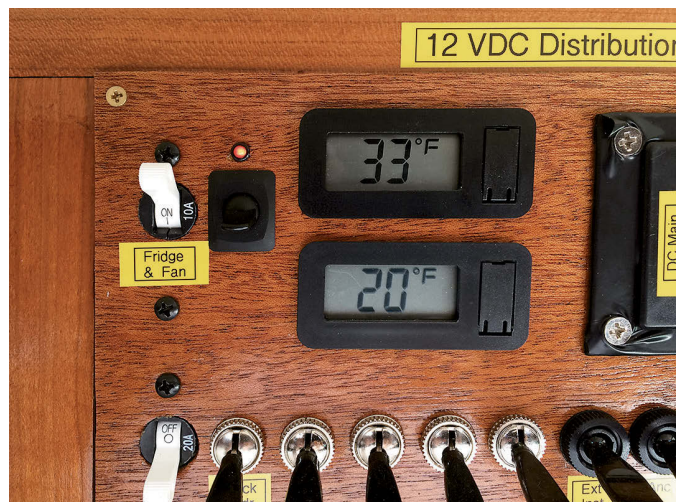
TotalBoat Seal

Jamestown Distributors:

www.jamestowndistributors.com

Polystyrene insulating panels

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To test the refrigerator, Tom stocked it for an afternoon sail with the thirsty crew, at left. Tom installed temperature gauges in the boat's electrical panel next to the circuit breaker for the compressor and a switch to control a small circulating fan in the refrigerator, at right.

The cruise test

To test the results of all my work, we went on a weeklong cruise. Our crew drew up a menu of meals, wrote up a list of provisions, and set out for the grocery store to pick up some perishable items along with beer and soda. Over the course of the week, we enjoyed a number of cold beverages, and the temperature gauges gave us confidence that none of our food had gone bad. While we were unable to make any ice cubes, that might be possible in the future if I add a door to the "freezer" compartment.

Battery monitors in the boat's electrical panels showed that the refrigerator draws around 6 amps when running, making it a significant load on the house banks when we are anchored out

overnight. Along with other house loads, refrigeration has increased our energy needs to approximately 140 amp-hours per day when we are under way, necessitating a well-functioning alternator on the motor to recharge the batteries daily. Fortunately, *Tomfoolery* is equipped with two house banks, each with a capacity of 200 amp-hours.

I also noted that we did not hear the compressor cycle very often, so I may need to tweak the refrigerant charge.

Overall, installing refrigeration was well worth the effort and has raised our standard of living aboard *Tomfoolery* significantly. In the future, I plan to add a small fan to circulate air to keep temperatures a bit more even throughout the icebox. ⚓

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

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Sailing for the Sightless

The visually impaired rely on their other senses to keep them on course

BY ALEC LIGUORI



We sailors often say that much more than sight is involved in sailing, that feeling is just as important as seeing — we *feel* the direction and intensity of the wind or the heel of the boat more than we *see* them. But would we really be able to sail comfortably and confidently if we were blind? Can we even imagine it?

I have been sailing — cruising as well as racing and teaching — for more than 20 years, but only two years ago discovered the world of blind sailing. Having recently moved to the San Francisco Bay Area, I was looking for sailing opportunities and stumbled upon a chance to instruct people who are blind and want to sail. That opened a whole new world to me, a world that has continued to expand and deliver wonderful and enriching experiences.

Despite my expertise as a sailor, I was quite nervous the first time I went out as a sailing instructor on a J/24 with two people who were visually impaired, and I was very grateful to have had the support of another sighted instructor on board. However, my tension dissolved almost as soon as we set sail and I saw the incredible sensitivity of our two students to wind, heel angle, sounds,

and other non-visual inputs. They were a sweet recently engaged couple who had sailed only once before. Their enthusiasm, delight, and readiness to learn were contagious. They eagerly took turns steering the boat and trimming the mainsail. The only interventions we two sighted instructors made, for safety reasons, were jib trimming, course directions, and docking.

As we sailed around the area of San Francisco Bay behind Treasure Island, we instructors painted the scene around us in words for our visually impaired students. While they steered and trimmed, we offered only the minimum input necessary and answered their questions. For example, I might offer the student at the helm guidance on how much to move the tiller to point the boat more into the wind or to bear away. I might tell the student trimmer how much sheet to ease to trim the mainsail. Normal practice in this kind of instruction is to use a numeric scale to give the students relative quantitative information, such as 1 up, 2 up, 3 up, for the

helmsman to point the boat more into the wind, or 1 down, 2 down, 3 down, to bear away.

This first experience really opened my eyes and made me want to engage more with the world of blind sailing. As I continued volunteering with Blind Sail SF Bay, and got involved with the Bay Area Association of Disabled Sailors (BAADS), I discovered something astonishing: organizations in the Bay Area and other locations in North America and around the world hold

Catalina Island, an offshore destination for vision-impaired sailors, at top, who know the feel of a J/24 heeled at 32 degrees, inset.



Kathy tying lines



Mary steering



Luanne tending

**Visually impaired women
under sail to Catalina.**

fleet and match-racing regattas for sailors who are blind!

A fleet regatta involves several boats with crews of four, two of whom are sighted and two of whom are blind. The sighted crew oversee the jib, foredeck, and tactics (the tactician is not allowed to touch any of the sail controls), while the blind members of the crew work the helm and mainsail trim from the cockpit.

In the blind match race, on the other hand, all the sailors are visually impaired and the course is set around buoys that emit sounds. The sailors use those sounds to judge their range and bearing from the buoys, and judge where the competing boat is using the audible tack indicators fitted on each boat. Other than the use of the audible equipment, the boats and rules of blind match racing are identical to those used by sighted crews.

Incredible as this might seem, the most amazing aspect of this feat is the way blind sailors process the information they receive from their environment. I learned a lot about their

techniques from Walt Raineri, director of blind sailing at BAADS. Raineri says he attempts to internalize a visual image to keep the course and the other boats he places on a mental map. He adds that it's even more important to "understand the algorithm to employ in a given situation so that I can react, in real time, to changing circumstances."

Raineri started to go blind in his mid-40s, 12 years ago, because of a hereditary disease, and lost 95 percent of his vision within five months. Remarkably, before going blind he had never sailed. He started sailing as a way to "keep the walls from caving in," his description of the feeling he experienced after losing his sight.

Going blind as an adult required many adaptations, several of them practical but many of them psychological. And sailing, for Raineri, was one of the keys to his successful adaptation to his new condition.

Raineri sees life in general as a series of steps that each person accomplishes on a daily basis, and sailing is just a


very special task in which we have to apply a series of steps to get things done. Acknowledging that blind sailors cannot see objects that might be hazards, such as a floating log or another boat, the acts of sailing and sailboat racing can be successfully accomplished by the application of algorithms, using the auditory information (sound buoys, waves slapping the keel, wind blowing) as well as tactile data (points of contact of the body on the boat, the wind on the face, neck, and ears, the heeling of the boat, and the feel of the helm).

I had the opportunity to witness this algorithmic approach the couple of times I went sailing with Raineri and I was his eyes. Once, practicing a man-overboard drill, he was at the helm, listening to my constant feedback and directions as to where the "person" was in the water with respect to the boat. But Raineri was also listening to various other sounds. He was feeling the wind on his face and the degree of heel with his body.

Personal drive, sharper awareness, a methodological approach, and keen sensitivity are traits I have witnessed in other visually impaired people with whom I have sailed.



Alec is the lookout and coach for a blind crew sailing a J/24 on San Francisco Bay.

impaired, I know that *feeling* really is the primary sense necessary on a sailboat. 

Taking it offshore

One recent summer, I had the opportunity to be the lead instructor and skipper for one of two boats making an excursion organized by the non-profit organization Peace of Adventure. I was in charge of a Dufour 375 that I and a small crew of sighted volunteers sailed from Los Angeles to Catalina Island with a half-dozen women aboard, all either disabled veterans or visually impaired. The five-day excursion included not just lots of sailing and classroom instruction but camping and hiking on the island. Once again, I had the responsibility to teach people with a variety of sailing skills and disabilities how to sail, but I also had the opportunity to learn from them.

When they took turns at the helm or trimming the sails, I saw the ease with which these disabled (mostly blind) participants, many of whom hadn't been on the water before, oriented themselves on the boat, the quickness with which they learned the workings of the various parts and mechanisms, and the keen sensitivity with which they maneuvered the sailboat. It was really eye-opening. I intervened only when

asked for help or directions; otherwise I spent my time describing to them the surrounding landscape.

I'll never forget the controlled and serene voice in which Laura, steering as we neared the island and the wind freshened, said to me: "Alec, I'm a little out of my depth, would you mind taking the helm?" So I did, while the other ladies continued sheeting in and out as necessary as we tacked toward the island.

From my wonderful experiences sailing with people who are visually

Alec Liguori, PhD, has more than 20 years of sailing experience from racing to cruising and from boat deliveries to maintenance and instruction. She is driven by her passion for sailing, science, and education, which has led her to actively coach special sailing seminars for women. She also teaches STEM subjects through sailing and gives talks on the "Physics of Sailing" as a way to reach out to as many and as diverse audiences as possible. Alec currently works as a physics lecturer at San Francisco State University.

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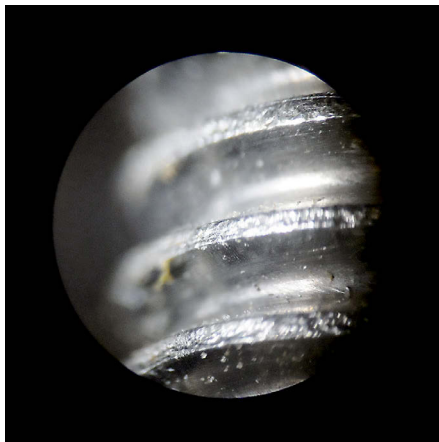
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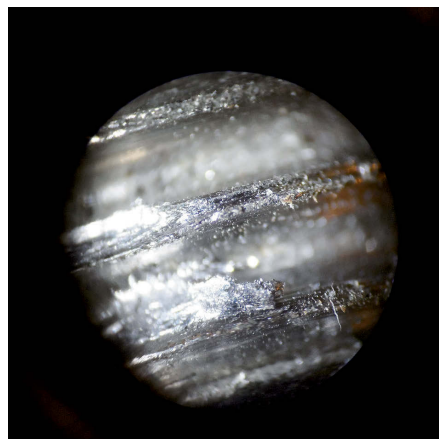
Those nightmare threads that become unthreadable can be avoided

BY DREW FRYE

Sailing is all about feel. And sometimes it's through feel we get the first hint that things are about to go all pear-shaped . . . that funny feeling when the helm goes light because the rudder is ventilating and a knockdown



Seen through a microscope at 150x magnification before galling, this $\frac{5}{16}$ -inch 316 stainless steel bolt (which was not new) showed some evidence of wear, but no evidence of galling, and it fit the nut well. The nut was new.



Minutes later, on the same bolt, debris is evident and sections of metal have been torn out at a spot about $\frac{1}{4}$ inch away from where the nut seized completely. This damage was not visible to the naked eye.

is imminent unless you blow the chute, right now. On a beach cat, it's the gust that is followed by slight lift in the transom, indicating that she's about to dig in and pitchpole unless you bear off hard and get both feet under her.

So it is with nuts and bolts — every fault has a different feel, and the experienced hand can differentiate between threads that are dirty, bent, too tight, corroded, crossed, or on the verge of stripping or . . . galling. Continue tightening after any of the danger signs present, and ruined hardware will likely be the result. With threads, there are situations to be avoided, precautions to be taken before tightening begins, and measures that can be taken once a job is in progress.

Most of us have encountered static corrosion-based seizing, which results from expanding corrosion products filling the thread clearance and jamming the fitting or the nut. It also roughens the surfaces of the mated threads. Prevention consists of avoiding certain metal combinations, using a good anti-corrosion product on the threads, and in cases where the bolt or nut sticks anyway, spraying on the PB B'laster and waiting. A few good smacks on the bolt head with a hammer might loosen the corrosion.

Galling is distinct from corrosion-based seizing in that it occurs while the nut is moving. On the microscopic level, metal surfaces are never perfectly smooth. So long as the loads are moderate and there is lubrication, the microscopic peaks slide over each other without significant damage. However, in the case of metals that are protected by hard oxide films, when the film begins to shear off, debris accumulates in the low areas. When too much debris clogs the threads, they will gall because, as friction increases, heat builds, and bits of good metal begin to tear away from the threads, often virtually welding the parts together. Aluminum, stainless steel, and titanium are all prone to

galling, but less susceptible metals, including hardened steel, can fail if enough risk factors are present.

The classic trouble spots for sailors are turnbuckles, swageless rigging terminals (Sta-Lok and Norseman), and Swagelok tubing fittings, because all these threaded connectors are turned under high load for a considerable distance. Fortunately, if as many of the causal factors as possible can be eliminated, galling is avoidable.

Smooth the threads

Before installing a fitting, test-fit it by hand, looking for an easy fit without binding. The threads should not be overly tight or damaged. Female threads are cut with a tap, and the threads can be rough if the tap was dull, improperly lubricated, fed too fast, or if the tap drill was too small. Male threads, which are typically formed by rolling, are stronger, smoother, and can often be identified as slightly larger than the stud diameter. Run the threads together as many times as required until they turn smoothly.

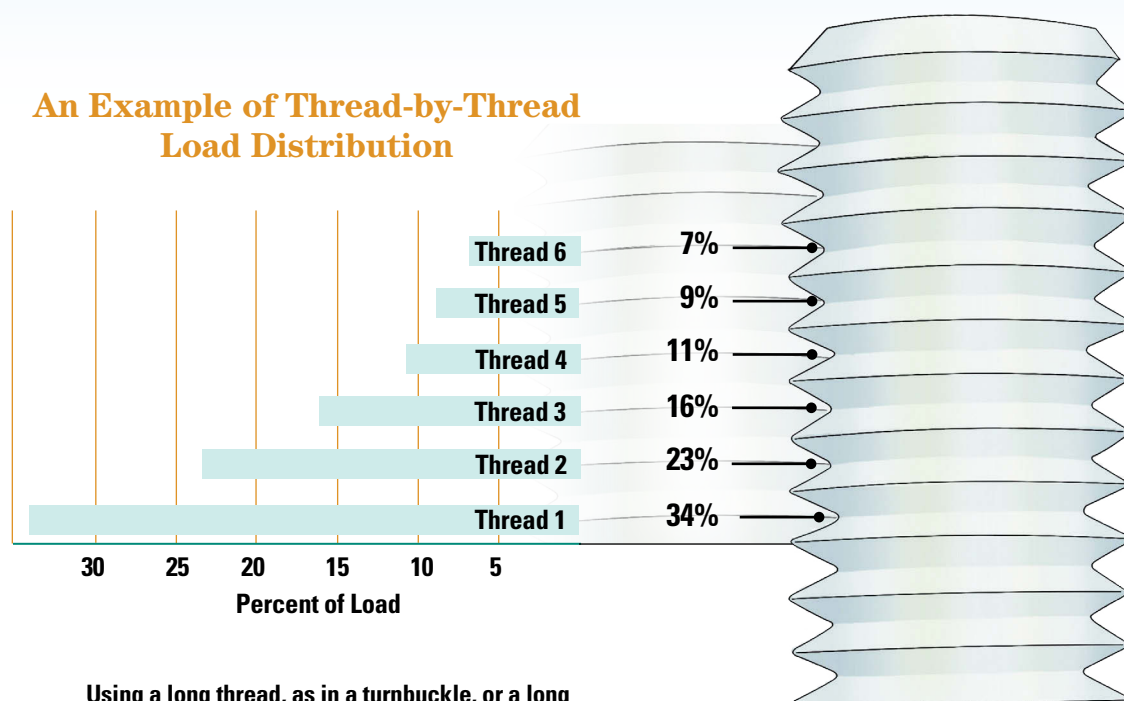
Clean the threads

Even traces of salt and lime greatly increase friction as the threads come under load. Old fittings have a thicker oxide film, and polishing the male part with a wire brush can help.

