

# The ultimate REFIT

Overhauling an abandoned boat for a solo nonstop race around the world is a tall order that one skipper is chipping away at, one layer of fiberglass at a time

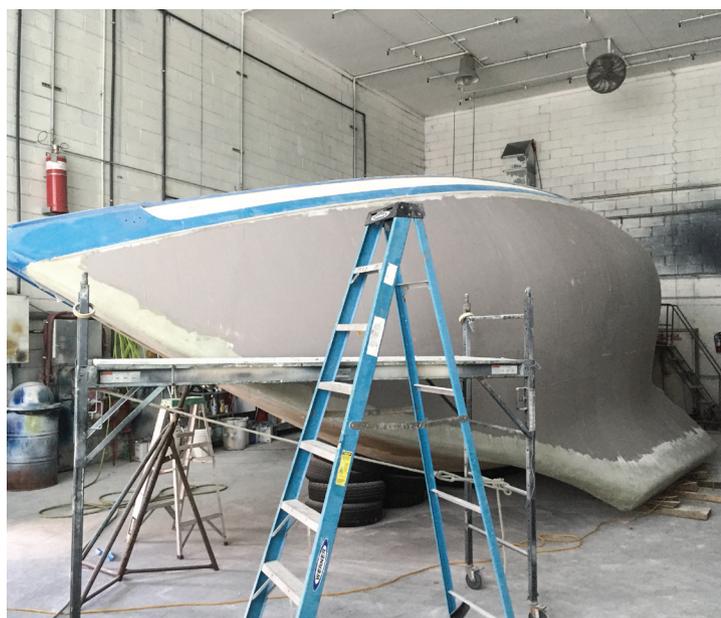
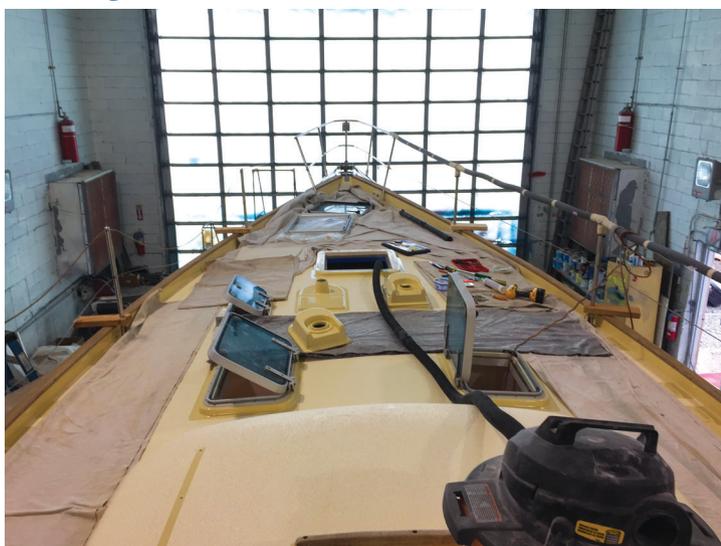


By Istvan Kopar

**T**hey say the hardest part of a circumnavigation is the preparation. I made my own 31-foot boat for my first solo circumnavigation in 1989, and I am now retrofitting a 30-year-old Tradewind 35 for the 2018 Golden Globe Race. In many ways, the retrofit has proven more challenging. Making an old boat race-ready is hard enough, but the Golden Globe Race only allows technology comparable to that available in 1968. Boats must be pre-1988 designs, 32 to 36 feet long, with a full keel.

Selecting *Puffin*, the Tradewind 35, wasn't difficult; it was the only eligible design in my area that fit my budget. The boat was built in Poole Dorset,

United Kingdom, and launched in 1986. Her first owner, John F. Nally, sailed her across the Atlantic to his home in upstate New York. After Nally passed away, his family stored *Puffin* for several years before selling her. The boat's condition reflected her long abandonment and birds, squirrels and bees had become regular tenants. Her bottom had no barrier coat, her chainplates were not convincing, and the plumbing system's condition was impossible to determine without taking the cabin apart. Additional complications included ice-related damage to the bowsprit and a broken stainless steel weld. Considering the yacht's questionable condition and the many expenses I knew would be required, I made a bid much lower than the asking price. I offered to keep the name *Puffin* in honor of her late owner, and emphasized that I would



***Puffin's* refit required removing the gelcoat from the topsides, sanding, then laminating biaxial fiberglass cloth on. In order to accomplish this, the boat was laid on its side supported by dozens of tires.**

be sailing her back to her birthplace in England. Nally's widow Johanna graciously accepted my offer.

