O-rings and Whale Pumps, Perko Raw Water Strainer, and Answers!



C350 Association Technical Editor Bill Templeton

It is with heavy heart....and empty wallet … That I report the ultimate demise of the Admiral's favorite camera – reference this past Winter issue and comments on leaks. On the bright side, the Christmas list this year was quite short....one item. What I have submitted this time is three-fold.....First: The lowly o-ring and kudos to Whale Pumps. Second: A quirk discovered during winterizing the engine about Perko raw water strainers. Third: Some "in practice" successes to three infamous C350 issues as reported by Les Fontaine. **–Bill Templeton**, pbtemp6816@verizon.net

The Lowly O-ring and Kudos to Whale Pumps

The deck plate (mounted starboard side cockpit footwell) is held closed by an o-ring recessed into the lid. Like any rubber product exposed to the elements its life is limited. I replaced it once with a "match" I found at my local hardware store but this time they no longer stock any o-rings near the correct size. I googled Whale Pumps and in their on-line catalog found a "Gaiter Kit" that included the o-ring and rubber diaphragm. But, I only need the o-ring. Using their website contact form, Paul Alexander (quality engineer) responded, identified the o-ring and promised to "post" two to me that day at no charge. I wrote an article "The Companies Catalina Keeps" in the Spring of 2014 *Mainsheet* lauding customer service by Raymarine, ICOM and Garhauer.....add Whale Pumps to that list. I never expected to get free o-rings after 13 years. The "replacement" -ring I used before measured 1/8" x 3" ID x 3 1/4" OD ... I located a 5-pack on Amazon for $6 plus S&H. Noting that the address for Whale is in Ireland and fearing the ring was metric,



Whale Deck Plate



Whale Gaiter Kit

I asked for the spec for the OEM product..... Paul A. told me the o-ring is 3.53 mm x 74.61 mm. This equates to a diameter of 3" and a thickness of less than 1/8"...it makes sense now because my 1/8" replacement from the hardware store made the deck plate cover difficult to close/seal. **–Bill Templeton.** C350 #333 Makani Kai

Perko Raw Water Strainer

During winterizing of the engine on *Makani Kai* this season, I discovered an interesting quirk about the Perko raw water strainer. (As an aside, this year I discovered I could use my wet/dry shop-vac directly on the hose bib drain to pull all remaining water out of the water heater.... and reduce the amount of antifreeze I need for the potable water system) My norm has been is to pour two gallons of antifreeze directly into the (open) Perko raw water strainer strainer while my wife (in the cockpit) runs the engine. As I opened the strainer I noticed some eel grass in the basket...no problem, I set it aside to clean before I put everything back together. Pat fired up the engine and I poured my two gallons into the Perko unit.... hollering up..."is the exhaust pink yet?" and getting the answer I didn't want..."...no water coming out". Shut the engine down and discovered I left the engine seacock open thereby dumping two gallons of antifreeze on the ground. Well, I always buy extra antifreeze so closed the seacock and proceeded again.....the engine wouldn't draw the antifreeze through the strainer. My first thought was that I "smoked" the impeller by running it dry. But. wait....I use the Globe "run-dry" impeller that is supposed to last 15 minutes without water before any damage. I opened up the raw water pump and found the impeller damaged....but not to a point (no vanes missing) that it shouldn't pump. (Another aside I had let the impeller go longer than I should have before replacement thinking the "run-dry" would have a



Perko Intake Strainer

longer life....may be true...but, I'm not even going to tell you how long it had been). I carry a spare so completed a maintenance chore that I should have done anyway. Fired up the engine and STILL it did not draw antifreeze through the strainer. Checked all the hoses and the orientation of the vanes of the impeller. Checked "water patency" back to the strainer. Disconnected the water hose from the strainer and using a funnel poured antifreeze directly into the hose (bypassing the strainer) and the engine sucked that pink gold right in. So my problem was with the strainer! Thinking I'd just pour my two gallons direct via a funnel and figure it all out later...I glanced at the galley sink where I had left the strainer basket (with eel grass) and thought...NO! Got rid of the eel grass, put the basket back in the strainer...fired up the engine and began pouring antifreeze into the open strainer ... I was hard pressed to keep up with the rate the engine drew fluid in! I know a lot...mostly by the principle "... experience keeps a dear school and fools will learn by no other". So add another experience for this fool....be sure to replace that basket if you expect to draw antifreeze thru the strainer into the engine during winterizing. **–Bill Templeton.** C350 #333 Makani Kai

During winterizing of the engine on Makani Kai this season, I discovered an interesting quirk about the Perko raw water strainer.

CATALINA 350 INTERNATIONAL ASSOCIATION

(continued from previous page)

2016's "Hot" Keys' Lessons

What follows are excerpts from Les Fontaine's 2016 cruise on *Asena* (2003 C350 hull #89) from St. Petersburg, FL to the Florida Keys. Some "in practice" answers to common C350 issues. **–Bill Templeton,** pbtemp6816@verizon.net

Refrigeration, Power, Cavitation

Spending a couple of months during late summer and early fall in the Florida Keys isn't something I would recommend to anyone with an aversion to very warm – ok, very hot and humid weather. Not surprisingly, it isn't just the human machine that extreme heat and humidity impacts.