Lubricate the threads

Any grease will help, but the best choices are high-viscosity products that offer good corrosion protection and high wash-out resistance. In practice and in lab testing, LanoCote, Tef-Gel, and Loctite Marine Grade Anti-Seize get high marks. Avoid non-marine anti-seize products, because these often contain metals, which in a marine environment will lead to increased dissimilar-metal corrosion. Loctite 242 is a good solution for swageless rigging fittings, as it lubricates while ensuring they stay tight.

An Example of Thread-by-Thread Load Distribution



Using a long thread, as in a turnbuckle, or a long nut decreases thread loading only by a little.

Slow down

Friction causes heat. Even when a hand wrench is used, a nut can become too hot to touch on the outside if turned under high tension for more than a short distance. Imagine how hot it is in the contact zone. Fifteen seconds per revolution may seem slow, but is common engineering advice for turnbuckles and fittings that are adjusted under load.

The effect of heat

Frequent exposure to high temperatures — engines, for example — increases risk by thickening oxide coatings and because of extreme pressures resulting from thermal stress. Although I recommend only marine anti-seize products for most boat applications, conventional products are effective on the engine, because heat generally boils out the water.

Relieve tension

Threads are not intended for pulling parts together. One of the most commonly encountered galling failures on sailboats occurs in turnbuckles. Tuning the rig requires turning the threads while they are under significant load, which is not something standard bolt threads are good for (acme threads, such as those found in vises and jacks,

are designed for this). Before adjusting a turnbuckle, remove as much tension from the rigging wire as possible. Often this can be done by simply clipping a spare halyard to the chainplate and winching it tight. For tubing fittings and swageless wire terminals, the best we can do is lubricate and tighten slowly.

For common bolting applications, try bringing the parts as close together as possible first, so that no more than fingertip pressure is required until the last turn. If the application uses multiple bolts, bring them up evenly so that none are tightened under high load until the last turn.

Do not exceed the recommended torque. Yes, the bolt will hold more than that, but stainless steel is already at risk of galling at these values. If your gut tells you it needs to be tighter so it doesn't come loose, use a second locking nut or a thread-locking compound, or consider a larger bolt.

Choose coarse threads

Although fine threads allow for fine adjustment, they make little sense in stainless steel. There is less room for corrosion products and oxide breakdown, and they are more prone to both galling and stripping. Use coarse bolts where there is a choice.

Working with longer threads

Turnbuckle threads are much longer than standard nuts on the theory that this reduces loading per unit area and allows adjustment under load. This is largely myth (see illustration above). Because the bolt stretches under load, only the first four to six threads carry any material portion of the load; the rest are just along for the ride. It's sort of like playing tug-of-war with a rubber band — it's hard to share the work if you can't move your feet (the turnbuckle barrel is thick and does not stretch as much as the stud.)

If you have a nut that simply must be tightened for a long distance under load, lube it well, and use two nuts threaded on until they are just touching. Tighten the second nut just until the flats align within the wrench (with a 12-point box wrench or socket they can be half a flat off) and tighten the two nuts as one. This doubles the thread area, reduces the point load some, and is often enough to prevent galling and stripping. I've used this cheat in many tests where I've purposely over-tightened bolts over considerable distances to test backing plates, washers, and cored-composite strength. In general, the bolt will break before it galls or strips.

Torque Guide for Stainless Steel Bolts (Based on ASME Standard)

Galling in Turnbuckles – Jeremy McGeary



My first encounter with galling was in 1976 when I was working at Gulfstar Yachts, which Vince Lazzara, an early investor in Columbia Yachts, founded in St. Petersburg, Florida, after his non-compete agreement with Columbia expired.

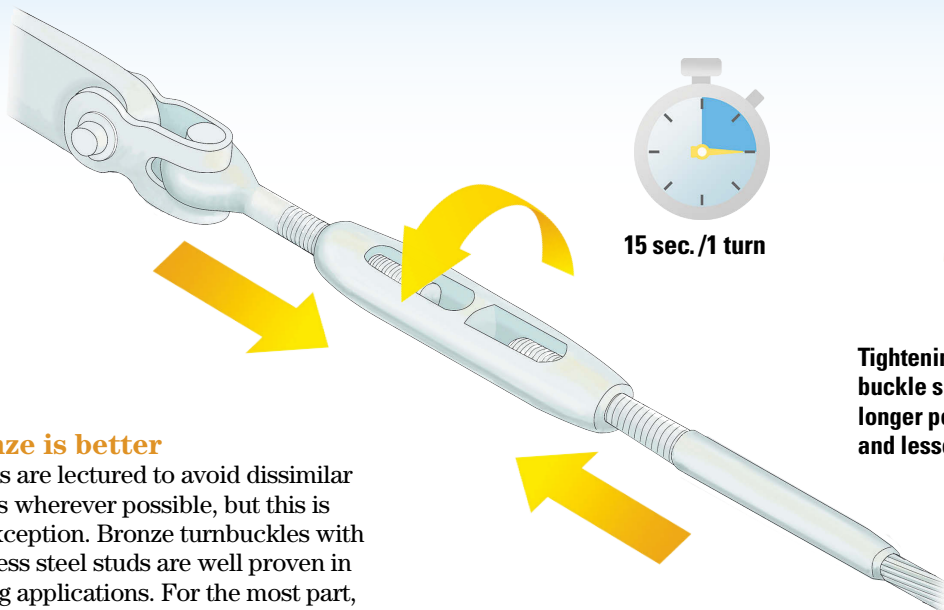
Gulfstar's first boats were motorsailers and trawlers that used the same hulls. Lazzara's aim, in the time of oil embargoes, was to lure customers from his previous venture, Sea Rover houseboats, into sailboats. His next move was to design "proper" sailboats, and when he started selling the Gulfstar 50 into the charter fleets of Stevens Yachts and The Moorings, he knew he had reached a more sophisticated market, and took steps to improve the quality, and the perception of quality, across the Gulfstar line.

One way he did that was to use hardware and fittings from manufacturers with good reputations, and among those fittings were Navtec stainless steel turnbuckles. It wasn't long, though, before he began to receive complaints from Gulfstar dealers who, when rigging boats they had sold, were running into problems with the turnbuckle threads galling. Gulfstar's rigger encountered the same problem at the company's commissioning yard. Lazzara was displeased, and the upshot was that Navtec subsequently supplied turnbuckles with stainless steel bodies and bronze studs. Problem solved.

Torque in inch-pounds

SS Alloy	304	304	316	316
Fastener	dry	waxed	dry	waxed
#6 x 32	10	5	10	5
#6 x 40	12	6	13	6
#8 x 32	20	10	21	10
#8 x 36	22	11	23	11
#10 x 24	23	11	24	12
#10 x 32	32	16	33	16
1/4 x 20	75	37	79	39
1/4 x 28	94	47	99	49
5/16 x 18	132	65	138	68
5/16 x 24	142	70	147	73
3/8 x 16	236	117	247	122
3/8 x 24	249	128	271	134
7/16 x 14	376	186	393	195
7/16 x 20	400	198	418	207
1/2 x 13	517	256	542	268
1/2 x 20	541	268	565	280
9/16 x 12	682	338	713	353
9/16 x 18	752	372	787	390
5/8 x 11	1110	550	1160	574
5/8 x 18	1244	616	1301	644
3/4 x 10	1530	757	1592	783
3/4 x 16	1490	738	1558	771

Note that the same clamping force is created with less torque on waxed threads than on unwaxed threads. Exceeding these values is asking for trouble from both strain and galling.



15 sec./1 turn

Time the Turns

Tightening an all-stainless-steel turnbuckle slowly — taking 15 seconds or longer per turn — reduces heat buildup and lessens the chance of galling.

Bronze is better

Sailors are lectured to avoid dissimilar metals wherever possible, but this is the exception. Bronze turnbuckles with stainless steel studs are well proven in rigging applications. For the most part, open turnbuckles are usually bronze or chrome-plated bronze, and closed-body turnbuckles are 316 stainless steel, but check to be certain; some open turnbuckles are stainless steel, and some closed-body turnbuckles have bronze inserts.

In general, stainless steel turnbuckle bodies are only suitable for small-boat rigs and lifelines, neither of which need to be tightened under high loads.

Mixing stainless steel alloys is also a possibility. Using 304 nuts on 316 stainless steel bolts reduces the likelihood of galling while allowing the more corrosion-resistant material to be used for the bolt.


Hot-dipped galvanized nuts

Although this is a slightly different problem, it's worth mentioning. Hot-dipped galvanized nuts have greater thread clearance to allow for the coating and for any corrosion products that may accumulate. Using zinc-plated nuts with hot-dipped bolts is a sure recipe for seizing,



Just over-tightening a bolt against a compressible material like soft wood can induce galling, especially in stainless steel. The bolt did not fail in tension, but twisted off when the nut seized.

either during installation or within a few years. Always match hot-dipped with hot-dipped.

Like preventing sailing mishaps, avoiding galling is about taking a few preventive steps based on understanding the cause. 

Drew Frye draws on his training as a chemical engineer and pastimes of climbing and sailing when solving boating problems. He cruises Chesapeake Bay and the mid-Atlantic coast in his Corsair F24 trimaran, using its shoal draft to venture into shallow and less-explored waters.

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Subscribers the World Over

Most *Good Old Boat* readers sail in US and Canadian waters, but our humble magazine crosses other borders to reach a smattering of subscribers all around the globe. Here are a few of them.



"She's a 2002 Hawk 20 dayboat, a ballasted centerboarder, which I normally keep on a half-tide mooring about a 5-minute drive from my home," wrote John Elliott of the UK. Here he's sailing his Hawk on a crisp January day on the beautiful estuary between Salcombe and Kingsbridge in South Devon.



Aussie Bryan Oates has been reading *Good Old Boat* from the beginning, in Sweden, where he moved 45 years ago. "That's ice just forming on the Baltic Sea behind me." Bryan lives on one of the 20,000 islands that make up the Stockholm archipelago. "Light winds start at 0800 and stop at about 1830. There's no tide and the water is deep right to land's edge, so I just pull up and tie onto a tree! This is a sailor's paradise." Bryan sails a Tripp Lentsch 29, designed by the late Bill Tripp in the early 1960s. He does acknowledge a downside to Swedish sailing: "It gets cold in the winter, so all boats come out of the water around September." Sounds familiar to some of us.



Cloud 9 isn't just the Splendor 27 Bill Payne has owned for 15 years, she's a teaching platform for BLISS, the ASA-certified sailing school he runs in Osaka, Japan. "It's an acronym for Bill's Little Informal Sailboat School," Bill wrote. "*Cloud 9* was built about 35 years ago in Nagoya, Japan, based on a New Zealand design for a 25-foot boat. The company is long out of business and there is no record of how many were built." Attending BLISS and sailing on *Cloud 9*? Sounds like heaven.



PHOTO BY GEORGE VEST



Colin Webb, one of many Australian subscribers, has for the past 20 years been sailing *Zenith*, a 1974 Midshipman 40 designed by Bill Luders and built by Cheoy Lee in Hong Kong. Colin has sailed most of the east coast of Australia as well as Tasmania. "I am currently repainting and upgrading this great passagemaker. Then I'm retiring and heading for the South Pacific!"

Takeshi Tanaka, of Yokohama, Japan, bought his Nor'Sea 27, *Cookie*, in Florida and had it shipped to Japan. At about that time, he became close friends with *Good Old Boat* contributing editor and fellow Nor'Sea 27 owner Ed Zacko. Japanese officials had refused to register Takeshi's boat, deeming it unsafe for ocean navigation because they believed the offset companionway Lyle Hess had designed would make the boat prone to flooding after a knockdown. With Hess deceased, Takeshi had nowhere to turn. Enter Ed, who has sailed his own Nor'Sea over much of the world. "I got hold of Dean Wixom (the builder who commissioned Hess to design the Nor'Sea) and Terry Baylor (Dean's shop foreman, who lofted the boat and made the plug, molds, and the first 181 hulls). We came up with enough data and documentation to convince Japanese authorities that the boat was, in fact, safe for ocean voyaging!" These days Takeshi singlehands *Cookie* all over the North Pacific.

Our only *Good Old Boat* subscriber in the Netherlands, Drew McCormack sails *Luniz* on the IJsselmeer. She's a 1978 wharf-built 28-foot sloop designed by Dick Koopmans, a well-known Dutch designer. "The boat is steel, which is unusual for smaller boats in most parts of the world, but the Dutch have made it something of a local industry." The model is the Koopmans Kustvaarder, which translates to Koopmans Coast Sailor.



Jon Zinke is one of two *Good Old Boat* subscribers in Hong Kong. He is pictured here with friends aboard his 1977 Taipan 28, *Naiad*, sailing in the Classic Yacht Rally in Hong Kong. "*Naiad* was built here in Hong Kong at Interchem Engineers, Ltd. Of about 100 built between 1970 and 1980, most were shipped to the US and UK. She is very similar in design to the Cheoy Lee Offshore 27."





The Rata of Seville

A ravenous rat
unites a community
while wreaking havoc
on board

BY ED ZACKO

At our farewell party at the Club Náutico de Sevilla, Spain, I ate something I shouldn't have, and on returning to *Entr'acte*, I lay down on a main-cabin settee to await the inevitable consequences. When I awoke thirsty and rose from the settee to fetch a drink, I suddenly sensed I was not alone in the dark wee hours. I stood in the silence and waited. Nothing. When I reached for a cup in the galley, I heard a rustling in the trash bin, then I felt a warm furry body and damp little feet touching mine. I crashed into the head door as my visitor scurried out of sight up and under the galley stove. Through the darkness, I saw his broad backside and tail. A long, skinny tail. A rat's tail! There was no denying what I saw, and we could not go to sea with a rat on board. Our planned 0800 departure was the first casualty.

Entr'acte was still in her slip at 1000 when our neighbors Antonio and Tonia from *Habibi* walked by.

"*Que pase, Eduardo, too much fiesta last night? Relax! Tomorrow is another day,*" Antonio said to me in Spanish, rolling every "r" as the Spanish do: rrrrrrr!

"No, Antonio, *tenemos una problema muy grande!* A rat came on board last night."

The couple looked quizzically at each other.

"*Una rrrrata?* You mean *un raton*, a mouse, no? Oh, they are harmless, such little things."

"No, Antonio, no *raton*, *una rata*, *una rata grande!* A rat!"

"*Rrrrata?*" Antonio paused, looking down. "*Rrrrrrrrata!*"

Mice seem innocent, they have some redeeming value, but rats . . . Just the word "rat," no

matter how it's said, sounds disgusting. The Spanish have a way of saying "rat" that manages to incorporate feelings of awe and disgust. They'll pause, think a moment, then bow their heads as if in shame or prayer. Taking a quick breath and while still looking down — seemingly into hell — they manage to simultaneously inhale and exhale using their diaphragms as if playing a very loud note on a wind instrument and, with a quick shake of the head, a gasping rush of air, out comes that single word: "*Rrrrata!*" Then silence. I have tried to duplicate it and cannot come close.

And so, the battle was joined. For the next three months we engaged in an all-out war.

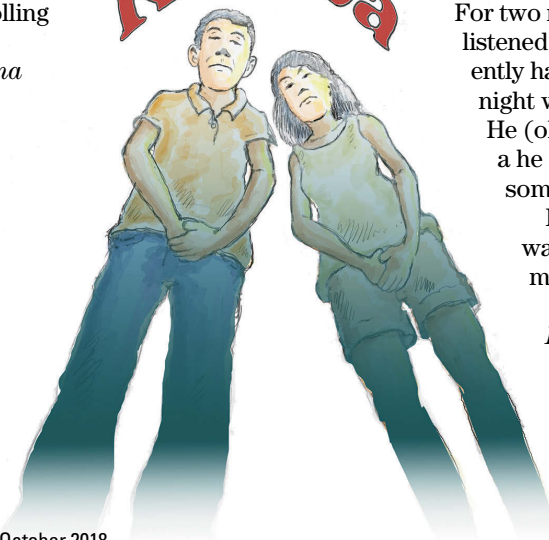
First came the traps, big traps and small traps. We found one called Super Cat, which looked like a large plastic bear trap with teeth. We baited several Super Cats with cherries, with peanut butter, and with salmon skin. It was all for naught. For two nights, we lay awake at 0200 and listened as our friend leaped about, apparently having a wonderful time. On the third night we heard scratching and gnawing. He (oh merciful King Neptune, let it be a he and not a she) was feasting on something.