*Puffin's* refit must be focused on optimizing her speed and preparing for the world's roughest waters. This nonstop race will take approximately 300 days at sea. I need a solid boat I can rely upon even when my strength fails. My first priority is guaranteeing the hull's flotation under all conditions. This requires everything from ensuring its structural integrity to choosing the appropriate color. I am decreasing the cockpit's size and installing two more drains in preparation for the Roaring Forties. I must add more layers of fiberglass to the hull, and install a watertight bulkhead inside the bow. I also need to reorganize my plumbing and get new electric bilge pumps.

I removed *Puffin's* floorboards to access the tanks and plumbing. Somehow the heavily rusted fuel tank still held the old fuel. I discovered a huge holding tank custom-built above the keel water tank. Inside I found decades-old solidified human waste. (I needed a double scotch that night to handle this unpleasant discovery.) I could not trash it, because it was supporting the combined engine cover and companionway steps. After thoroughly cleaning it, I decided to put a stainless steel water tank inside, since I would need additional water storage for 10 months at sea.

Collision with freighters and UFOs—unidentified floating objects (and floating ice, in this race)—is one of the worst dangers offshore for a singlehander. When we built my first circumnavigator boat, we laminated 11 extra layers of fiberglass below the waterline. Perhaps that was excessive, but *Salamambo*, the boat I built for my first circumnavigation, never let me down during 60,000 nautical miles of offshore sailing. Ideally I would add three layers of a fiberglass/Kevlar combination to *Puffin's* hull, but modern materials cannot be used in this retro race, and it's out of the budget anyway.

It took two of us three days to sand off *Puffin's* remaining bottom paint, a project that was made worse by having to wear Tyvek coveralls and respirators in the middle of July. Then we stripped and sanded the deck and the complete interior. When I started grinding the inside of the bow, there was almost no fiberglass beneath the paint. I could see right through it. I like good visibility in the front of the boat, but not from the forepeak. This was all the push I needed to finalize my decision to add lamination to the entire hull. Removing the gelcoat from the topsides became our top priority.

Unfortunately I set our borrowed gelcoat peeler to the wrong peeling depth, and before I knew it I had cut far too deep into the starboard bow's fiberglass. This costly mishap caused me unspeakable frustration. I adjusted the blades to peel off most of the gelcoat without completely removing it. This would save the fiberglass underneath, but would also require an extra week of sanding to get the job done. It was a necessary evil; I could not "bleed" any further.

After three brutal weeks of work, *Puffin* was ready to head into the paint shop. I had to use the boatyard's idle summer load time, so I committed myself full time (12 to 13 hours a day, seven days a week) to hands-on work. I had never attempted such an intensive lamination project. The first problem was the considerable weight



*Puffin* was in rough shape when Kopar found her, above. The author takes a break from a brutal sanding project, below.

of the E 1708 biaxial fiberglass cloth with  $\frac{3}{4}$ -ounce mat backing. One roll (100 yards) of 50-inch-wide cloth weighs 224 pounds. How could we possibly keep this heavy material in place on a vertical topside—and even worse, on the boat's bottom—while the resin was kicking in? Finally I had the epiphany to lay the boat on her side on car tires! I got approval from the boatyard management, and procured two dozen free used tires from a local retailer. After a painstaking 1.5-hour process with the Travelift, *Puffin* lay on her starboard side supported by strategically distributed tires.

I purchased 220 yards of 50-inch-wide fiberglass cloth and 35 gallons of Sea Hawk resin. My next challenge was finding the right catalyst for the resin. I had to mix for a large volume, and the pot life of the epoxy is significantly shorter with increased mass. Eventually we got the hang of it, and we managed to finish the port side lamination within three days. The bow, keel and transom got several extra layers, and the rest of the hull two layers of E 1708 Biaxial Fiberglass cloth with the  $\frac{3}{4}$ -ounce mat backing and one layer of 7.5-oz. Plain Weave E glass. We used 15 gallons of resin.