While I have been aboard for a few days when it was extremely hot, this was my first experience doing so for an extended period. There are a few things I took away from the experience that may be of benefit to other cruisers.

Refrigeration

There is great deal of forum space dedicated to the 350's refrigerator and freezer. Since relocating from the Mid-West to Florida we found that as the weather warmed, our refrigeration system performed similarly to that discussed in the forum – less than the best, especially for supporting our live aboard needs.

While some attempt to enhance the units was warranted, I was neither comfortable nor willing to completely redo the boxes as some have done, but did make a couple of the simpler, easy suggestions offered in the forum, along with a couple of my own inventions:

In both boxes, the gap found below the counter top was sealed, and a ½" removable insulation was cut and placed inside the boxes along their exterior walls. In the freezer, a removable insulated divider was fitted that reduced the stern end of the box by 6 or so inches, and a deck mat was used as a liner to maintain air flow around bagged ice. In the refrigerator, access to the upper portion (through the front/vertical door) was blocked with a sheet of insulation to impede air loss when the lower door was opened, and a deck mat was used to line the lower box bottom to assure ice melt would drain. And just to see what would happen, the air flow of the refrigerator fan was reversed to expel into the space created by the divider in the freezer box.

This modest attempt to enhance the units has worked for us. Of course, most of the months we lived aboard each year do not include the extremely warm ones of summer. When faced with dealing with summer's extreme heat, the unit ran constantly and its efficiency really suffered, *but it did not fail*.

Items fully in the freezer condenser box remained frozen – nearly as well as they had in the past. Both sections of the refrigerator held acceptable, but at lesser temperatures…none of the perishables in the upper section spoiled and beverages in lower section were cold. The 10 to 15 pounds of ice normally kept in the freezer box did however tell another story. We could usually count on keeping ice for the better part of a couple of weeks with minimal melting. During the trip, until the weather broke, a bag of ice only lasted a couple of days.

Even with its obvious shortcomings, the 350's refrigeration works well enough, even in extreme conditions (with a few tweaks and a 10# bag of ice every other day), to afford living comfortably on the hook or mooring.

Power

As great as refrigeration is to have, it drains the batteries. Even with a pair of 140 watt solar panels, our 450 amp battery bank was hitting 12 amps (less than 50%) by the third day at mooring. Of the boats around us, solar was common, as was some type of generator. Most mornings the hum of a portable unit topping off batteries was the norm.

Solar panels were added before my first Keys adventure in 2014. During that trip, the summer's extreme weather had already broken and the panels were, for the most part, sufficient for *Asena's* power requirements, whether at anchor or moored. This trip, while the amount of daylight and cloud cover was materially the same, the batteries needed to be charged by the third day, if not sooner.

Lucky for me, when we bought *Asena*, the original owner had installed an inboard diesel generator. In the seven plus years we've owner her, we have never run it overnight. Carbon monoxide, even though we have a couple of sensors, intimidated me enough that I would not operate the generator without someone awake to hear the alarm.

In the past, when amps got low, I could run the generator for about four hours, and all was well. Not this trip. Four hours of charging didn't drop the charger's gage at all…like it was stuck at 30 amps. It seemed obvious that the heat was adversely impacting battery charging. I tried opening the battery compartment and running a fan while charging. No observable benefit. Next, I again left the battery compartment open and ran the air conditioner, which seemed to do the trick.

It took all night with the air on to fully charge/equalize the batteries. Actually, it probably didn't take all night, but I didn't get out of bed to find out, and I am content not knowing.

What I do know now: (1) in extreme heat, cooled air facilitates battery charging (2) my fear of carbon dioxide from a properly installed generator was unfounded, and (3) a full night's sleep under air was good for recharging me as well.

Cavitation

Asena has the original prop it came with in 2003. There have been a couple of times when cavitation has been noticeable, but not to the point I have felt the need to invest in something else.

About five weeks into the trip, I began to hear that peculiar noise cavitation makes. Over the remainder of the trip the volume increased to the point it had me imagining that maybe the transmission or perhaps the prop shaft log was about to go.

As soon as I got back to the marina from my previous Keys trip, I had the bottom cleaned. The bottom was pretty well loaded with growth, as would be expected after a couple of months. While it was expected, I really didn't know for certain until the diver confirmed.

This trip the plan was to again have the bottom cleaned as soon as we returned. Unlike the prior trip, the bottom cleaning that should have been done just before leaving didn't get done. At the point when the cavitation noise started, it had already been over two months since the last cleaning.

Again the diver took longer than usual to clean, and again confirmed that the bottom was loaded with growth. I specifically asked about the prop, and was informed that it too had fairly heavy growth, which was what I had been hoping to hear.

The next day, when we left the dock with a clean bottom to top the fuel off, we enjoyed a very quite ride. The growth on the prop wasn't noticeably impacting performance, but it sure was noisy. I was thrilled that normal maintenance – and not an expensive repair – resolved this. **–Les Fontaine,** *Asena* 2003 C350 hull #89