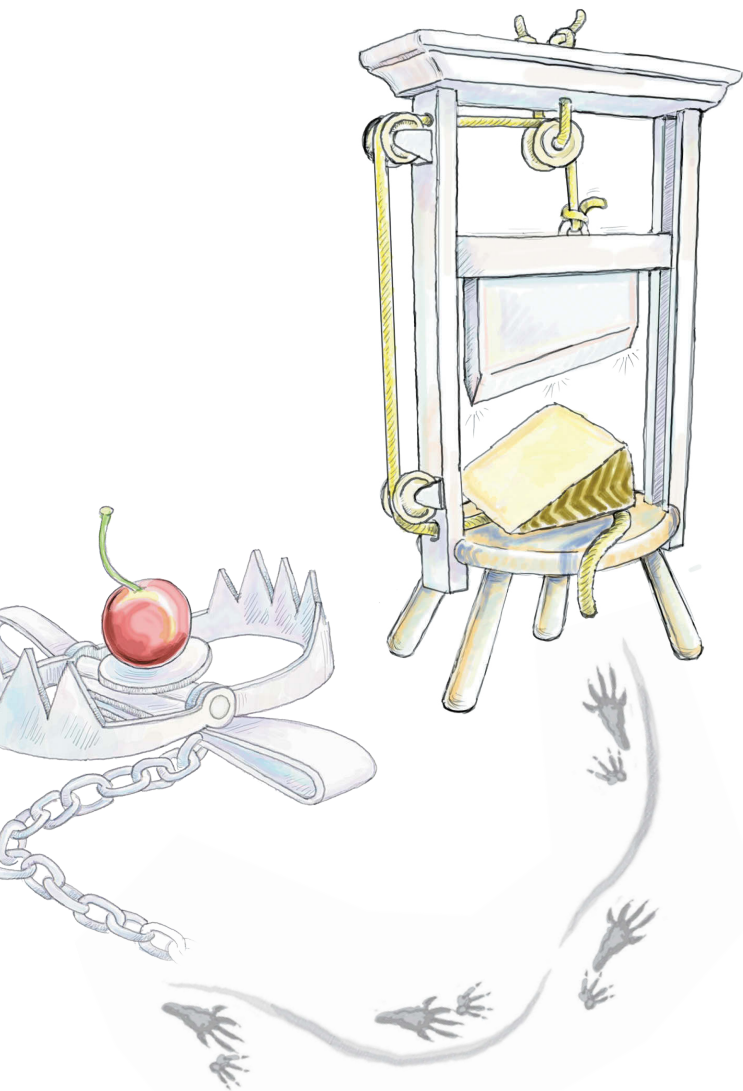
By day four, the entire yacht club was involved. Escobar, the restaurant manager, pulled me aside.

"Don Eduardo, *es una rrrrata Espanol,*" he said. "And a Spanish rat must have Spanish bait. Wait here!"

He returned with a trap that looked like a guillotine and large enough for three rats. Wearing latex gloves to eliminate any

Rrrrrrata





human smell, Escobar inserted *jamon serrano*, *queso viejo*, and *camarones* — the three most expensive items on the restaurant menu.

"This never fails! *Venga!*"

Not only did this trap fail, la Rrrata wouldn't touch the bait. In fact, he was aboard a boat newly stuffed with provisions for a transatlantic passage to Trinidad and he wouldn't touch any of it! Oh, he nibbled on a single cracker just enough to ruin the package, and on a single strand of pasta to ruin *that* box. And he did make a tiny hole in the plastic jar of honey so the contents ran through the locker, across the galley sole, and into the bilge. But no, la Rrrata's food of choice was *Entr'acte*, or to be precise, her electrical system. He absolutely *loved* electrical cable!

At this point, Club Náutico hired an exterminator at their expense. The professional appeared and, rat-like, crawled about the boat, peering with beady eyes into hidden spaces and squeaking merrily as he scattered hundreds of poison pellets throughout our home.

"To kill a rat, one must think like a rat. *No problema, en dos o tres dias, muerto! Garantizado!*"

For the next week, la Rrrata chewed on one wire after another. Each morning, one more electronic device fell victim. First was the GPS, then the VHF, then the SSB. At 0500 one day, the bilge pump activated. I opened the engine-room door and wanted to cry. A smorgasbord of wire,

insulation, and wire bits floated in water that had gushed from a hole in the sink-drain hose. What stopped my heart was the frayed hose from the engine intake. I closed all the seacocks and returned to bed.

Next came the Rat Glue. "This glue is so sticky nothing gets away from it."

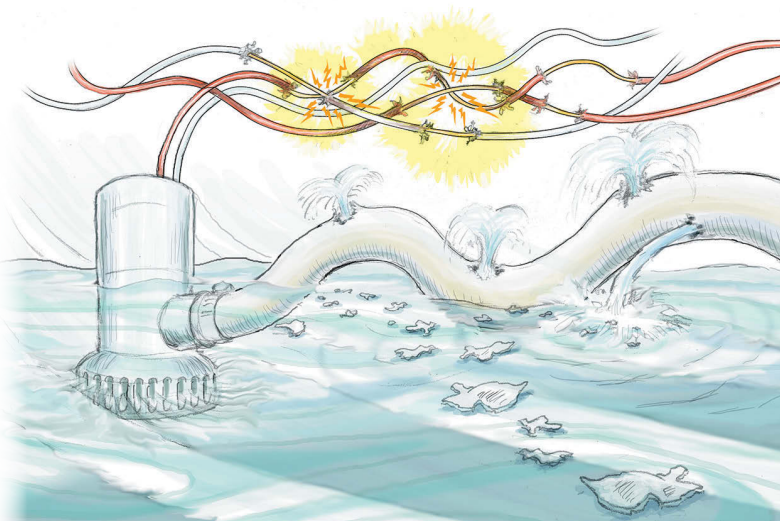
We placed two traps baited with greasy salmon skin on top of pieces of cardboard smeared with Rat Glue, and placed more Rat-Glue-smeared cardboard pieces on the stovetop, on the sink, on the head, in the trash bin, on the settees, and all along the sole. Our cabin was a minefield of Rat Glue.

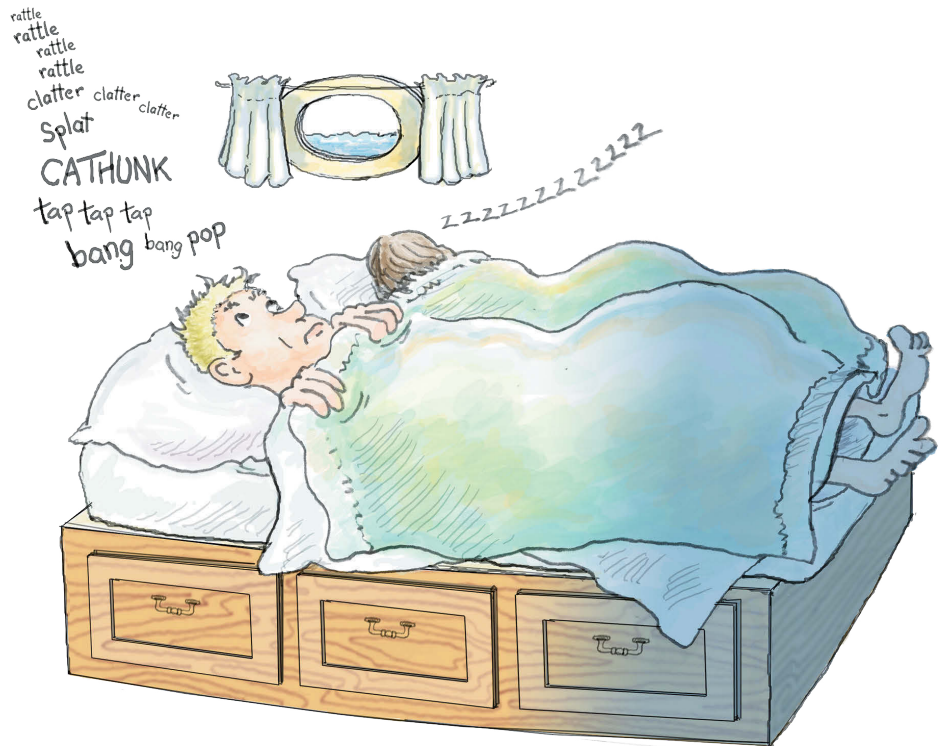
At 0200, a loud *bang!* One of the Super Cats! I carefully approached the overturned trap . . . empty! La Rrrata had escaped with the bait.

I stepped backward . . . onto Rat Glue. #%&*@!!!! I reached down, carefully trying to find, in the dark, a glue-free spot on the cardboard that I could grab to pull my bare foot free. Then my hand stuck fast and I couldn't move. I pulled hard, and stringy tendrils of glue followed. A small wave caused *Entr'acte* to roll just enough for me to lose my balance and I flopped down onto the settee. My foot was stuck, my hand and legs were covered in glue, and now my butt was stuck to another piece of cardboard . . . my butt, because I was stark naked.

"Did we get him?" Ellen called from her bunk. I was too angry to scream.

At 0330, she and I were both in the cockpit, naked and covered with Rat Glue. It spread faster than we could clean it up. The slightest touch left behind a stringy trail that had no end. We quickly learned that neither water, soap, alcohol, nor acetone will remove it. We had no gasoline and the toluene was buried under our clean bunk, which we were smart enough not to touch. Dry rubbing with a towel eventually and painfully brought things under control and Ellen returned to her bunk. I was right behind her, but stopped for a quick visit to the head.





"Ellen! I have a problem!"

There was still some glue on my hand and fingers. I was now in a real pickle, well and truly "stuck on myself." Back in the cockpit, both of us still naked, Ellen, scissors in hand, prepared to perform surgery on the family jewels.

"Lean back, rest your feet on the lifeline, and hold the light."

As she began to cut, we were suddenly bathed in the bright glare of a spotlight. We froze.

"Damn, it's the police!"

"No, it's the security lighting. We have to work fast!"

The only time the security light comes on is when the main gate opens to admit the men and women rowers for their dawn workouts. Any minute, our dock would be crawling with jocks. As Ellen operated, the glue migrated to her, and we became attached to each other in a most embarrassing way. We could hear *la Rrrata*, to whom Michel, of a neighboring French boat, had given the name Little Rochefort, leaping and cavorting down below.

A few nights later, I awoke to find water covering the cabin sole. Not only had Little Rochefort eaten through the hose to the starboard water tank, but he had taken out the electric bilge pump as well. This was serious.

Someone suggested we plant a rubber snake under the galley stove to scare him away. Klaus of *Woodwind* was horrified.

"No, no, there is no life essence in a rubber snake. You are wasting your time! This is what you must do. Remove the hose from a seacock. In the dead of night, start the engine. With the engine running, open the seacock, allow the boat to fill with water, and set off an alarm. In the dark with all the noise and the sound of water, the rat will think the boat is sinking and abandon ship!"

"What do you mean the rat will *think* the boat is sinking? Klaus, the boat *will* be sinking! And don't forget, we have no electric bilge pump and it's 20 feet to the bottom."

Klaus stood by the manual pump while Ellen and I searched all of Seville for a rubber snake, *una serpiente de goma*. All we could find was a fully articulated wooden snake, complete with tongue. We bought it.

We returned to *Entr'acte* to find a note from the French yacht *Maestro* pinned to our lifeline.

"Sun Tsu in *The Art of War* mention the effect of the element of surprise. What have no taste or smell? Electricity. Your rat like electricity, so we give to him!"

Accompanying the note was a drawing of a 220-volt electric trap.

"It ees simple, non? We take a plate of stainless steel and connect it to electricity. For bait, we use somesing wiv a very high moisture content like ze French Camembert, no? Ze rat he have ze rear legs on ze plate. When ees tongue just touch ze bait, tak! *Il est mort! Voilà! Très simple, non?*"

"Michel, I really like the *Il est mort* part, but what about the risk of fire?"

"Edouard, zat ees ze beauty of my plan. Ze electricite on ze dock has defense, ze breaker, so we know when he die because when ze tongue she touch ze bait, ze defense she pop and ze lights zey go out immediatement before ze fire can begin."

"What lights?"

"*Tout le club! Poof! Ze plate ees so large e must step on it. Très simple, non?*"

So here we were, in the restaurant, plotting to electrocute a rat. We began with a multimeter, measuring the electrical conductivity of an assortment of cheeses, fruits, and meats provided by the restaurant. The winner? A peach. Oh baby, do peaches conduct!

We worked all day with gloved hands to keep our human smell from contaminating the trap. I could just imagine Little Rochefort peeking out from his hiding place and laughing at all of us. Somehow, we managed to assemble and install our trap without electrocuting ourselves, which, given *Entr'acte's* small cabin, was a challenge. We carefully exited the main cabin and closed the doors. Between all the poison, Rat Glue, Super Cats, and electricity, our main cabin was now a truly lethal place.

A Frenchman in pajamas on a dock at 0200 is a sight to behold. All night, Michel paced up and down while we sat on the dock, all of us waiting anxiously for the lights to go out. It was agonizing, as we could hear scratching, the patter of little

feet, and Little Rochefort chewing on everything — everything except that peach.

Another morning dawned after another sleepless night.

“You must gas him! Run a tube from a car’s exhaust pipe to the boat.”

“No way, that will stink up the whole boat!”

One evening, the club threw a party (in Spain there is always a party). A live band played, accompanied by the obligatory smoke machine. I had an inspiration, and set out the next morning to rent a smoke machine. It was a holiday (in Spain there is always a holiday) and everything was closed.

That afternoon, the *comodoro* told us that the club was going to pay for a second exterminator. This became an argument of honor on both sides.

“Don Eduardo, we cannot have *rrrratas* at Club Náutico! It is our *rrrrata* and our responsibility.”

“Don Paco, no! I will pay. I am the captain. It is my yacht and therefore my rat and my responsibility.”

“No! The club will pay, and that is final!”

Back on *Entr’acte*, Ellen asked me for the ditty bag so she could finish a minor canvas repair. I opened the bookcase and, in broad daylight, there he was! As his rump descended along the engine exhaust hose into the bilge, I noticed two very important things. First, his color. He was brown, not gray. Second, the length of his tail. If it’s true that the length of a rat’s tail is equal to its body length, he was one big rat. To this day I regret that my reflexes were not fast enough to grab the tail and flip him out through the hatch.

“Oh, so he is brown, not like those gray river rats. My daughter, she has a pet like this. You call it a gobel, no?”

“No, Antonio, Gobel was an American TV star.

You mean gerbil, and this one is not harmless!”

The exterminator arrived carrying only a very small paper bag. As he climbed on board, I took the bag and started to reach inside. He slapped my hand, hard.

“No! Poison, *muy toxico*. Mira!”

He put on a pair of rubber gloves and removed from the bag a small plastic packet on which was printed the silhouette of an anatomically correct black bull (in Spain everything eventually arrives at the bull). The bag bore a warning in large letters: *CONTENES SUFFICIENTE POR UNA TORO 850KG*.

“No toca! *Muy, muy peligroso!*”

He next produced two large tomatoes, cut them into very

small pieces, and mixed them with the *entire contents* of the packet.

“Smear this over everything he eats or touches and everywhere he steps. When he licks his feet to clean himself, he will die!”

I diligently coated every wire and hose in the engine room, the engine, fuel tank, lockers, cans . . . everywhere with the Salad of Death.

“*Dos o tres diaz, morto! Me guarantia!*”

Oh please, let it be so!

All night long, Ellen and I waited. As the scratching and chewing began anew, it was like being inside a submarine during a depth-charge attack. All we could think was, “Die! Die!” He could be fried, crushed, decapitated, and stuck by that damn glue (and I knew firsthand how that one goes). But alas, the lights of the club remained lit as Little Rochefort partied on.

I didn’t remember falling asleep, but we woke suddenly to a hellacious racket on the dock. I poked my head out to see, running in our direction at full tilt, four firefighters in full combat gear, including air tanks on their backs, towing a wagon filled with large tanks.

My God! Fire! That damn electric trap must have started a fire! “ABANDON SHIP! Ellen, get up, hurry!”

We both catapulted ourselves out of the aft cabin to land on the dock just as the firefighters came to a stop at . . . *Entr’acte*! The leader removed his oxygen mask and we recognized Alejandro, the husband of a friend we sat with at the *fiesta* the previous Sunday.



