Catalina 350



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This issue contains an article from Mike Heller that may be the most useful one that was ever written for the magazine.

Mike is a computer geek who readily admits that he has "no particular expertise in the field of boat maintenance". However, he does take a deep interest in maintaining his own boat and in sharing his expertise to that end with others. So he has created a link on the C350 website that is really fascinating. He has grouped maintenance requirements together by interval times and then created hyperlinks to manuals and to manufacturer's websites. Mike explains the entire thing in the article so I won't go any further with what's there. However, I will tell you that I can't imagine that there is anything else in terms of information that you will ever need to maintain your 350.

The scary part is that I thought I was doing a real good job until Mike's website highlighted for me the several procedures that I was missing. He's created a lot of extra work for me but he has also helped me to ensure that I'm not going to have a failure for not having kept up with required maintenance. I know that many C350 owners are aware of this website and have used it extensively. But for those who haven't, it's an extremely useful tool that I know you will enjoy.

Also in this issue is a great article from Jim Gienko. Jim points out the bad things that saltwater can do to your engine and presents a very useful procedure on what to do about it. Although I hate to even think about it, the procedure is also a great way to winterize your engine when the time comes later this year.

Finally, I've never been really happy with the little bit of binding that is created by the routing of the furling line across the top of the deck, Also, whereas I know I am anal about keeping my boat clean, I'm sure many of you are just as irritated as I am by the dirt line on the deck that is caused by the genoa furling line laying on it. Tim Ryan was not happy with these circumstances either so he devised a rerouting of the line along the starboard stanchions. As he says – simple to do and a good idea. *–Skip Penizotto*

C350 Maintenance Website

When we purchased our Catalina 350 in January, 2004 I was determined to keep her maintained per the manuals. There were systems I never had on a boat before, and this was my first diesel engine. So I went through the manuals and started highlighting all the maintenance requirements. Then I copied them into a spreadsheet to organize them better. By going through this process I learned a lot about the boat and became familiar with the various systems and components.

Once I had this maintenance list together I could easily see everything that had to be done without searching through the manuals every time. That was great, but as a computer hobbyist (geek) I couldn't just settle for a simple list. So I scanned the manuals into the computer, and added hyperlinks back to the manuals and manufacturer websites so all the information available would be just a click away. The next obvious step was to publish the creation for other C350 owners to use, which I did in March 2005. The link to the latest version is on the C350IA home page at www.Catalina350.net.

More recently I converted the list into a database that can be sorted and searched. It also makes it easier to update. The website is getting a few hundred visits per month at the time of this writing which tells me that people must be getting something out of it. Below are just a few points I wanted to make for edification.

- I have no particular expertise in the field of boat maintenance. The website is just an attempt to organize things. The maintenance requirements are copied straight from the manuals to keep them official. Any deviations or additions are noted on the Revision History page.
- Many requirements calling for "as-needed", "frequently", and other such wording are grouped into the "Periodic" interval for simplification, but the actual wording of the requirement is retained so you always know exactly what the manual says. The interval and system categories are defined on the home page of the website.
- The maintenance list links back to only the relevant pages in the manuals so the information you need loads into your browser quicker, rather than loading the whole PDF document. However you can still view the entire manual if you want by clicking the link for that document on the Reference page of the website. The entire C350 Owner's Manual, M35B Operator's Manual, Service Manual, Parts List and Charleston Spar Hand Book is on the website in PDF format.
- The Reference page lists all the links to manufacturer websites. I tried to include the link to the page that details the particular system or component. This type of information gets moved quite often though, so let me know if you find any broken links.
- I took a lot of photos of the various components on the boat because a picture can tell a thousand words. The photos that aren't blurry are posted on the website and linked to the applicable maintenance requirement. The Reference page has a listing of all the photos.
- Part numbers and other specifications are also listed for each maintenance item as applicable. That's a question that comes up a lot in the newsgroups.
- As a bonus there is a step-by-step winterization procedure on the website involving the use of anti-freeze. Other methods of winterizing the boat have been discussed, like blowing the water out with compressed air or using vodka. The anti-freeze procedure on the website has worked just fine for me over the past four years with the boat staying in the water.

I sometimes joke that the purpose of the maintenance website is to remind me of all the maintenance I haven't done yet. While I do get around to performing most of the maintenance, there are some things I may never do - like "Tighten all bolts and nuts to proper torque" on the engine. I figure the bolt torque is fine if it's still painted in place. And some items in the periodic category only get done maybe once or twice a year. So don't feel bad if I you haven't done all the maintenance on time every time because you are not alone.