After priming the deck and the port side, we had to eliminate the bumps caused by the uneven gel coat removal and overlapping fiberglass layers. Alexseal sent the necessary material with instructions. Their epoxy filler is user-friendly, but longboarding the hull is still an intense endeavor.

When we flipped *Puffin* onto her port side, we could see the car tires had done their job; no compressed spots were evident on the hull. We found several suspicious white spots on the starboard side, including an especially big one about amidships, roughly 2.5 feet



by 1 foot. When I sanded it, I penetrated the foam of the stringer without seeing any fiberglass. This further validated my call for reinforcing the hull.

We completed the starboard lamination within only two days, thanks to the routine we had mastered on the port side. My estimate on the fiberglass and resin was almost perfect. We needed more resin for an extra layer where my sloppy gelcoat peeling had

**When I started grinding the inside of the bow, there was almost no fiberglass beneath the paint. I could see right through it. I like good visibility in the front of the boat, but not from the forepeak. This was all the push I needed to finalize my decision to add lamination to the entire hull.**

carved up the hull. We mirrored our previous work on the port side: Alexseal high buildup primers, Alexseal filler, longboarding, and coats of primers. Our contacts at Sea Hawk and Alexseal kept us on track with their advice and timely deliveries.

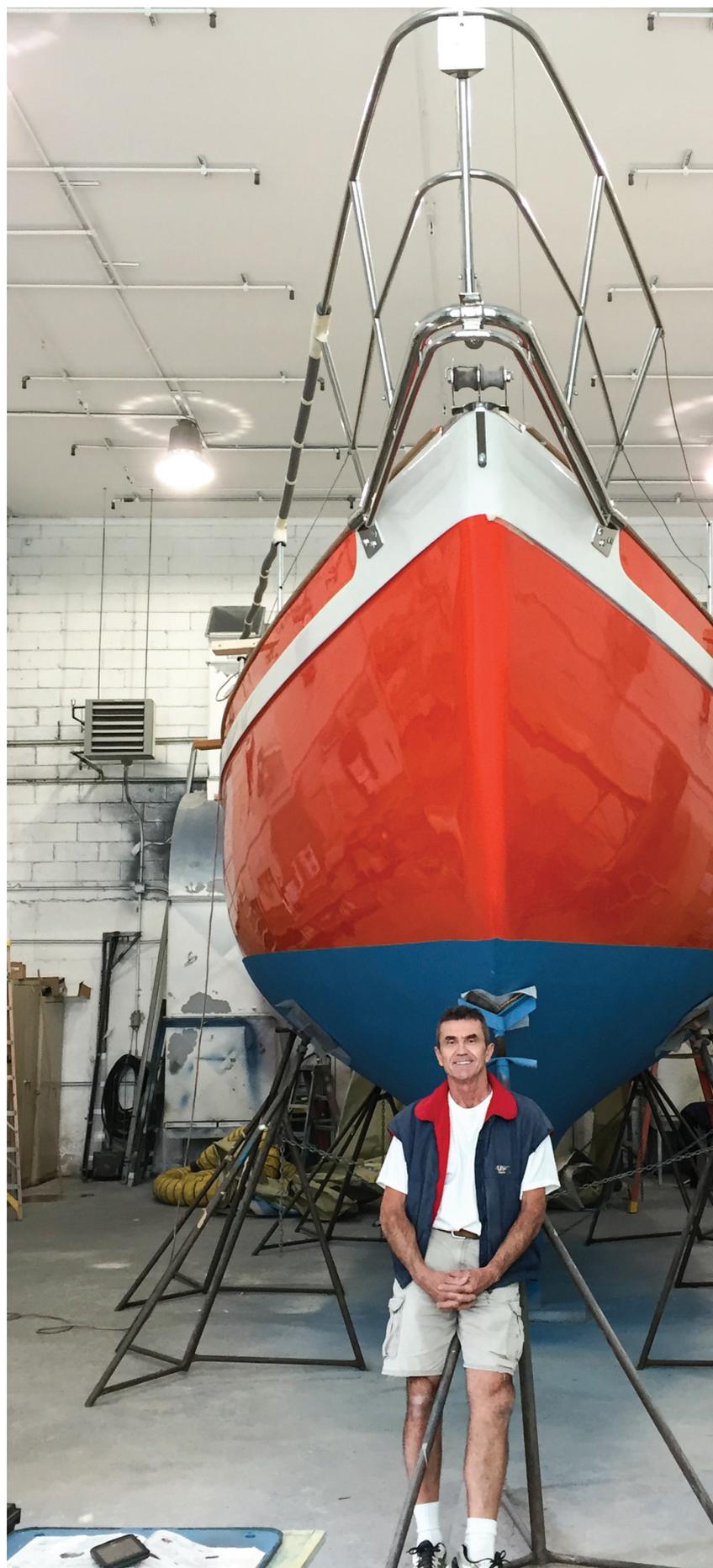
I wanted to paint the topside International Orange, mainly because I need to be noticeable in the middle of the ocean. The popular navy blue or white hull colors blend perfectly into the waves. Alexseal also sent me yellow topcoat, since the orange would not cover the gray primer properly. After two coats of yellow, we sprayed the final three coats of orange. We wrapped it in protective