"Don Eduardo, I am sorry we took so long to come but we were in Germany on a training exercise. Carina told me of your emergency and we have a solution that I know will work." Alejandro pointed to the large tanks. "We'll close up your boat and pump in carbon dioxide. This gas will displace the oxygen and *la rrrrata* will flee or die. Go to the bar and take a *café*. This will be a good training exercise for my new men."

By now, everyone in the club had gathered around the *bombieros*. "Ya-tay Entrrrrract-ay, ole!" Our hearts still pounding from the fire scare, we just stood there laughing.

I wish that I could report that our little friend came staggering into the open, coughing and gagging as he jumped ship, but it didn't happen that way. Instead, we worked throughout the summer heat to get *Entr'acte* back in order. We repaired the entire electrical system, systematically unloaded and reloaded all our stores, and thoroughly cleaned and disinfected every nook and cranny, all the while searching for the body. But we never heard or saw the rat, nor did we find or smell the body.

Entr'acte was once again poised to depart for the South Pacific, but at dinner on the eve of departure, Ellen was quiet.

"What's wrong?"

"I don't know how to say this, but I'm just not ready to leave here. These past weeks have been so much fun. We've met so many new friends, and after everything that's happened, it seems so wrong to go running off."

"You call what just happened *fun*? What was fun? The sleepless nights, the mess, the 0200 Rat Glue haircut under the spotlight?"

The sudden silence crumbled into laughter so uncontrollable that we were crying.

Then Antonio and Tonia from *Habibi* appeared with a bottle of champagne and a card containing a crude photo of me dressed as a matador.

"Don Eduardo, we salute you. You fought your bull valiantly. Forevermore, Club Náutico will remember you

as El Rrrrator, Don Eduardo, el Ratito de la Maestranza de Sevilla. You are now a titled Spanish Don."

Epilogue

Five years later, somewhere in Fiji, *Entr'acte* is making close to 7 knots running before a stiff trade wind, the engine running to charge our batteries, when the oil-pressure alarm sounds madly. We'd blown an oil line. The seas are smooth behind the barrier reef, but we have only about an hour before we hit open water and the ocean swells. We have a spare oil line. If I work fast, I should be able to install it within our window, allowing us the security of the engine when we run the pass into the next atoll.

The engine room is covered with hot black oil. I squeeze, stretch, rotate, and manage to get a wrench on the line. *Entr'acte* rolls to a gust. The wrench slips and clatters into the bilge as something hits me on the face and ends up in my mouth. It's soft. And chewy.

"Hmmm."

It's a piece of dried tomato, a vestige of the *ensalada de muerte*. A drop of hot engine oil hits my glasses. I stop and lie there, remembering, and laughing.

"Oh Little Rochefort, whatever became of you? You changed our lives for the better in ways that can never be explained. I sincerely hope that you are living a long and happy life ... somewhere else!"

Ed Zacko is a Good Old Boat contributing editor. Ed, the drummer, and Ellen, the violinist, met in the orchestra pit of a Broadway musical. They built their Nor'Sea 27, Entr'acte, from a bare hull, and since 1980 have made four transatlantic and one transpacific crossing. After spending a couple of summers in southern Spain, Ed and Ellen shipped themselves and Entr'acte to Phoenix, where they have refitted Entr'acte while keeping up a busy concert schedule in the Southwest US. They recently completed their latest project, a children's book, The Adventures of Mike the Moose: The Boys Find the World.

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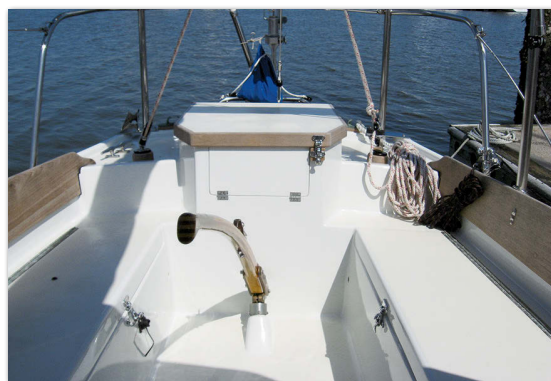
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Mounting the Outboard Inboard



BY JAMES BALDWIN



PART 1

The case for a well that encloses the tilted-up motor

Sailboat auxiliary engines, inboard and outboard, have their strong points and weak points, friends and foes. My experiences with both kinds, on my boat and on other people's boats, has led me to favor the outboard as being far simpler to install and maintain. The outboard's principal disadvantage, though, is its location, whether it's hung on a transom bracket or fitted in a well in the cockpit. Over the years, I've worked to develop a more convenient way to mount and operate an outboard by installing it in a well that allows it to be tilted up when it's not in use.

Most cruising sailors are not going to switch from a diesel inboard to an outboard-well conversion. However, if you don't have unrealistic expectations

and are looking for an alternative way to bring back to life a suitable older classic sailboat, the improved outboard well is worth considering. Many worthy old boats languish neglected in forgotten corners of boatyards because they have a blown or ancient inboard engine. Adopting the outboard well might allow some of them to be rescued from the scrapyard.

My 28-foot Pearson Triton, *Atom*, was originally equipped with a finicky Atomic 4 gasoline inboard that so disliked the salty marine environment and my inept care that it too often refused to do its job. I lived for several years with oil dripping into the bilge and the odor of gasoline permeating the cabin. The final insult came when it

spit fire in my face as I knelt before its backfiring carburetor. Our breakup was inevitable.

After my first circumnavigation in the 1980s, I felt I had the seamanship skills needed for the challenge of sailing engineless, so I removed the burdensome beast and sailed across the Caribbean and the Pacific in the rewarding pursuit of purely

***Atom's* extra-long-shaft outboard motor places the prop nearly as low as the original prop in its aperture, top left. The outboard-well enclosure, although proud of the aft deck, does not intrude into the cockpit, top right. When the motor is tilted up, sliding boards close the bottom of the well, lower right.**



On an Alberg 30, which has a long aft deck, the outboard well fits nicely in the original lazarette, at left. When the motor is raised, the prop clears the transom, at right, and can be removed, if needed, by someone reaching over the transom. An installation like this might require rethinking the mounting system for a windvane steering system and relocating a stern-mounted swim ladder.

sail-powered passagemaking. Despite the success of these engineless passages, I came to understand the very real limitations of engine-free sailing, one of which was the number of ports I could not safely enter or exit under sail or sculling oar alone. After a near shipwreck on a wave-lashed rocky coast, and then a terrifyingly close encounter with a tug and barge when becalmed one night in the Sulu Sea, I knew that the long odds of this high-risk game would probably catch up to me one day.

Eventually, I hung a 3-horsepower outboard motor on an adjustable transom bracket. Even then, I relied on my sailing skills and used the motor sparingly, as its limited power could move my 4-ton boat against only the lightest winds and currents and its short shaft meant the prop sucked air in even small waves.

On returning to the US from my second circumnavigation, I upgraded to a 6-horsepower four-stroke 20-inch long-shaft motor, which I attached to a custom transom bracket on twin vertical tracks that let me lift the motor 18 inches for storage at sea. That setup gave me adequate power to stem the currents of the Intracoastal Waterway and ocean inlets, but steering the boat was awkward whenever I had to reach over the transom to operate the shifter and throttle. In its stored position, the motor was unsightly, and its weight was higher and farther aft than ideal for optimal sailing performance.

A better solution

Over the years, I experimented with different outboard-well designs on a variety of boats, and 19 years ago, I built my first seagoing outboard well in a friend's Taipan 28 sloop (see "The Inside Outboard," November 2002). That outboard well consisted of a circular hole above the water on the hull's centerline surrounded with a plywood and fiberglass box. When not being used, the 5-horsepower motor was lifted out of the box and stored on its side in a cockpit locker, and a sealed lid secured to the box to prevent water from entering the locker. My wife, Mei, and I successfully sailed that Taipan on an expanded Atlantic-circle delivery and cruise that took us from the Caribbean to Bermuda, the Azores, Cape Verde, and Brazil. Along the way, the outboard well proved to be a workable system and a huge improvement over the transom bracket.

Effective as that system was, I felt there had to be an easier method of dealing with the motor when going from motoring to sailing, as left in place, it added drag while sailing and risked getting corroded or fouled with growth while sitting at anchor. It was not too difficult to lift out the smaller and lighter two-stroke motors for storage or put them back in the well when it came time to enter port, but those motors were dirty and their use today is restricted by environmental regulations. When I switched to heavier four-stroke motors, I found it impractical to lift them in and out of the locker

when under way, and they needed to be stowed carefully to prevent crankcase oil from going places it shouldn't inside the motor. The longer 25-inch shaft length needed to optimize performance made removing the engine for storage even less feasible.

Elements of the outboard well

Over the years, my outboard-well designs have evolved. It became obvious to me that the ideal solution was a motor that stayed permanently in the well and tilted up through a narrow slot in the transom for storage. I built these improved versions on different models of sailboats, including three Pearson Tritons, a Tripp 29, and four Alberg 30s, among others. On most of those boats, and on two of the Alberg 30s, I installed a 6-horsepower Tohatsu SailPro with a 25-inch extra-long shaft and high-thrust prop, because the motor was a good compromise between weight, physical dimensions, and thrust. Most sailors who are used to having more powerful engines consider 6 horsepower insufficient on this size of boat. It's true you can't motor into strong winds and waves with 6 horsepower, but many sailors understand the trade-offs of going to higher horsepower and choose not to. The owner of the third Alberg 30 I converted was keen to have more power, and I was able to modify the design to fit a Nissan 9.8.

Whereas the Alberg 30 has a generous lazarette of 34 inches fore and aft that can easily contain an

enclosed outboard well, the Pearson Triton presented more of a challenge because of its smaller lazarette. My first outboard well in a Triton was an open-faced design, and the motor head overhung the rudder cap and tiller slightly when tilted up. Even though this design worked and was easy to construct, it did have drawbacks, such as the motor's intrusion into the cockpit footwell when tilted and more noise and vibration to live with while seated in the cockpit.

An open-faced well seemed less ideal than an enclosed well because the increased volume of the cockpit footwell combined with the open lazarette makes getting pooped by a rogue wave more of a concern. On the other hand, the open well contains buoyancy chambers and it permits faster drainage of the footwell, so I doubt it will ever be much of an issue. On later Tritons, I pushed the motor aft another 1.5 inches and added structural stiffeners to what little remained of the aft deck and the transom above the motor-shaft slot. This modification allowed me to enclose the front of the well while maintaining adequate structural integrity.

In 2014, I figured out how to enclose a 6-horsepower Tohatsu SailPro on *Atom* by moving the center of the original lazarette bulkhead forward. It was considerably more work than an open-well design, and it required pushing the motor-mount position farther aft and 1 inch higher than on earlier Triton conversions, resulting in a higher and more unsightly raised lid. Even so, I'm happy with the result, and the motor-box lid serves as a good elevated seat or table. The motor pushes the Triton at 5.8 knots at full throttle in calm seas and is surprisingly good when punching into a light headwind and chop.

Boatbuilder options

A functional outboard-well design needs the following: sufficient prop depth to get a bite in moderate waves, a practical way to close off the hull and transom

slot at sea, enough clearance from the hull cutout to the waterline to reduce back-flooding, and the largest possible buoyancy chambers built in to the lower portions of the well. If any builders produced a sensible offshore-suitable boat with this type of enclosed tilt-up outboard well, I am unaware of them. Perhaps readers can inform us if they did.

Boats with fixed motor wells as options, such as the Cape Dory 25 and 26, Pearson Ariel 26, and Bristol 27, for example, were popular daysailers, but were not attractive to most potential small-boat voyagers. This was partly because the motors are fixed in place, causing drag turbulence under sail, fouling, and corrosion problems. To my eye, those designs are impractical, except perhaps if the boats are kept on freshwater lakes.

Most problems associated with old-style fixed outboard wells can be avoided if, among other design details, a slot is cut in the hull to allow the motor to tilt up and forward. An added benefit to this approach is that the hull shaft hole and transom slot can be surprisingly narrow and inconspicuous. The hull hole does not need to be as wide as the prop, because the prop is taken off the motor by removing one nut. The motor can then be placed in the well, tilted forward, and the prop easily reinstalled by leaning over the transom. When the motor is to be removed, the prop is pulled first.

Addressing the cons

I have had one failed outboard-well design that others can learn from. In 2008, we removed the very ill diesel from a friend's Alberg 35. He did not want the diesel rebuilt or replaced; he wanted it gone forever. Because the Alberg 35 had a long overhanging transom, we felt it would be too difficult to get an outboard motor far enough aft where the shaft could penetrate the transom when tilted up, but still be far enough forward to keep the prop in the water when in the motoring position. Our compromise experiment was to build a fixed open-faced well as far forward as possible with a 20-inch-shaft Mercury 9.9 that could be hoisted out of the well with a tackle and laid on its side in the lazarette for storage. The result was an awkward arrangement, and the shaft proved too short to keep the prop from sucking air in anything but calm water. The lesson there was that a fixed well for anything larger than 6 horsepower is unworkable, and that the 25-inch extra-long shaft is the best choice.

One of the disadvantages of outboard motors is that they are not designed for extreme long-term use, at least compared with the diesel engine. Experts have pointed out that outboard motors wear out sooner and require different, although simple, maintenance. Seawater does splash into the well in rough weather and can cause corrosion if the motor is not rinsed and lubricated occasionally.

The alternators available on outboard motors have limited output, so you must rely on solar- or wind-charging systems when away from the marina shorepower. I never tried, but you probably do not want to depend on frequently running an outboard motor 24 hours a day. Problems I have had with outboards were typically bad spark plugs or a clogged carburetor, both of which are easy to troubleshoot and fix. I now carry an entire spare carburetor to swap out in minutes. I can then go on my way and thoroughly clean



James fitted this Able 32 with a motor well with a 15-horsepower motor. The aperture for the original prop was later filled.



Fitting an outboard well in a Tripp 29 lazarette, top left, required extensive modifications to the cockpit seating and the lazarette area, second left. The finished outboard well, third left, is tidy, includes storage space for gas cans, and takes advantage of the ample transom overhang of the Tripp 29, bottom.



out the clogged carb at my leisure. In the worst case of an irreparable breakdown, you just buy another new or used motor, drop it in, and off you go.

It is true that diesel is less explosive than gas. However, with my outboard-well conversions, two portable gas tanks are stored in the vented lazarette next to the motor and sealed from the rest of the boat. Any extra gas cans carried to extend range are stored in the cockpit side lockers, which are also sealed from the interior and bilge, making fire risk minimal. Typically, you can expect roughly 10 miles per gallon with a 6 to 9.8-horsepower motor in calm conditions at three-quarters throttle. Carrying 15 gallons of gas will get you 150 miles, which is not much of a constraint for most sailors who know how to use winds and currents to their advantage.

In practice, I have had no problem with props coming out of the water in short choppy waves at an ocean inlet with 3-knot current against 15 knots of wind. Rougher conditions may dictate waiting for a change in wind or tide. Most of today's motors have an over-rev rpm limiter to prevent motor damage from a racing prop. I place the motors as far forward and low as possible and now use only extra-long-shaft models that rarely have the problem of the prop sucking

air. Even though they work much better than when placed farther aft on a transom bracket, due to the possibility of the prop coming out of the water and the relative low horsepower, we do not attempt to motor in extreme wave conditions. If brute-force motoring in rough seas is your primary concern, then the inboard diesel is the clear winner in terms of power, range, and keeping the prop always in the water.

If retaining the highest resale value for your boat is a primary concern, you should be aware that removing the stock inboard engine will shrink the pool of prospective buyers and probably lower the boat's resale value. On the other hand, a properly designed and built outboard-well modification, in conjunction with other mods and upgrades, were responsible for one of the Alberg 30s I refitted in 2014 selling for a record price two years later to a sailor who appreciated the conversion.

Benefits of the tilt-up solution

The advantages of a properly designed tilt-up outboard well on a suitable boat include the following:


- Less cost up front and for future maintenance.
- Less weight and wasted space.
- Reduced complexity, which makes motor replacement or repairs easier. You can take the motor to the repair shop instead of bringing a mechanic and all his tools to the boat.
- No need to carry aboard all the specialized tools, maintenance materials, manuals, how-to books, and spare parts necessary for diesel maintenance.
- No fixed prop to snag fish traps and nets under sail.
- If the prop ever gets fouled or damaged, you just tilt up the engine and clear or replace the prop by reaching over the transom.