Hope that helps! Constructive comments, corrections and contributions are always welcome. You can email them to mike@hellersolutions.com. *–Mike Heller,* Bali Hai, *Hull #143*

Installing A Fresh Water Engine Flush System

Note: this article is intended for catalina 350 owners with the universal 35b engine and a closed cooling system.

Parts List:

- 1 hose shut off valve (home supply or garden store - under $5)
- 1 piece of clear plastic hose 6 feet long, ¾ inch ID
- ($5 to $10 at any hardware store - cheaper than at a marine supply store))
- 1 ¾ inch flushing "T" with a cap (auto parts store - about $7)
- 2 stainless steel hose clamps (marine supply store - about $3 each)
- 1 or 2 five gallon buckets (home supply store)
- 1 female garden hose fitting (home supply store - about $3)
- 1 garden house

Why install a fresh water flush on your C350? We all know why it is important to winterize the engine, but why is it important to get the salt water out of the cooling system? Mainly because salt water is corrosive and causes premature death to many engine parts from water impellers to heat exchangers.

Besides being an easy and inexpensive upgrade, it can be used by almost every C350 owner - saltwater sailors can use it to flush the salt water out of the cooling system and northern fresh water sailors can use it to winterize their engine.

I had past experience with this with my previous boat that I owned for 22 years. I purchased it new and used it for 17 years in the fresh water of the Great Lakes. For the following 5 years I used it in south Florida. The engine hours totaled about 1300 when I sold the boat but due to the extended fresh water usage, during the entire time that I owned it I only replaced my raw water impeller once, at 600 hours. After I removed it, it looked so new that I kept it for a spare. I never replaced the heat exchanger. The new owner took the boat to Panama and in my last discussion with him he indicated that he still had not replaced either the raw water impeller nor the heat exchanger.

Let's skip to the chase and get to the installation. Then we'll discuss how it's used.

As you will note in the parts list, you will need a flushing "T" which can be purchased at any auto parts store. My boat has a ¾ engine intake water hose and I assume all C350 have the same size. (It is obviously essential that you have the right size "T"). I bought the "T" at a NAPA store. You will also need two stainless steel hose clamps, which can be purchased at any quality marine supply store.

On the C350, the engine raw water intake thruhull and water strainer are under the aft berth by the propeller shaft. To install the flushing "T" you simply cut your water intake hose at a convenient place between the water intake thruhull and the water strainer (make sure you close the thru hull first!). Insert the flushing "T" between the ends of the cut hose and secure them with good quality stainless steel hose clamps. (the "T" ends will not be long enough to use two clamps on for each joint).

Install the female garden hose fitting on one end of the 6' clear plastic hose.

Install the hose shutoff valve on the end of the garden hose that is attached to your house water supply.

The following is the step by step procedure for flushing the engine:

1. Close the raw water intake thru hull.
2. Remove the flushing "T" cap.
3. Attach the 6 ft. clear hose to the flushing "T", using the end of the hose with the female hose fitting attached.(It's important that the hose be clear so that you can see the water running through it)
4. Place the opposite end of the hose in the 5 gallon bucket (which you had previously set in the aft cabin next to the berth.)
5. Place the end of the garden hose (which is attached to a house water source) into the bucket and fill the bucket ½ full of water.
6. Start your engine.

As the engine starts you should see the water being sucked into the hose. If you can't see the water going through the hose, try to create some bubbles in the water by shutting off the hose with the shutoff valve and inducing some air into the water with your hand. (While the inflow of water is cut off, the lowering level of water in the bucket will ensure that water is flowing into the engine). The shutoff valve is necessary to ensure that you have an ample water supply in the bucket while your engine is running so the valve is used as a metering device to ensure both that there is always enough water in the bucket and that there is not too much to create an overflow into your aft compartment.

Note: if you increase the engine RPM it will suck more water so you'll need to open the regulating valve a little











more. Conversely, if the engine RPM is decreased it will suck less water and if you don't slow the water flow down from the hose, the bucket will overflow.

Let the engine run for about 15 minutes while keeping an eye on the water level in the bucket. You should also have someone monitoring the engine temperature gauge. As long as your engine stays cool all is well.

