Tech Tips #9

By "The Old Salt"

This column is a forum for sharing the vast range of practical experience accumulated by our membership and not just my favorite boat maintenance topics. It is intended to be the place where you, the reader, can ask technical questions and either obtain direct answers in this column or direction to appropriate reference material. Normally at this point I list the past topics and transition into the next planned item. But this time we'll depart from the original plan and, by popular request, review some of the practical tasks that should be part of your winter lay-up routine. As we normally do, I'll focus on the electrical systems, with a little divergence here and there for other interesting tidbits of information.

For my money the most important electrical lay-up task is the winter maintenance of the batteries. Well cared for, your batteries should last you ten or more years, but that's dependent on many variables such as charging rate, load, depth of discharge, etc. Obviously these are not of major concern if the boat is high and dry on-the-hard. What is important is to remember that even good lead –acid batteries will loose some of their charge over the winter. The amount of discharge will depend on their state of charge when they were removed, and their general condition and age.

For starters the batteries should be taken off the boat, cleaned, topped off with distilled water, and inspected for physical condition. A common failure for run-of-the-mill batteries is separation of the top from the bottom of the casing. Although the separation isn't obvious, a tell-tail sign is the presence of electrolyte just below the top of the battery, and no apparent moisture on the top. If you have this problem you probably have a small pool of battery acid in the bottom of the battery box and low levels of electrolyte in one or more cells. If the battery is still under warranty get rid of it. You don't need the kind of problems that a leaking battery can cause, especially if it is getting into your salt-water bilge.

Even if they were fully charged (@ 1.275 pH) when you took them off the boat, you need to put them on a charger and verify that your boat's system is, in fact, fully restoring the energy in the batteries. Topping off their charge before setting them in the barn for the next few months will help when you re-commission in the spring. Personally, I don't like the idea of trickle charging because most chargers are not designed for it. Using a regular charger to trickle charge over a long period of time will overcharge the battery, boil off the electrolyte, and damage the battery. A really good, high end charger that's designed for trickle charging will do the job correctly, but most of us don't have one of those hanging around the garage. It is a good idea to put the batteries back on a charger after about three months of inactivity just to top them off, but don't leave them on the charger.

With the batteries out of the battery box you also have a good opportunity to clean it up and check out how well fastened it is. A rotten base or acid eaten, corroded fastenings won't hold 100 lbs of batteries in place very well. And the worst part is that things like this don't break loose until you are stressing things. Then when things go wrong they have a tendency to compound rapidly. You don't need this kind of excitement ….so check the box and ensure that it won't come adrift too easily.

When you disconnect the drive belt from the alternator, water pump and crankshaft pulley, grab the pulley on the front of the alternator and give it a spin. It should rotate freely with just a little drag from the commutator brushes. It shouldn't make any bearing noise either, nor have any play, sideways or axially. While you are there, spin the water pump and see if there are any unusual sounds or mechanical play in the bearings that would indicate impending failure.

While you are at it remember to change the antifreeze, oil and transmission fluids to get the acids and combustion by-products out of the engine block and off the bearing surfaces. Squirting oil into the intake, a practice called fogging, while cranking the engine over (but not starting it) is also a good idea as it lubricates the cylinders and helps to prevent internal, upper cylinder, corrosion. After all this is done seal off the intake and exhaust ports to keep the moist winter air from getting into the engine. This is also the best time to check all the hoses and electrical connections around the engine so you know what is facing you in the spring, or can be added to the winter work list.

Fogging the engine is a good way to keep corrosion at bay. The engine isn't the only thing that will corrode over the winter. In addition to inspecting the wiring around the engine, take a look at the rest of the boat. Now is a good time to put some corrosion preventive compound on the electrical bus bars, switches and other electrical connections. WD-40 is a good product for displacing moisture in connectors. Kerosene (K1) also works quite well. It also is great for cleaning up your rusty boat tools and soaking paint and varnish brushes between uses.

Other lay-up chores should include inspection of stuffing boxes, greasing seacocks, and inspecting and lubricating the steering gear. Good luck and have a great winter season