- Sailing performance is noticeably improved by less drag and turbulence once you remove the inboard's fixed prop and fill in the prop aperture between keel and rudder.
- You have the ability to swivel the motor for side thrust when maneuvering in marinas.
- An outboard in a well spills no fuel or oil into the bilge.
- The self-contained outboard motor does not need holes in the hull under water for cooling water and for a potentially leaky prop-shaft stuffing box that could fail one day and sink your boat.
- With no need to access a diesel's exhaust, prop shaft, and other accessories, you can now seal off all the cockpit lockers from the

bilge, giving you the added safety of collision bulkheads and less chance of flooding.

- No need for a separate engine starting battery and charging circuit.
- The motor does not radiate unwanted heat into the boat all night when you try to sleep in warm weather after motoring.
- A smaller motor has a smaller environmental impact.

There are also intangible benefits to downsizing to a small self-contained motor located within an outboard well. The more limited range and thrust of a small outboard teaches you to become a better sailor. You will find that, as you hone your sailing skills and gain experience in passage planning, you will

notice a corresponding decrease in the horsepower you need. After weighing the relative merits of outboards and diesels, each sailor chooses a system based on his or her own needs. 

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

In Part 2 of this article, which will appear in the November 2018 issue, James will explain how to make an outboard-well conversion.



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Too Much Boat

Sailing other people's boats is a good way to find the right size or Too Little?

The essence of cruising by sailboat is not about crossing vast oceans, but about living by sail. My husband, Tom, and I lived this way for 10 years, traveling aboard our Peterson 44. When we returned to the United States, I had visions of reinventing micro cruising.

Since the 1990s, when I first set out on a 34-foot sailboat, the size of boat considered ideal for cruising has crept up; in 2015, the average boat sailing in the Atlantic Rally for Cruisers (ARC) was a little more than 48 feet, with anything under 40 feet considered small. We were ready for small, so we sold the Peterson and bought a Cape Dory 25.

Cruising on a 25-foot boat seems a bit masochistic (how do you even have a reasonable galley?), but I knew that the joy of smaller gear and less stuff could be its own reward. Unfortunately, it seems we overdid our leap downward in displacement and length, as the Cape Dory proved way too small for us, at least for the Maine island-hopping we enjoy. When friends invited us out for a daysail, we jumped at the chance to try on their Pearson Triton 28, *Ajaja*, for size.

Entering Narragansett Bay's West Passage from Wickford Harbor, we headed south. Though I was itching to take the tiller, this was the first family sail for Tom and Celia and their two daughters and so I hung back, enjoying my own first daysail of the year.

It was an early summer afternoon reminiscent of Sundays on Long Island Sound — less traffic but the

same sense of determined holidaying with small boats in packs crossing in apparently aimless directions. Missing were only the tugboats, barges in tow, trying to thread the flocks, signaling at boats to get out of the way. The East Passage of Narragansett Bay, on the other side of Jamestown Island, is much more crowded with big yachts out of Newport and commercial vessels from Providence.

Ajaja ran along easily in 8 to 10 knots of wind. Her long keel with its 4-foot 3-inch draft tracked nicely, but the cutaway forefoot and shortened keel make her more maneuverable than boats with longer full keels. I marveled at how much more deck space there is on the Triton compared to our Cape Dory — three feet matter. Her pop-up cabin top provided full headroom below, but did hinder the view forward from the cockpit.

Carl Alberg designed the Pearson Triton 28 and the boats were built in nearby Bristol during the 1960s. It's one of the first fiberglass production cruising boats, and one of the first to have its deck cored with balsa to reduce the weight of the structure. Clearly designed with the 1960s Cruising Club of America (CCA) Rule in mind, it has a fractional rig with jumper stays.

Tom and Celia's youngest daughter, who'd just completed her freshman year at college and was working on engineering projects at the Naval War College in Newport, sailed us out of Wickford and down the bay to the new Jamestown Bridge. She's a fierce helmswoman. She had covered her slender body in sunscreen to make up for the fact that she was exposing most of it to the summer sun. Her elder sister, a graduate student in medieval studies, sought a combination of sun, shade, and quiet on the foredeck, where she read James Michener's *Chesapeake* and occasionally fired back comments to the cockpit.

The author sized up the Pearson Triton *Ajaja* while taking in the scenery of Narragansett Bay, at top. Her hosts, the Sgouros family, navigated down Narragansett Bay the old-fashioned way . . . with a paper chart, center. The crew alleviated the heat with a refreshing dip while *Ajaja* was anchored off Dutch Island, at left.

BY ANN HOFFNER



Our goal for the day was the north end of Dutch Island, which had been fortified various times since the Civil War and is now an uninhabited wildlife preserve where camping had been allowed before the state closed it to the public. North of Dutch Island is an open roadstead in the lee of the afternoon wind, which by 1:00 p.m. was rising steadily from offshore Rhode Island Sound. As we passed under the Jamestown Bridge, we noticed a field of small boats anchored or drifting gently while their occupants fished. We had no depth sounder, but Tom and Celia used their local knowledge to nose in as close to shore as they dared, and I helped Celia lower the anchor.

After a swim, we unpacked lunch and ate crackers, fruit, cheese, and canned mussels. It was just about idyllic, and we watched light powerboats bobble in each others' wakes while *Ajaja* lay placidly bow to the wind. All agreed that a bimini would help to cut down on the regular bouts of sunscreen slathering and the gradual donning of layers. (How did we do this in the days before we became so concerned about sunburn?)

While we were anchored off Dutch Island, I asked our hosts what their Triton, *Ajaja*, meant to them. For Celia, *Ajaja* is a front porch from which she can enjoy the ocean and to which she can kayak from her home. For Tom, the Triton is more complex; a mixture of present desires and "the possible realization of a small fraction of old fantasies." A realm where small repairs are more consequential than in the towering pile of their house.

I recalled with Tom the voyages of the most well-known Triton 28, *Atom*, sailed by James Baldwin and named after a Tahiti ketch sailed by Jean Gau in the 1950s and '60s. Baldwin made two circumnavigations later in the 20th century, starting out in his early twenties using an Aries windvane and graduating from no engine to an outboard motor. He wrote of the Triton's capabilities in this passage on crossing the Indian Ocean for the first time:




My joy at finally reaching the open waters of the Indian Ocean was soon muted by the realization that the trade winds blow at their strongest here, often at gale force for several days at a time. We made fast passages between the widely spaced islands, running with deeply reefed sails at an average speed of 130 miles a day. Not bad for a boat with a twenty-two-foot waterline length in heavy seas using a self-steering gear. Atom would even try to do 150 miles a day here, and I sometimes let her. But that kind of speed threatened to unravel her old sails or even bring down the mast if caught back-winded in an unintended jibe.

But the virtues of this small, easily managed sailboat showed up as we ended the Narragansett Bay day with a reach back up the bay on the 15-knot sea breeze. With everyone else occupied, I got a turn at the tiller. I tugged *Ajaja* up the channel to Wickford, first holding my own, then drawing away from a Catalina 34 motorsailing on the same narrow track. As we approached the neck from which a submerged seawall extends, the Triton held course, and we kept just enough wind angle to make our mooring and pick up the two kayaks and the rowboat holding place. We were water-dazed, and sunburned for all the sunscreen, but happy boaters. As on all good small boats, taking down the sails and making her tidy were easy tasks. Offloading gear, deciding what should stay on for the summer, and sorting people into the three tenders took a little longer.

As Tom climbed into the stern of the rowboat, I patted *Ajaja*'s hull and took a position at one of the two pairs of oars, and we rowed up the fairway past all the other boats settling into their berths after the day out. The girls had raced off to get us cups of Del's



Tom Sgouros took the helm for the wing-on-wing run up the bay to Wickford, top left. Once *Ajaja* was back on her mooring, the whole family joined in to make her shipshape, top right. Ann helped Tom row the dinghy to shore, above.

frozen lemonade, a Rhode Island treat, leaving us adults to contemplate the staid chores of figuring out what to have for dinner. But I remained distracted, contemplating living by sail aboard a sturdy little boat that's an important 3 feet longer than my own. 

Ann Hoffner and her husband, photographer Tom Bailey, spent 10 years cruising on their Peterson 44, Oddly Enough. They sold the boat in Borneo, returned to the US, and bought a Cape Dory 25 in Maine. Ann is a longtime contributor to sailing magazines, most often writing about weather events on passage and places she's been.

Resources

For the complete article about *Atom*'s round-the-world odyssey, go to:
www.atomvoyages.com/articles/voyaging

A Tartan 34C with PTSD?

BY JON KELLER

Solving a perplexing problem led to an explosive discovery

I dialed the number and waited through several rings. A man answered, and I told him I was the most recent owner of his old sailboat. He was happy to hear about the boat, and happier yet to hear that I was fixing her up, but he stopped me when I told him about a few things that had me stumped.

"Wait a minute," he said. "You don't know the history of that boat?"

A wave of nausea washed over me. I thought I knew her history — the guy I was on the phone with had raced her to Bermuda a few times. "No," I said.

"I guess not."

"You should hang up now."

"What?"

"You don't want to hear this. Trust me."

My mind raced. "It's too late."

"I can't believe you don't know about that boat."

In for a long short haul

A month earlier, I'd hauled *Jade*, my new-to-me Tartan 34C, out of the water. The sink-drain seacock was corroded, so I thought I'd do a quick replacement before sailing the boat. As it does on old boats, one thing led to another.

I noticed a faint smell of diesel in the cabin and traced it to a rusted-out fuel tank that had been crudely patched with fiberglass and plastic. Apparently,

it only leaked if the tank was filled beyond a certain point, or when sailing and the boat heeled.

Jade was to be my home, and I couldn't live with leaking diesel, so I cut and ground and wrestled the rusted tank out from the port settee and ordered a new aluminum one from Tartan. While awaiting the arrival of the new tank, and because the boat was already on the hard, I decided to replace the Cutless bearing and repack the stuffing box.

Because the Tartan 34C carries its engine as the centerpiece in the cabin, it's easily accessible. I was able to free the shaft from the transmission coupling, but in doing so I noticed that two of the motor mounts were shot. Undaunted, I rigged a framework and

raised the engine so I could replace the mounts.

At this point, I was in deeper than I wanted to be, but I was making progress. Realizing I wouldn't make it back into the water for fall sailing, and with the fuel tank a week away and the motor in place but the shaft not yet aligned, I decided to tackle a project I'd planned to do sometime down the road: recoring the foredeck.

I took photos and made diagrams with measurements so I could later remount the hardware, then I tore the deck apart in stages, scooping and chipping out the rotted

balsa as I went. After clearing a section, I reglassed it before moving on to the next, a method that allowed me to retain the shape and strength of the deck while I worked.

Several times, I took a stab at realigning the shaft, but I got nowhere. I wondered if something was wrong with the new motor mounts, but after careful checking I determined that couldn't be the problem. Yet even with the motor-mount adjustments maxed out, I couldn't get the transmission and shaft even close to aligned.

I didn't yet know it, but I was getting in over my head.

After a protracted "short" stay ashore, *Jade* rejoined Maine's maritime landscape, launched from a ramp on a trailer.



PHOTO BY DONNA KAUSSEN



Jon hauled his recently acquired Tartan 34C to replace a seacock, at left, but he discovered other problems that needed his urgent attention. One task was to install a new fuel tank, below.

Pressing on parts of the main cabin headliner, I felt rot, and discovered evidence of mold. So with a blend of panic and diligence, I tore out the entire headliner and discovered a leak around the diesel heater vent.

Overwhelmed by the projects I'd taken on, I abandoned the foredeck and coachroof and went back to the shaft-alignment problem, which had me stumped.

I pulled the shaft. It appeared straight to me, and when I took it to the local boat mechanic, he said it looked perfect. And then I shined a flashlight down the bronze shaft tube. I saw, plain as day, a nice smooth hook in it, just beyond my nice new Cutless bearing.

I was now daunted and frazzled. I hadn't done anything, not worked, not exercised, not socialized, not relaxed since I'd bought *Jade*. My new boat, which was to be my home, was torn to pieces in the town parking lot and I was



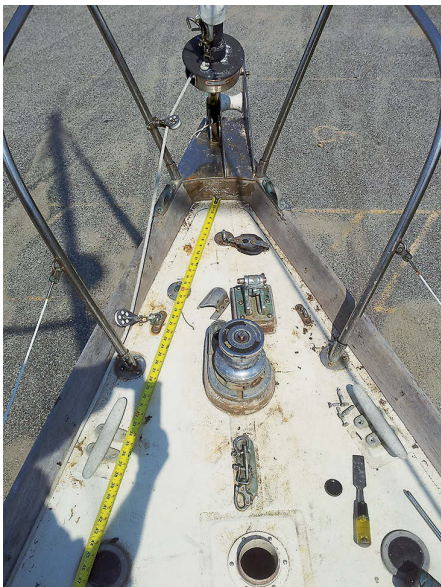
living on borrowed time in the cabin I'd been renting but was supposed to have vacated.

I'd read magazine articles in which boat owners wrote romantically about fixing up their boats, but I was finding no enjoyment whatsoever. Even the end-of-the-day beers I drank while watching the sun set over the harbor had become more a survival mechanism than a pleasure. Other boat owners let me know I wasn't the first to experience

this. One told me that he nearly went insane working on a boat, finally walking away from it and hiring out the work before his life fell apart. Another told me he stared at the boat in his driveway, aware that it would ruin him, until he forced himself to sell it.

I could empathize, but I still sought a sense of accomplishment, that warm feeling a do-it-yourselfer experiences during and after a job well done. I was in too deep to see straight, too deep to sell, and I couldn't begin to afford to hire someone to do the labor.

My boat looking like fiberglass stir-fry, I thought back over what the guy who'd sold it to me had said about it. He told me he'd bought it from an offshore racing sailor who'd bought a new boat, and he'd neglected it since taking ownership. "Essentially, I haven't done any maintenance at all," he said. "I just skated for a few years on the previous owner's diligence." When I later called him about the leaking



Before recoring the foredeck, Jon took measurements of the hardware locations, far left. He cut out a section of the top skin and chipped away the old core, at left, cleaned up the area, then laid the new core and the first layer of fiberglass, above.



Other areas where the core was rotten were the coachroof, at left, and around the chainplates, center, the latter caused by a poorly sealed fuel fill. Sighting along the stern tube solved the shaft-alignment puzzle — the tube had a bend in it, at right.

fuel tank, he admitted to the shoddy repair, and threw in a couple of sails to compensate me, swearing that was all he'd done.

His story didn't add up. What in the world could have caused the shaft tube to become bent?

That's when I dug through the paperwork and found the original owner's name. He was thrilled to hear about his old boat. He'd raced *Jade* several times in the Bermuda Race, and he was happy to hear that I was doing so much work on her. Then I asked about the shaft tube. That's when he said, "You don't know the history of that boat? I stored *Jade* on the hard at a marina down here," he began. "There was an ink factory nearby. It exploded."

A state of shock

Afterward, I'd wake at night, thinking about my boat in an explosion and be unable to fall back asleep. I felt sick. I was dismayed that the guy I'd bought *Jade* from, a guy I'd instinctively trusted, hadn't divulged her history, even when I'd asked. I felt like I'd wasted all my work, time, and money. I was no longer sure I was restoring a solid sailboat, one worthy of my efforts.

So I did the only thing I really knew to do: I dug in deeper. I went all in, because it was either that or walk away. I finished the foredeck, beefing it up with an extra layer of glass over a foam core, and I got rid of the troublesome windlass controls, which had caused the rot in the first place. My goal was to make

Jade safe and simple — and beautiful whenever possible.

A mechanic friend stripped the windlass of its electrical parts and converted it to simpler and lighter no-fail manual operation. Down below, I removed the old head, filled the through-hull holes, and put in its place a homemade composting toilet.

All the while, I stewed over the guy I'd bought *Jade* from. After a month, I decided to write him a letter. I started by thanking him for the boat. I told him about all the work I was putting into her. Then I mentioned that I'd talked to the previous owner, that I'd learned about the explosion, and that I expected him to make things right.