Now for the piece d'resistance! Just before you shut down the engine, fill the bucket to the top, then turn the garden hose off and add a little non-toxic antifreeze to the remaining water in the bucket. As the last of the water is being sucked into the engine from the bucket, shut the engine down. Why add the antifreeze at the end? Because antifreeze has lubricants and corrosion inhibitors that protect your cooling system (just like in your car).

Always shut down while there still is water in the bucket to ensure that you have left fresh water throughout your cooling system.

Viola, you no longer have salt water in your cooling system but a weak mixture of fresh water and antifreeze that contains both water pump lubricants and anti corrosion additives. (Note: definitely no more than a 50/50 antifreeze to water mix). This is a much better way to store your engine between start-ups than with salt water throughout the cooling system.

Remove the hose and install the cap back on the flushing "T", clean up and you're done. (Don't forget to reopen the thruhull before the time you start your engine!)

Once you get familiar with this procedure and get used to doing it, it should only take about 30-45 minutes. A small amount of time for a terrific benefit.

For northern boaters, you can use this same system to winterize your engine. Simply use two 5 gallon buckets, each filled with a 50/50 mix of antifreeze and fresh water (generally good for -35 degrees below zero Fahrenheit but follow the instructions on the brand of antifreeze you use). Then as the engine runs sucking in the antifreeze mixture from bucket #1, pour the contents of bucket #2 into bucket #1 . Just before the last of the antifreeze mix is sucked from the bucket, shut the engine down and winterizing is complete! Disconnect the hose from the flushing "T", replace the cap, and you're finished! Clean up, get a cup of hot chocolate or a brewski, sit by the fire and wait for the first snow flakes to fall.

Once again, this method only works for engines that have closed cooling systems and use a heat exchanger to help cool the engine. If your engine is raw water cooled (no heat exchanger and you do not continuously keep antifreeze in your engine, this method should not be used.)

Last, and most importantly, is to never, never, ever, under any circumstances attach a garden hose directly to the flushing "T" and turn on the water to force feed your engine. That little mistake could cost you about ten grand for a new engine and the labor to install it. Why? Because your engine SUCKS the water it needs, and if you force feed the engine water under pressure at a faster rate than it would suck the water up (or turn on the hose without starting the engine for a minute or so) the excess simply fills your heat exchanger and eventually finds its way past the mixing elbows, into the exhaust manifold and then into the cylinders creating. If this were to occur, you can kiss your engine goodbye and be ready to part with that ten grand. *–Jim Gienko,* Kai Lani, *C350 Hull #103*

Re-route your Headsail Furling Line

Does it feel like there is too much friction in your headsail furling system? Would you like to make singlehanding even easier? Why not install a more traditional headsail furling system using stanchion-mounted pulleys ending with a turning block and a cam cleat.

I would like to give credit to my good friend Stan Reed, owner of C350 *Mallomar*, who first showed me this changeover. First, you need to decide upon a supplier of rigging gear. I chose Garhauer because it was the best price and high quality. I also received personal service from C350 hull #1 owner, Bill Felgenhauer, who is also the owner of Garhauer Industries. He sold me three stanchion-mounted double pulleys at the Annapolis boat show, and then built a turning block for me with a cam cleat that could be mounted to the starboard stern pushpit rail.

I determined that the original first two blocks installed by the factory could be used right from the furling drum. Then I installed three stanchion-mounted blocks as low as possible on the stanchions, going aft on the starboard side. If desired, these blocks can be oriented to run the furling line on the outside of the stanchions. I used one fingerwidth as the gap between the stanchion hoop and the new block for consistent and fair running of the line.

I then mounted the turning block with the cam cleat on the starboard stern



Photo showing deck after furler line has been removed



Photo showing factory blocks #1 & #2



Photo showing three stantion pulleys



Photo showing close view of stantion pulley



Photo showing sternrail-mounted turning block and cam cleat



Photo showing close view of turning block and cam cleat

pushpit rail. Next, I removed the furling line from the existing position and re-routed it through my newly installed blocks. I coiled the extra line and hung it from the stern rail. I have found that the cam cleat can hold the line under pressure. In case of a real blow, the line can also be secured to the stern cleat that is just below the turning block. Also, you can always use the winch which is right there if needed.

It's an easy job that only takes a few minutes to complete and it makes furling the genny a lot easier. Who needs all that friction? –*Tim Ryan,* Nora Clare, *Hull # 332*



Photo showing furling line coiled on rail