

Technical Pull-Out

Q&A FOR YOUR CATALINA THAT'S BEEN FACTORY APPROVED



Catalina 470



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Beckoning: #76

One More Toy!

As previously noted in this column, *Beckoning...* (HULL # 76), journeyed to the British Virgin Islands in November of 2007 along with 70+ other boats in the Caribbean 1500 race. The overall destination, the BVI/USVI, is conducive to many water activities including scuba diving. Your author had been to the BVI/USVI many times previous but always stayed on land and dove with local scuba diving operators. This time, diving would be from *Beckoning...* and the logistics of that required a new toy...a dive compressor which would fill the scuba tanks of divers aboard the boat without having to depend on shore-based facilities.

The compressor was purchased in September of 2007 so that appropriate

work for its mounting and operation could be completed well before the boat left for the Caribbean. The decision about which compressor to buy was in the end, as are many things aboard a boat, personal preference. I chose a Coltri compressor as it was the smallest, lightest compressor available but also had the performance (a Honda 5.5hp engine) to fill an 80 cubic foot tank in about 20 minutes and do it repeatedly with a minimum of maintenance. The cost, about \$2600, was reasonable given the large amount of diving anticipated. The issue was where to store it during the trip down to Tortola and where to mount it once in the Islands so that it would be out of the way when not in use but convenient when needed. This compressor weighs 82lbs, is 14" high, 30" long and 13" wide, built on a steel tube frame and very portable. It comes in electric or gasoline powered models. The electric model was not deemed feasible since it would have generated dependency on the genset. Some other sailboat owners have done an electric installation and put the compressor in the lazarette or other spaces.

The compressor was stowed in the dinghy during the Caribbean 1500. It was lashed to the interior pad-eyes inside the dinghy and packed around the sides with lifejackets. As noted in the previous Tech article the dinghy was hung from the davits for the race but the normal falls were removed to raise the dinghy and make it more secure.

The compressor generates significant condensate from each tank fill and that must be vented to the outside. The gasoline engine requires outside installation because of the exhaust fumes and noise. Couple these issues with the necessity to have access to the compressor for ease of maintenance/attaching the tanks themselves for filling plus ease of starting and the placement of the compressor for operation limits the available installation locations. I did not want to mount the compressor on the deck forward of the traveler since that area takes the brunt of boarding seas and moving the tanks to that location would be asking for some toes to be crushed. The compressor is not sea-worthy or designed to be out in the weather. In the end, mounting the compressor off the aft port toerail was deemed the best location overall. A weather-proof cover was built to keep out the salt water and rain.

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Our esteemed Commodore, Bill Martinelli, and his companion Julie (who, BTW, kept all of us fed magnificently during their visit to *Beckoning...*) was instrumental in doing the installation. I had previously paid a visit to my welder in Annapolis and had him build brackets on the compressor frame (see photo) to attach to heavy stainless steel plates which thru-bolted to the toe rail. The only remaining issue was the vertical support.



Coltri compressor installed aboard *Beckoning...* C470 (Hull #76)

Bill Martinelli and I, under the supervision of Julie, began the installation about 3 pm at Jost Van Dyke in the BVI. The pre-machined installation of the toe-rail brackets went well and the remaining issue was the stainless steel tubing to hold the compressor up.

The photo shows the temporary straps we used to hold the compressor in place while Bill measured and cut the tubing. These

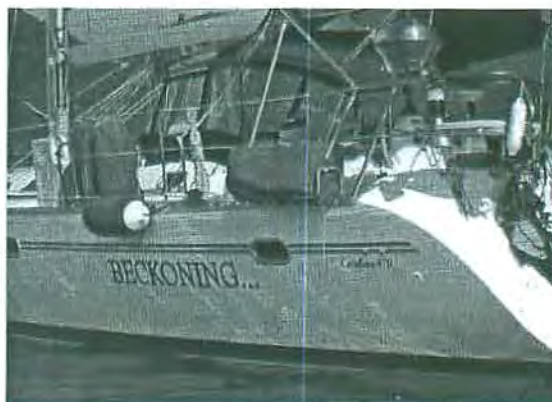
straps had been used to hold the fuel bladders in place during the Caribbean 1500 so had adequate strength for the temporary use they were put to. The cap ends for the tubing had set screws in them and these were thought to be inadequate for the rigors of being in moderate seas while trying to hold the compressor in place. As a result, Bill drilled and tapped all the tubing and cap ends to match available steel machine bolts and the entire assembly was drawn together with the bolts. The final result is an excellent triangle of steel between the toe rail, the compressor brackets and the stainless tubing.



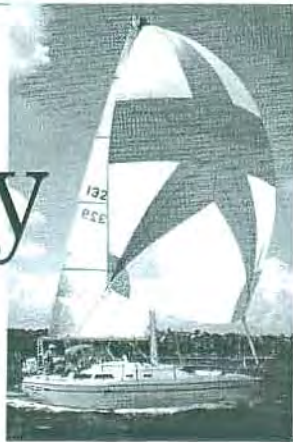
Installation of temporary straps for vertical support.

Having seen the requirement for weather-proofing the compressor I had had a Sunbrella cover made to fit over the assembly. It was lined with Dacron for further weather-resistance and then grommeted to enable it to be pulled tight around the bottom of the compressor and keep out the elements. In my 7 years of living aboard I have not seen seas come over the stern toe rails except in a Force 8 gale off the New Jersey coast in 2001 and when the boat was knocked down in 2003 by a microburst immediately after a devastating lightning strike. The benefits of installing the compressor on the port side toe rail were therefore deemed to outweigh the risks of seas inundating the compressor as long as the cover was properly lashed down.

The final result is shown below. It has been several weeks since Bill & Julie were aboard and in that time the compressor has been put to hard use. It has not moved at all since Bill tightened up the final thru-bolt. The installation has proven the design!! The compressor is easy to use but out of the way for daily operation here in the Caribbean. It will be removed for the DOCKWISE trip to Newport in May (subject of the next Tech article) as scuba diving in the Chesapeake and Maine is tough to do after a winter in the Caribbean.



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