Two weeks later, we talked on the phone. He defended the fact that he hadn't told me, citing that every old boat has a history, perhaps hitting bottom, a drop by a travel lift, a collision with a dock or boat . . . and I could see his point. I'd been around boats enough to know that things happen.

"The word 'explosion' just sounds bad," he said.

I agreed, especially when applied to my single-largest investment to date. He swore that the boat wasn't in bad shape when he'd bought her, and that the original owner had dramatized events during our conversation. (Apparently, the boat had suffered a percussive impact, not a fire-and-fury Hollywood blast.) Then he offered to buy her back from me. But she was in pieces and

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I had countless hours and no small amount of cash into her.

A week later, I received a check for \$1,000 from the seller. He said I could use the money for a survey if I was concerned about the soundness of the hull, though he himself did not doubt that the boat was solid. I appreciated the gesture and thought about the survey, but by then I'd had my head in every nook and cranny in the boat. I'd stripped off the bottom paint and seen the gelcoat. I'd been all over the topsides, and I was back to feeling that I did, in fact, have a solid boat, but one that needed a ton of work, most of which had nothing to do with an explosion. So I put the money into the *Jade* fund, where it disappeared faster than I would have thought possible.

I was a guy in a parking lot with tarps, very limited funds, and an old Subaru full of tools. But I resolved that my project was not only possible, it was worthwhile. The only downside of the affair was that, if and when I sold her, I'd have to explain to a prospective buyer everything that I had not been told, thus limiting the value of the boat — and therefore the value of my efforts. But I chose to ignore that, and pressed on as if I'd have the boat for the rest of my life.

Luckily, I knew several guys in Down East Maine who'd spent their lives in boat shops. So I gathered opinions,

and a local surveyor stopped by and looked the boat over. Everyone agreed that nothing significant was wrong with the boat, she was just a bit forlorn. These guys figured separately that the fiberglass hull had flexed from the percussive impact and then returned to its original shape, a characteristic of fiberglass. But the bronze stern tube had only flexed one way. The absence of cracks or spiderwebbing in the gelcoat suggested that the flexing wasn't major. So perhaps the guy I'd bought it from had been correct and the damage was not catastrophic.

My mechanic friend ran a 6-foot pry bar into the new Cutless bearing — which became sacrificial — and he worked from the far end while I monitored the straight line we'd rigged. Nothing happened at first, then suddenly, and with a creak like a sigh of relief, the shaft tube sprang back into position. We set the bar aside, checked the tube, and it was straight as an arrow.

Into another year

I spent winter away from the boat, but when spring came, bitter cold, I set to work on the centerboard. After researching on the internet, I shifted the blocking beneath *Jade's* keel to one block just forward of the centerboard; apparently, that was the center of mass for the boat, and she'd balance there. I added another set of jack stands for safety's sake, bringing the total number to nine. I parked my old car as close to the boat as I could, reasoning that if *Jade* fell, she'd crush the car and not me or a passerby.

My mechanic friend and I crawled under and chipped the still-frozen earth from beneath the keel with hammer claws. Gravel and clay spit out in small chunks until we had a trench deep enough to drop the centerboard into. It was a hard-won victory. My friend's help reaffirmed a basic tenet of friendship: to lend a hand in executing the stupid.

I ground the board to expose the stainless steel shank, and took it to a machine shop to be rebuilt. Then I reglassed and faired the board, and had the same machine shop make me a new stainless steel pin.

While it was still too cold to paint or fiberglass, I removed the rudder heel fitting and had an insert machined and pressed into it to eliminate the small amount of slop.

When the days warmed, I finished the foredeck, recoated the cockpit sole and the areas around the chainplates, and repaired the two leaking sections of the coachroof. A woodworker neighbor, who'd taken an interest in my project while on his daily walks, made new mahogany handrails and a beautiful tiller of ash and mahogany.



Jed of Center Harbor Sails in Brooklin, Maine, and friend Sara, work on *Jade's* genoa, above. Jed taught Jon, replacing grommets, at left, how to repair and maintain his old sails. A regular boatyard visitor made a new tiller, at right.





Jon's aging border collie, Henry, supervised the refit. A local artist caught *Jade's* character with distinctive lettering on her transom.

After installing the handrails, I replaced the old cabin headliner with varnished birch plywood. I then painted every inch of the boat, top to bottom.

Finally, *Jade* was safe, simple, and solid — and she looked good.

In the water

By the end of June, I was living on a borrowed mooring amid the lobster fleet with my 16-year-old border collie, Henry, whom I hadn't expected to live long enough to have to move aboard. But like *Jade*, he'd defeated the odds.

Through the summer, and in between my time digging clams on the mudflats to support myself, I cruised Down East. In the fall, I headed south for Portland, where I wintered in a slip. Everything went well with the boat, but


by the time I reached Portland I realized that the motor mounts I'd installed were loose in their beds; the lag bolts weren't finding enough purchase. So, settled for the winter, I again lifted the engine out of her.

I drilled out the holes in the engine beds and filled them with epoxy, then redrilled them, making sure the motor mounts wouldn't move. True to form, I couldn't stop there.

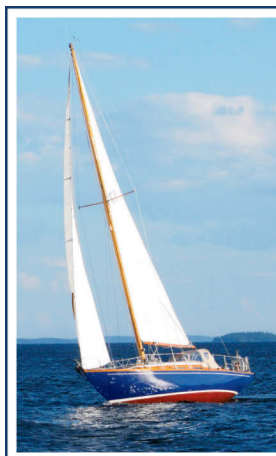
Before returning the Westerbeke to its home, I painted and rewired it, pulled the transmission and had it resealed, and replaced the torsion plate, as it had been making some noise. Each morning, I had to convert my home to a shop, then at the end of the day remake it into a semblance of a home.

After finishing the engine, I knew that my project days were over, that I'd finally be able to sail *Jade* and work on her teak at my leisure, like the yachtsmen around me. But since then I've replaced the standing rigging and recored the last of the rotted

balsa decks and completed a bunch of rewiring, which itself was a simple pleasure after dealing with epoxy and fiberglass. I met a sailmaker willing to teach me how to refurbish my sails, and I spent many evenings with him in his sail loft, resewing seams and replacing grommets while eating pizza, drinking beer, and listening to Frank Zappa.

So all is well, and I now know every inch of my boat, and with a gallon of epoxy and a toolbox (and a 6-foot pry bar) I can fix nearly anything that goes wrong with her. So the old circumnavigator friend of mine had been right when I'd asked him if I should buy a sailboat. He hadn't said yes or no; he'd just laughed and said, "Well, you'll learn a lot, Captain." 

Jon Keller, a writer, commercial fisherman, and former Montana guide, divides his time between his sailboat and Down East Maine cabin. His first novel, Of Sea and Cloud, was published in 2014.



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Whence the Magic Ladders?

Good planning, instinct, careful observation, or luck?

BY THOMAS J. MISA

In *Good Old Boat* there is an entertaining trope, or recurring narrative pattern, that shapes many Learning Experience stories: let's call it Calamity Overcome. It's a sailing story where the writer messed up and lived to tell us about it. It goes like this. A series of simple mistakes leads to a buckled foredeck, sagging shrouds, and a threatened dismasting. Or heavier than expected weather leads to severe pitching that clogs the fuel line during a Lake Michigan storm. More recently ("Between a Bridge and a Hard Place," May 2018), backing up against moderate seas without a firm hand on the wheel leads to a jammed rudder and a Mayday call. Once the calamity occurs, the narrative tension revolves around the skipper's efforts to resolve the dire situation. Sometimes, after the first couple of paragraphs in these stories, I fairly scream: "Don't make forced errors!" I want to explore an alternative narrative pattern, let's call it Calamity Avoided. I think it contains an important moral about

our responsibilities as mariners and members of the sailing community.

A wilderness and cold water

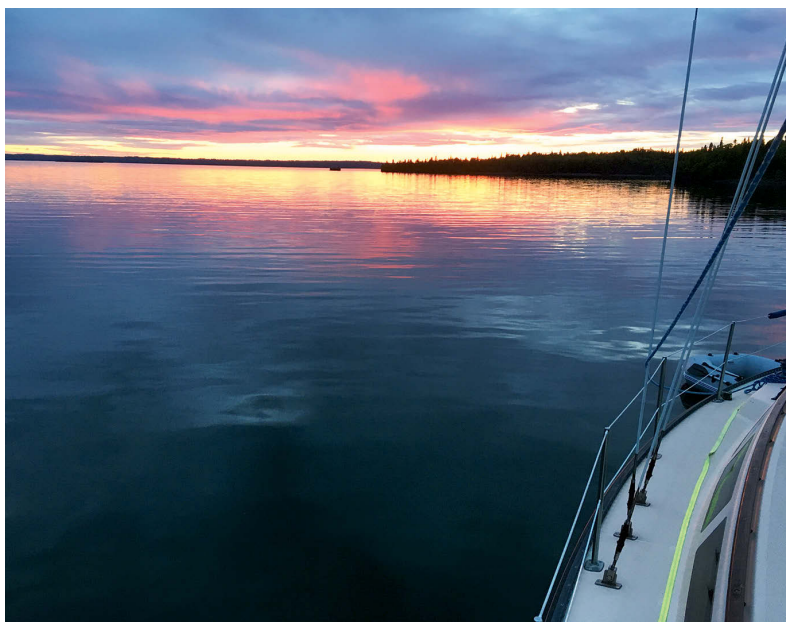
It's mid-June and, despite the long midsummer days, Lake Superior's



surface is 38 degrees. Singlehanded on Superior for the summer months, I am mindful that anyone falling in lasts around 15 minutes, loses consciousness, and then dies of hypothermia. All 29 crew members of the *Edmund Fitzgerald*, memorialized by Gordon Lightfoot's 1976 hit song, went down and never came back up because the water was too cold . . . "The lake, it is said, never gives up her dead," echoes in my mind.

I'm approaching my first true wilderness anchorage, Susie Island. To say the least, it's pretty, but foremost in my mind right now is the desire for a ladder of about six feet or so to keep me above the deathly cold water. Despite what my paper chart and depth finder are telling me, the GPS screen spells certain doom. In my mind a terrible grinding and gnashing sound echoes across the still water. Somehow, *Sunyata*,

Thunder Cape's Sleeping Giant reclines on a blanket of fog, at top. Some Superior anchorages are remote but snug, at left.



Despite the warm glow, the waters of Lake Superior are bone-chilling, even in summer, at left. Jacklines on deck are a wise precaution. *Sunyata* is safely afloat, below, but the GPS might have her ashore.

my S-2 9.2A, drawing 5 feet, continues more or less straight into the deep inlet in Susie Island. I picture her fiberglass keel leaving behind a hideous sitzmark on the rock bottom.

The ladder in my mind comes from a childhood story where a boy is watching a painter high up a ladder leaning against a barn roof. The boy sees the ladder slide off the roof, but instead of the painter suffering serious injury or even death, the falling ladder fades away and a second ladder, seemingly real, stays safely in place. The protected painter is entirely unaware. The boy believes benevolent magic was at work. I wonder: do sailors have such magic ladders?

If so, the magic ladder for mariners is less a supernatural phenomenon, and I think it's not even purely blind luck. It's knowing when to trust your senses and see the outlines of tall trees far up above the fog to avoid an island's shoreline, or when to "hit" the shore of Susie Island because that's actually where the water is deep enough to safely anchor. Calamity Avoided is often a matter of attentive chart work, an accurate depth finder, and wide-open eyes and ears.

The Susie Island episode echoes the many more stored in the GPS. In two and a half months on Lake Superior that summer, I had the good fortune to "hit" bottom more than a dozen times. Once, when *Sunyata* was tied up safely at Malone Dock, the screen showed her 150 feet inland.

A couple of weeks later, I'm sailing out of Thunder Bay and the water has warmed to around 40 degrees. Hypothermia had recently claimed three boaters (including two NFL players) in 68-degree water off Florida when their vessel capsized during a posted small-craft advisory.

In Canada, banks of fog sometimes clear off midday, revealing the stunning shoreline of rocky precipices and narrow passages between headlands and islands of all sizes. But then the fog bank descends and I am alone in an inland sea of gray. One evening, the downbound freighter *Federal Seto* — I can feel the rumble of its deep-throated engines but cannot possibly pinpoint its direction — sends out sécurité advisories; its radioman warns "visibility zero" off Passage Island. But the next morning it's the distinct thrill of heavy seas whipped up by strong northeast winds with a long fetch. The 1,000-foot-high bluff of Thunder Cape's Sleeping Giant blocks the two Canadian weather channels, so the only weather forecast I have comes from the far-distant Keweenaw Peninsula, and they must have it all wrong. Anyway, perhaps only sissies pay attention to predictions of 10-foot seas on Lake Superior.

It's easy to imagine how this scenario might unfold. We know from the Calamity Overcome stories in



Good Old Boat and elsewhere that heavy seas have a way of clogging fuel filters, disabling engines, cracking windows, flooding lockers, breaking hatches, snapping sail hems, bending booms, and stretching shrouds, stays, or halyards to the breaking point. Although I've installed jacklines fashioned from sturdy climbing webbing and secure carabiners, all that protective gear is a hassle to use, and perhaps I'll be tempted to tie down a loose anchor on the pitching bow. The 30-minute clock that ticks when you're alone in the frigid water might start for a variety of reasons, most of them avoidable.

Saved again

My longest passage of 55 nautical miles across open water led to the summer season's only expensive mistake. By late August, it was time to be heading home to Pikes Bay in the Apostles, and my dutiful attention to bad weather meant that I was running a bit late.

Strong winds and heavy seas kept me at Isle Royale's idyllic Chippewa Harbor, where the well-protected inner basin is a fine place to hole up in heavy weather. By then, I'd abandoned my original hope to circle the far side of the Keweenaw Peninsula then motor up the Keweenaw Waterway, and instead I was headed from Isle Royale to the "wicked rock shoals" at the entrance to Copper Harbor.

Halfway through the open-lake passage, a west wind came up, freshened to 20 knots, and kicked up 3- to 4-foot waves that made my 135 genoa far too much sail. For most of an hour, I tried to coax it in, but the wind and waves were too strong. "If you're thinking about reefing . . ." I might have clipped in to my lifelines but, strangely, I did not. Finally, I took a leaf from the storm-tossed Pardeys and executed a "heave-to." That stopped my wild ride, but the genoa did one extra round of flapping in the wind and twisted itself around the year-old headstay. (It didn't see a second summer and my pocketbook is the lighter.) Suitably shortening up the genoa to what Bayfield sailing captain Beth Cozzi calls a "bikini jib," I proceeded onward to Copper Harbor.

After this excitement it was early evening, and the wave-tossed 11-hour passage had evidently worn me down. The sailing directions from Bonnie Dahl's *Superior Way*, the NOAA chart, and even my handheld GPS all agree that the entrance to Copper Harbor is clearly marked by range markers for a course of 190 degrees. I needed only to line up the red/orange markers and slip into the long and west-wind-protected bay. Unaccountably, I saw bright lights something like the red-laser range marker I'd passed through three times in Canada's Nipigon Strait, only these lights — if I'd followed the dangerous mirage — would have sent *Sunyata* straight on to the "wicked rock shoals" and certain damage. I might then have written about Calamity Overcome.

But, just then, a magic ladder did its thing and gave me a second chance. I looked again, carefully this time, and finally saw the pair of small orange/


red blazes, lined them up, and ran in to Copper Harbor.

A network of ladders

I believe magic ladders come in several forms. One is careful, even obsessive, preparation. Defense in depth is necessary for singlehanded wilderness sailing. Stout jacklines, reserve diesel, fuel stabilizer, radar reflectors, extra food supplies, spare nylon propeller, heavy anchor and stout rode, tools enough to overhaul everything on board — I deliberately planned and prepared all these. My boating brother, aboard for two weeks in Canada, was often posted at the bow, and in the vaguely charted Slate Islands threaded us through narrow shallows.