paper while completing the cove stripe, bottom paint, and deck paint. On the bottom we sprayed three coats of grey Sea Hawk Tuff Stuff (epoxy primer) and one blue coat of their best ablative antifouling paint.

The new waterline will be higher due to the hull reinforcement (at least 1,000 pounds of added weight) and one year's provisioning stored inside the boat. *Puffin's* fittingly "puffinlike" belly shape made it especially difficult to eyeball the waterline. It took several hours and serious input from the boatyard staff to figure it out. Hopefully my 4-inch lift will be enough.

After we completed the hull reinforcement, our progress became much slower. Small projects like finding the right nonskid were especially tedious. I did not want some nonskid additive mixed into the paint, so I spent days researching an alternative. Finally I found KiwiGrip—a thick, creamy paint that achieves a rough texture via its unique roller. I purchased a large quantity after testing a small amount on a discarded deck hatch.

Masking the interior for painting also took longer than anticipated. The interior painting went relatively fast, although working with poor visibility in the floor-less boat caused some unintentional sloppiness. The wooden bulkheads also sucked the paint in, and we had to order more to complete the second coat.





The author smiles after hitting a major milestone in the project—a newly reinforced and brilliantly painted hull. Removing the protective paper unveiled a beautiful and perfectly painted cove stripe, upper right. The interior got a new paint job as well, right.



We reinstalled the bowsprit, lifeline stanchions, pulpit and pushpit. We used Boatlife Life Caulk for the bedding, which required two of us working above and belowdecks. I removed the front deck's largest deck hatch, which violated the race rules since it had no outside-opening levers. I had a spare Lewmar hatch, but its base frame was flanged, not the required flat design. My buddy Glenn cut it off with a table saw to avoid purchasing a new hatch (in the range of \$600). There was no way to cut the flange off completely straight, so I used butyl tape for bedding to level the gaps of the uneven base.

We reinstalled the rudder when the Travelift picked up *Puffin*, and then she finally left the shop as a handsome-looking boat. I created a wooden frame to support the shrink-wrapping, to enable work on *Puffin* to continue through the winter.

The next stage of my refit is dedicated to sailing safe and fast: the spars, sails and rigging. My first option is getting a new customized mast with two spreaders. This would improve my speed, but would be more expensive. I would need to redouble my sponsor-hunting efforts to pay for it. The cheaper alternative is reinforcing and modifying the current mast. My schedule this winter will focus on procuring the appropriate sail inventory and setting up the standing/running rigging and hardware, all of which will depend on my decision with the mast. I will need to plan around the winter weather, completing jobs like the plumbing and engine work as temperatures allow. My deadline for launching *Puffin* for her first sea trial is mid-June 2017, which feels painfully close considering all of the tasks remaining. 📍

You can follow the progress of *Puffin's* refit at [www.koparsailing.com](http://www.koparsailing.com). The Golden Globe Race has 30 registered skippers and starts in Falmouth, England, on June 16, 2018. For more on the race go to <http://goldenglobrace.com>.