Simple luck is a magic ladder of sorts. There was my botched Bahamian moor in tiny McNab Harbor, where a release line fouled the second anchor. (Bahamian moors in place for three other overnight wind shifts kept *Sunyata* off nearby shores.) Luck led to the satisfying end to an exquisite 40-mile sailing day from Little Lake Harbor across Nipigon Bay and down Nipigon Strait, along those laser range markers, with a sail-in anchorage at Moss Island — a quarter hour before severe north winds raised impressive whitecaps. Shallow Nipigon Bay kicks up a 4- to 6-foot wind chop at the drop of a hat, but we'd long passed that danger point. Or perhaps the magic ladder had worked its wonders and let us proceed safely into a protected anchorage.

The sailing community itself forms a magic ladder too. That summer, I had a dozen or more instances of Calamity Avoided. The singlehanded captain of *Peregrine* warned me off a shallow approach at Grand Marais. A vintage-Chris-Craft restorer caught me at Red Rock, Ontario, before my bow pulpit could shear off the dock's electricity and water pedestal. Larry and Judy on *Allegro* pointed out Otter Cove as a valuable hurricane hole. I am grateful for this protective community and thankful for its portable wisdom. I am even thinking more positively about the sharp radio message one

day in heavy fog, fairly shouted over channel 16: "*Loon*: you are on the *wrong side* of the buoys! Keep the bell to the left!" *Loon* was negotiating a tricky entrance to Siskiwit Bay, I think, and the wrong side of a bell buoy would have meant a hard grounding and a chapter of Calamity Overcome. Instead, the alertness of a sailor-colleague brought about Calamity Avoided. It's in our power to do the same. 

Thomas J. Misa, a native of Port Angeles, Washington, attended schools on the East Coast, then taught the history of science and technology for three decades in the Midwest. His website is tjmisa.com. Recently, he and his spouse, along with Sunyata, relocated to Lopez Island in Washington's San Juan Islands. So now, Sunyata sails in the Salish Sea.

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Wrenches in Wraps Won't Wander



Nor will SAEs mingle
with metrics in the bottom
of the toolbox

BY DAVID LOCHNER

Design considerations

Though a wrench wrap is simple in concept, three primary design and construction aspects deserve consideration: fabric, pocket depth, and flap length. On this, my third version, I made

the pockets deeper and lengthened the flap. I learned from earlier versions with shallow pockets and a short flap that wrenches had a tendency to fall out of the wrap and into disarray. By finishing the edges with binding tape instead of a simple seam, I color-coded the wraps; one color for the metric set, one for SAE.

I found that fabrics such as cordura nylon, acrylic canvas, and cotton canvas met my requirements

Entropy, the natural process that leads to disorder, was well manifested in *Second Star's* toolbox. Wrenches would go AWOL, and projects took longer as I searched for the elusive $\frac{7}{16}$ -inch wrench. Contributors to the mayhem were a Yanmar diesel requiring metric wrenches and multiple fittings requiring SAE wrenches.

A good cure for wandering wrenches would be easy to use, conserve space, and be portable. If it was not easy to use, I would not use it, and I would be back to square one. Space is always at a premium on a boat, and especially so in my overburdened tool locker. Portability was important, because if I could easily bring all the wrenches to the job site, I wouldn't have to keep going back to the toolbox to fetch the next one I needed.

My solution was a tool wrap or tool roll. When I unroll the wrap, I can easily select the needed wrench and return it to its proper place. An unanticipated benefit of the unrolled wrap is that it provides a place to set down parts while protecting the underlying surface.



Deep pockets ensure the wrenches don't work their way out, top left. The flap, top right, further secures them, and allows a tidy, tight roll, lower right. An earlier version had shorter pockets, at left.



for durability (to withstand the rigors of frequent use) and flexibility (so the wrap can be rolled easily into the smallest volume). A lighter-weight fabric, such as taffeta, might not be durable, and sailcloth is too stiff to form a compact roll. I chose marine-grade cotton canvas because I had some left over from another project. This material in particular is also absorbent, which is a nice feature as it will absorb any grease or oils that are on the tools when they are returned to the wrap. The poor absorbency of synthetics would allow those contaminants to be spread to other tools in the toolbox or to other surfaces.

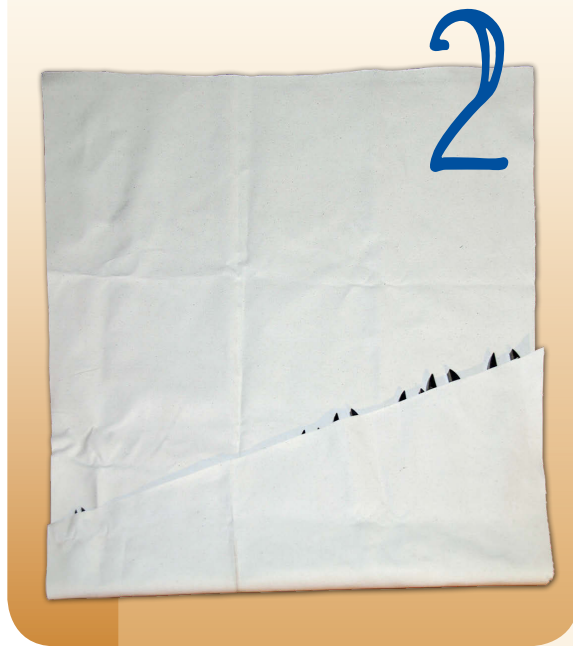
A final design consideration is whether to secure the flap closed or provide a tie to prevent the wrap from unrolling. Both options have merit, but for this version I did neither, as I've found that a longer flap and deep pockets are sufficient to secure the wrap.

Measure the fabric

The length of the fabric needed will be three times the length of the largest wrench, and the width is determined by the number and size of the wrenches. While it's possible to calculate the width, simply laying the wrenches out on the fabric is quicker and less prone to error. Lay the wrenches out from smallest to largest, allowing about $\frac{1}{2}$ inch between them (*photo 1*). A little extra space is preferable to too little. If finishing the edge with binding, allow for a fat $\frac{1}{2}$ -inch margin at each end. If finishing with a seam, allow an inch.

Trim the front pocket

Align the wrenches box-end-down one-third of the way up the material. Fold the bottom up to cover the wrenches. The longest of the wrenches should be just covered (*photo 2*). Fold the fabric back at an angle so the fold just touches the top of each wrench. Mark the ends of the fold and cut along the fold. Fold the just-cut edge in $\frac{3}{8}$ inch and secure it with



basting tape. Repeat to bury the raw edge in the seam and sew the edge with two rows of stitching.

Form the pocket

Lay the fabric on a flat surface with the seamed edge facing up. Place the wrenches on the fabric and fold the bottom up over the wrenches. Adjust the position of each wrench so the box end is at the fold and the open end is exposed and the size marking is visible (*photo 3*). Mark the fold and the top of the pocket. On both sides, run a row of stitching close to the edge to form the pocket.

Adjust the flap length

With the largest wrench in the pocket, fold the top flap over the wrench. The flap should cover the wrench and almost reach the bottom of the pocket. Trim the fabric if needed. If the flap is not long enough, the wrenches will tend to fall out; if it is too long the edge will be exposed.

4



5



Trim the edges

Trim the top corners of the fabric so they are rounded, not right angles. Attach binding around the outside edges (*photo 4*) — it's not needed along the bottom fold. (A binding attachment for the sewing machine makes this step much easier.)


Sew the wrench pockets

Start with the smallest wrench, placing it in the short end of the pocket. Make it snug. Using a square or straightedge, mark a line square to the fold so the fabric is snug against the wrench (*photo 5*). Run a row of stitching along this line. Repeat for each wrench. Each individual pocket



To see a video of David Lochner making a wrench wrap, visit our YouTube channel: [Good Old Boat Magazine](#)

should be snug enough to hold its wrench but not so snug as to impede removing or inserting the wrench.

Looking over the product of my efforts, my wife, Susan, asked, "Could you make one for my knitting needles?" 

David Lochner, a retired school psychologist, likes to write about the human and humorous side of DIY boating. For the past 30-odd years, he and his wife, Susan Baldacci, have been plying the waters of Lake Ontario. Currently, they sail

Second Star, a 1993 Sabre 362, out of Little Sodus Bay on the southeast shore of Lake Ontario. When they finish their refit, Dave and Susan plan to sail out the St. Lawrence River and then south along the US East Coast. Follow their progress at [SV-SecondStar.net](#).

Corralling the odd men out -DL

Over the years, a handful of special-purpose wrenches have found their way into the toolbox — stubby wrenches, crowfoots, bent wrenches, and the like. Due to their odd sizes and shapes, a tool wrap was not going to work for them. The solution lay in an office-supply store: a large binder ring. These rings

only cost a dollar or two and function like a key ring. A simple screw closure allows the tools to be easily removed and returned. Find one tool and you have found them all. A little LanoCote on the hinge and closure helps to keep rust at bay.




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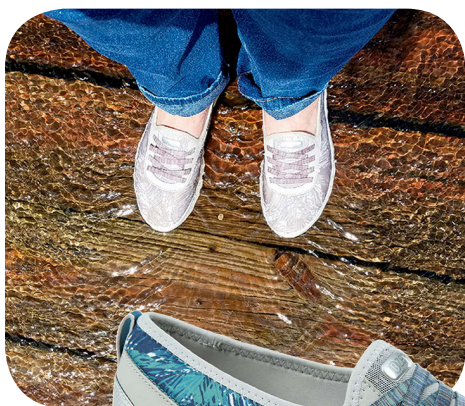
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Hurricane-tested water shoe

I live in sandals and don't often wear shoes. When I received the Bzees Wink Water Shoes to give them a test run, I dutifully wore them around for a while, at home and on the boat. They fit well (I got just the size I needed by using the company's online sizing chart), were light enough that I could feel the deck surface beneath my feet (a welcome contrast from heavier deck shoes I own), and they were comfortable.

I went back to my sandals, but when Hurricane Irma made landfall at my Florida home, the Bzees became my go-to shoes. Most of our property was under water for days, and I was off and on boats and wet docks. In the Bzees, I felt comfortable and sure-footed the entire time. They are grippy and dry out quickly. After Irma moved on, I welcomed having the shoes for walks on the shell beach (strewn with sharp stuff) and as protection against stingrays when walking at the tideline.

For more information: www.bzees.com.

Nancy Koucky, *Good Old Boat* art director

Stowaway kit for steering wheels

I've long envied the owners of newer sailboats who can easily remove their steering wheels while at anchor and store them out of the way. At the Annapolis Sailboat Show last year, I met Adam Cove, the CEO of Edson Marine, which has been around for over 100 years and whose steering systems and wheels were installed on a lot of good old boats. I suggested to Adam that Edson make a retrofit kit that allows older-boat owners to do the same. "We already do!" he told me. I've been using the Edson Rail Mount Wheel Storage Kit ever since.

The kit includes a replacement nut that can be removed by hand and a rail-mounted spindle to store the wheel. With the wheel off, our cockpit feels twice as large at anchor — it's like a new boat . . . in a good way.

Edson makes an array of standard and metric sizes (though Adam reports most of the wheel shafts on good old boats are 1-inch diameter with #14 SAE thread).

For more information: www.edsonmarine.com/products/sailboat-steering-wheels.

Michael Robertson, *Good Old Boat* editor



Quick-action fender hangers



It's easy to get out of your car and open the garage door by hand, but once you have a garage-door opener, you never want to go back. So it is with the Accon Marine Fender Hangers. It's not a huge task to tie on fenders for docking and then untie them while under way; my husband and I have been doing it most of our sailing lives. But having installed these fender hangers, I'm spoiled.

The fender line ties to the hanger's ring. When we cast off, I detach the ring from the hanger's base. When I need it later, I can quickly reattach it without having to adjust the line again.

The hardware is polished stainless steel and appears well made. The mount, which is designed to be fastened to the deck, is nicely rounded, low-profile, and unlikely to snag lines or stub toes. The rings are offered in two sizes, ½-inch-diameter and 1-inch-diameter, to match smaller or larger fender lines.

For more information: www.acconmarine.com.

Nancy Koucky, *Good Old Boat* art director

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

continued from page 7

Doubling down with digital (continued)

This is a neat, neat, neat idea! Many thanks — I can now take *Good Old Boat* on road trips with me!

—Jeff Jones, Wallingford, Penn.

Thank you, thank you, thank you. What a pleasant surprise this morning . . . and this issue includes an article about a project I've wanted to tackle on my Islander 30 — a hardtop dodger to go with my new FRP headliner!

—Willem Groeneveld, Victoria, B.C.

We are gratified that readers have had such a positive reaction to our decision to include the digital subscription with the print subscription. These are just a few of the comments we've received. We encourage any subscriber who would like to receive the digital issue but didn't to send their email address to brenda@goodoldboat.com.

—Editors

Repairing sails with sticky stuff

I liked Mike Litzow's story ("Quick Sail Repairs on the Fly," July 2018) and agreed with everything he said. I once did a long-term study of adhesive sail-repair materials for *Practical Sailor* — I still have samples on my roof. I interviewed several well-respected sailmakers and they agreed that patches glued with polyurethane adhesive are a good

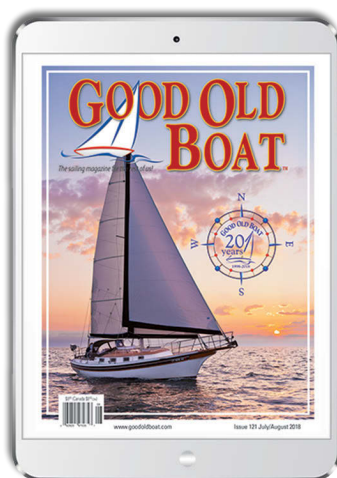


Polyurethane adhesives remained well-adhered to the bottom surface, but peeled cleanly off the UV-exposed side.

battlefield expedient. Interestingly, I learned that 3M 5200 doesn't stick to new sailcloth very well, but it's perfect for older cloth. I also learned that polyurethane adhesives, including 3M 5200, are very vulnerable to UV damage if the sunlight strikes the bond area; 3M 5200 will peel right off sailcloth after one or two years in the sun, the result of UV penetrating the cloth. Of course, this is probably academic

for sails, because it takes a long time to accumulate a year of exposure to the sun.

My new boat has laminate sails. They were in a bad state when I bought the boat, and I've gained a lot of repair practice. Laminate sails are built with glue and are best repaired with glue (sewing just makes a "tear here" line in Mylar). I've found that Dr. Sails is the bee's knees for most sail repair, including laminates. Compared to 3M 5200, it is



more flexible, has a 20-minute cure time, is easier to work with, and is far more durable in the sun. There is a reason that this is the stuff that goes on the Volvo boats.

—Drew Frye, *Good Old Boat* contributing editor

Bike-chain messenger

I am now 77 years old, but years ago I found a much better way to replace a halyard, even steel cable ("Fishing for a Halyard," July 2018). Everybody knows you can't push a rope, but you can push a bicycle chain, which can be as narrow as $\frac{3}{16}$ inch. It's easy to weave string or fishing line into bicycle chain. Chain is much heavier than most sinkers and will drop without snagging.

And when you swing by the bicycle store to get some old chain, also pick up a wheel spoke. At 10 to 12 inches long with a small hook on the end, it makes the best tool for retrieving the chain at the foot of a mast. Finding the chain inside the mast is easy, just rock the boat and you will hear it slapping against the mast. My method has never failed. Use the string to pull the new halyard down.

—George Kendall, Kill Devil Hills, N.C.

High-water hurdles

I enjoyed Don Davies' article on the cost of sailing ("The Cost of Sailing," *The Dogwatch*, June 2018). Slick submerged docks were not the only problem. My marina sits on a gravel bed just a few feet above lake level. When the water rose, the boatyard went under water, complete with carp swimming and spawning. When we tried to launch *Second Star*, our 1993 Sabre 362, it took the travel lift more than an hour to move the 150 feet or so from the driveway to the boat. After lifting the boat and trying another 30 minutes to move it more than a boat length from the cradle, we gave up and had a beer. A wheel on the travel lift sank up to its axle in mud (that's about knee-high). The next morning, we managed to free it from the mud and launch *Second Star*. I'd describe the process, but one of your readers might work for OSHA.

—Dave Lochner, Fair Haven, N.Y.



High lake-water levels put the travel lift in a sticky situation.



On Sunday, April 22, 2018, in the Pacific Northwest, Ken Pfister photographed a gaggle of good old boats competing in the Strait of Juan de Fuca, near Victoria, British Columbia, in the first organized sailboat race of spring. It's likely the first of several informal races organized by the Royal Victoria Yacht Club during the season.

Leave off the wrap

Great magazine, but I have one request: please, please, please do not wrap the print issue in plastic. I would rather receive a beat-up copy (has never happened, though) than put more plastic in the environment. I am making a conscious effort to reduce my purchase of products encased in non-recyclable materials. Please help me do that.

—Thomas Musselman, New Port Richey, Fla.

Thank you, Thomas. We only polybag because of the complaints we've received when we've stopped in the past (and the cost of polybagging was lower than the cost of replacing damaged issues). But it's time to reconsider our polybag practice, and we're doing that now. Your letter is the catalyst. Stay tuned. And we welcome all subscriber feedback on this issue, for and against sending out our product wrapped in plastic.

—Editors

Irrational ratio

I really enjoyed reading the July 2018 issue. Thank you for entertaining and attempting to enlighten this good old boater for the past 20 years. I want to point out what I think is a typo in the "How Fiberglass Boatbuilding Evolved" article. On page 35, the article cites one benefit of the SCRIMP infusion system as "high resin-to-glass ratios of up to 70:30." It should read "high glass-to-resin ratios of up to 70:30." It might also

be helpful to specify the ratio as being either percent by weight or volume.

Sam MacNichol, A42 Sunrise, West River, Md.

You're exactly right, Sam. Good catch. For some reason, resin and glass switched places in that reference and the editors didn't spot it. This ratio is commonly expressed as percentage by volume.

—Editors

Is it a bay or a harbour?

You published a correction regarding the location of Lake Ontario's Hamilton Bay ("News from the Helm," *The Dogwatch*, June 2018). The last time that I lived in that area, in Burlington, I kept my boat in Bronte (Oakville) and the name of the bay in question was Burlington Bay. I never heard it called Hamilton Bay even when working at Stelco in Hamilton, which is on the bay.

Mac Lindsay, Courtenay, B.C.

This is the kind of gnarly detail that the Good Old Boat fact-check team should be ironing out. The bay in question is indeed at the western end of Lake Ontario but its name was changed in 1919 from Burlington Bay to Hamilton Harbour.

—Editors



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

Boats for Sale



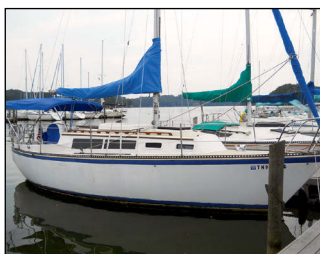
Pearson Triton 28.5 with trailer

1962. Classic gem in Sailboat Hall of Fame. Rehabbed '05, newly glassed deck, w/canvas/fiberglass non-skid. All deck screw holes glassed. No soft deck rot. Exc. brightwork. Unique bronze faucet, hardware, ports, lights. Tabernacle mast step and electric winch. Condition vg/exc. Always in fresh water. Mainsail, 4 jibs, spinn. New head, marine radio, dinghy, very good lines/cabin cushions. Well-maintained Atomic 4 gas 30-hp engine. Two extra bunks/sleeps 6. Many photos on Craigslist. Chicago. \$20,000.

Joe

773-355-9751

nerod@sbcglobal.net



Mariner 28

1977. Sail anywhere! New Hampshire quality, abundant teak makes for warm, inviting cabin. Good cushions in cabin and cockpit. Wheel, diesel, bimini. RF 100 and 150 jibs, maize-and-blue light-air genoa, spinnaker, FB main. Spinnaker pole, whisker pole. ICOM VHF, Pyle AM/FM/Weather CD/DVD radio receiver, foot-pump sinks. Standing headroom, teak privacy doors. Split stern rail, swim ladder. New barrier and bottom paint Sept. '17. Everything to sail or motor today. Knoxville, TN. \$8,500.

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International 800

1964. 42' yawl. *Sanderling* is a unique center-cockpit yawl built in Germany. Totally rebuilt by owner over 10 years including cabins, beautiful mahogany interior, new Beta engine. Many planks and frames replaced, hull refastened. All systems and sails upgraded, including watermaker, solar panels, wind gen, and propane cabin heater. Must sell due to health reasons. She is ready to cruise! Must see to appreciate her uniqueness. West Bath, ME. \$42,000 OBO.

Robert Deans

207-389-6180

sanderling2000@yahoo.com



Yankee Yachts 38

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

Howard Green

603-498-1067

Howard.h.green@raymondjames.com



Cape Dory 28

1977. Yanmar 2GM20F 16-hp diesel, RF 135 jib, reefed mainsail, new bimini, Garmin GPS Map 441s, Raymarine ST 2000 AP, solar-charged batteries, new Jabsco head. Origo 2-burner stove, Magma propane grill, standing headroom. Engine serviced recently. Many accessories including Yanmar service manual and 34-page owner's manual. Veteran of several East Coast voyages. Owner ready to retire. Galesville, MD. \$12,500 OBO.

Dixon Hemphill

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dixonh1925@gmail.com



C&C 35 Mk I

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

John Fillipini

703-409-9187

johncfillipini@gmail.com



Cape Marine Coast 34

1995. Performance pilothouse double-ender cruiser built to a high standard in British Columbia

by Randle Yacht Corp. Beautiful light-mahogany interior, Perkins 4-108 (low hours), 4.5KW generator, Cruisair AC system, new 300' 5/16" anchor chain. Charleston, SC. \$76,500.

Gary

678-230-1956

gkConcrete@

ConcreteEvaluator.com

www.Coast34.com



Westail 28

1976. *Rola* is factory finished. Yanmar 27-hp diesel (360 hrs). Kanzaki gearbox. Propeller. Vetus water-injected muffler. Analog instruments: tach, fuel gauge, engine hours. 30 gal fuel. Compass, depth, AP, LCD radar, VHF, GPS, iPad with US and Canada charts. Wallas diesel stovetop and heater. Adler Barbour 12V Cold Machine fridge. Main, trysail, genoa, jib, storm staysail. 4 anchors. Port of Poulsbo, WA. \$22,500 OBO.

Terry Lee

425-609-8127 or 260-492-7773

lee.terrylee60@gmail.com



Catalina 30

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Tyler Heerwagen

408-667-2138

theerwagen@yahoo.com

www.1978catalina30.com

All of these classified ads and more appear on the

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website: www.audioseastories.com/adverts/



Pearson 26 Weekender

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

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



Hinterhoeller 28

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

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



Vancouver 36

1978. Fully equipped bluewater cutter in sound condition. Designed by Robert Harris and manufactured by Durbeck in FL. She has many miles in her wake including two transatlantics and is ready for new owners with dreams of distant shores. See website for detailed description, equipment list, many pictures. Potomac River, VA. \$37,500.

George Hunt
434-591-4599
george@w4avo.org
http://w4avo.org/promise.html



Allied Princess 36

1972 ketch. Hull #37. I have owned the boat since 1984. My bluewater days are coming to an end. She is fully equipped and ready to cruise. Extensively upgraded in '10, including new engine (Yanmar 3JH5E 39 hp), new propeller and shaft, Seafrost 12V fridge, D400 wind generator (mizzen mounted), Harken Mk IV RF, new AC panel and wiring. Equipment list and additional photos available. In the water. Reedville, VA. \$27,000.

Bill Mitman
484-947-3456
Jessiewelchsale@gmail.com



Baba 35

1979. Hull #12. Bob Perry classic restored with new mast, standing rigging, electronics (Raymarine chartplotter, W&D, all new wiring), plumbing, AP, much more. Everything you need to go blue-water cruising except no engine in boat. Excellent opportunity to own a beautiful boat with all new systems as of 2015. Oceanside, CA. \$55,000.

Karen Sonnenberg
570-814-4090
karen@eworldpublishing.com



Interlake 18

1933. Interlake prototype. Beautiful! Solid mahogany hull & deck, newly painted, original bronze hardware, spinnaker, main, jib, all good condition. Galvanized big-wheel trailer. Freshwater boat, always stored indoors. Age and health force sale. Jefferson, TX. \$15,000.

Bob Sanders
903-665-1828
saneasyllum2012@gmail.com



International Folkboat 26

1976. Marieholm #2595. Featured in GOB Sept '14. Extensive equipment. 6-hp Tohatsu 4-stroke OB, '11 Sobstad RF jib, Furlex, Andersen #12 ST winches. Additional suit of hank-on sails, solar panel, SIMRAD Tiller Pilot, Delta anchor, new SS lifelines, Boomkicker, soft vang, Schaeffer traveler and mainsheet blocks. New Standard Horizon DSC VHF. Raytheon depth. Charleston, SC. \$10,600.

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



Camper & Nicholson 35

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

David Clegg
250-737-1042
www.campernicholson35sailboat.ca



S2 26A

1975. Harken RF, jib, mainsail, storm sails all in good shape. Atomic 4 4-cyl. 40-hp. gas engine with 20-gal SS fuel tank. Edson pedestal steering w/compass & AP. Shallow 2.8' draft, full keel, 8' beam, weight approx. 6,500 lb. Microwave, icebox, SS sink w/ faucet, tile countertops. Oak-faced

custom cabinetry. Loadmaster tri-axle trailer, GVWR 10,500 lb with custom cradle to fit boat. Hortonville, WI. \$7,500.

Roger Teske
920-850-6342
rteske@charter.net



Nimble yawl

1986. Keel/CB. LOA 31', beam 9', draft CB down 5'6", up 39". Ted Brewer design, great condition, in commission Mid-Chesapeake. Tanbark RF genoa, main, mizzen, spare orig. sails. Covers, Bimini, side curtains Yanmar 2GM20 FW-cooled. Pressure water, great upholstery, sleeps 5. Propane stove w/oven, VHF, 2 APs, fully found, well maintained. Email or leave a message for details. '17-'18 survey in/out of water. St. Leonard Creek, Lusby, MD. \$19,900.

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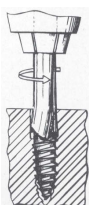
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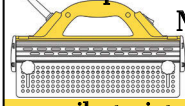


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Could Water Really Be Blue?

A coral atoll revealed the sea in its true colors

BY JOHN SIMPSON

As a boy, I felt very lucky to grow up at Leigh-on-Sea, on the north shore of the Thames Estuary in Essex, England, where the tide really goes out, leaving about two miles of thick mud. There was a small fishing industry in the old town, and before the banks would dry out completely, shrimp and cockle boats would feel their way in or out along a long creek.

One way I had of raising money as a young lad was to buy charcoal prints from a local artist, color them in, and sell them to tourists. I knew to depict the sea in black, the color of the Thames. I'd seen postcards of the South Pacific showing the sea colored in beautiful blues and turquoise, but I tended to surmise that these colors were simply added, as I added color to my prints.

Growing up, I spent most of my time afloat on boats. My father was a research scientist and had a passion for the sea. He owned several lovely old working fishing boats and yachts. He refitted them at Leigh, but in the summer he preferred to keep them farther north, on the River Crouch, where they stayed afloat whatever the state of the tide.

In my early teens, I started racing GP14 dinghies at Leigh with my pals. Needing money to buy my own, I worked on the local cockle boats for \$1 a day. This was good money in the late 1950s and early '60s, much better than a paper route (besides, I could never get up that early for anything other than the tide).

As a young man, I left Indonesia's Java Island on my first ocean passage aboard *Kalayane*, a ketch I was delivering. We passed through the Sunda Strait, between Java and Sumatra, where the volcanic mountain of Krakatau loomed menacing and magical to starboard.

After we'd been at sea a week, Australia's Cocos (Keeling) Islands came into view. Four enormous bottlenose dolphins played around the bow and escorted *Kalayane* through the entrance pass at midday and we dropped anchor close to the old telegraph station buildings on Direction Island. The one other yacht in the anchorage was flying a German flag.

I could see our anchor where it sat on the bottom in about 20 feet of water a wonderful light-blue color. Only when I looked around at the shades of blue and turquoise water in the lagoon did I really see that those South Pacific postcards weren't fake!

I've since enjoyed a full sailing life and have visited quite a few coral atolls all over the world. However beautiful many of them have been, nothing has quite compared to my first time seeing the wonderful blue colors of the sea. *✍*

John Simpson grew up on the north shore of the Thames Estuary in England. His early experiences aboard his father's smack imbued him with a lifetime's passion for sailing and the sea. He considers himself lucky to have turned this passion into work racing, coaching, and delivering yachts, while also making several personal adventurous voyages.



Scuffling out to father's smack



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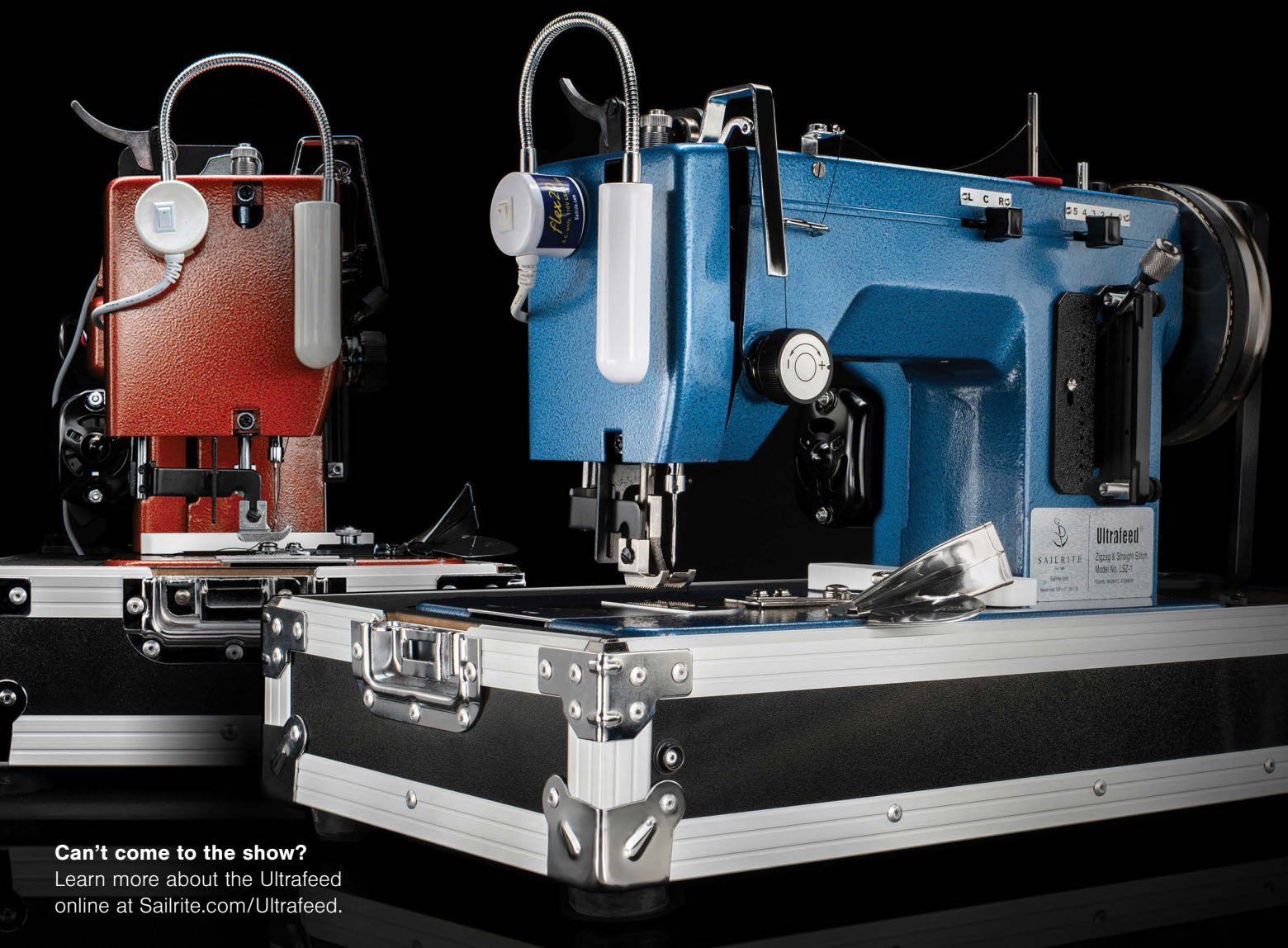


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