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Creating a Haul-Out Game Plan (Photos, Checklist)

Hauling a boat for bottom cleaning and painting seems like a simple and routine procedure. Planned carefully, however, this regular ritual provides an opportunity for critical inspections and service that are not possible at any other time. Knowing what to do before, during and after the haul out will greatly improve your preventive maintenance.

BEFORE THE HAUL OUT

Most boats get underway to move to the hauling yard, and that provides a perfect opportunity for a mechanical test run. Take the time to get out in some open water where you can safely run at WOT. Once the engines have warmed up, take them to maximum rpm for about 20 minutes.

Begin by recording the maximum rpm and comparing it to the rated engine rpm. If you cannot reach the rated maximum, then you have at least two problems, and maybe a third.

First, the inability to reach the rated rpm reduces the maximum available horsepower for emergencies. Non-engine-related causes include fouling on the prop or on the hull, having an oversized prop, or having bearing or alignment problems. By identifying the situation before you haul, you can inspect for these issues while the boat is out of the water. If none of those problems is found, then you will have to look into mechanical causes, such as fuel or air restrictions, or injector, lift pump or injection pump issues.

The second problem concerns resale: If you try to sell your boat and it cannot reach WOT, then a red flag will go up at the time of survey.

The third problem applies to engines still under warranty. Failure to achieve the rated rpm can void your engine warranty.

Performing the full-throttle test run will also give you a stress test for your cooling system. Its temperature will likely increase, but should level off before overheating. If the temperature continues to climb, then you will have to back off and let the engine cool down. By identifying the problem prior to hauling, you can eliminate some of the simpler possibilities, such as a fouled strainer on the outside of the thru-hull or an obstructed seacock, before spending time or money on the engine.

Also examine the shaft seal while underway. For a conventional stuffing box, the bronze housing temperature should not exceed 130 degrees Fahrenheit and should be no more than 20 degrees above the seawater temperature. For dripless seals, if they are no longer dripless, then service is required.

Once you're back at the dock, closely inspect the shaft-seal hose for signs of degradation. With the engine running, remove the injection hose from each shaft seal and confirm that you have a healthy stream of water. Shut the engine down, and inspect the hose and attachment nipple for any buildup of deposits that would restrict flow.

IMMEDIATELY AFTER THE HAUL

Not all of us can take the time to see the boat come out of the water, but if you can be there, pay attention to two critical areas.

Immediately after pressure washing, the bottom will be clean and wet. Before the bottom dries, take advantage of the shiny, wet surface to look for blisters. Look along the hull (not from the side) so that the light and the contrast will more readily reveal any developing blisters. If you do see blisters, then ask the yard to check the bottom with a moisture meter once it dries.

After looking for blisters, hang around a little while until the bottom paint starts to dry. Once most of the water has evaporated from the surface, look for any areas that remain wet. Circle them with some chalk or tape so that you can return for a closer look once the bottom dries.

These areas should be checked with a moisture meter and sounded out with a plastic mallet by a surveyor or a skilled boatyard worker. You might need to sand off the bottom paint and gelcoat so that the source of moisture can be identified.

BOTTOM PAINT

Once you have solved any moisture-related problems, turn your attention to the bottom paint.

Hard paints that build up and start to flake off should be removed by soda blasting. If you are going that far, now would be the time to apply an epoxy barrier coat. The barrier coat will protect the bottom from future blisters and will enhance the value of your boat for resale.

If you have an ablative paint, then build up all thin spots with three coats of paint before painting the entire bottom. (See sidebar about bottom paint.)

SACRIFICIAL ANODES

Note the remaining amounts of sacrificial anodes (commonly called zincs). Ideally, they will be about two-thirds gone.

While most of us grew up using zincs for all boats, we now have more options. Zincs work well in salt water but have diminished effectiveness in brackish water and no value in fresh water. If you have zincs and they look crusty and discolored, but have not lost much metal, then they probably are not serving their purpose because of low salinity. Aluminum anodes work well in salt, brackish and fresh water, and they contain fewer environmentally harmful trace metals.

If you go with aluminum anodes and keep your boat in a marina, then you run the risk of your boat becoming sacrificial to nearby boats using zinc. For this reason, and for a number of other reasons, boats that stay plugged in at marinas should have a galvanic isolator.

Whichever metal you choose, all the underwater anodes must be the same. You can, however, have aluminum anodes below the waterline and zinc anodes inside your engine.

STABILIZERS

Active fin stabilizers require seal replacement at prescribed intervals based on hours of use. Before scheduling the haul out, check your manual to see if you are due for service. You will want to notify the yard in advance to be sure it has the parts and personnel available while you are on the hard.

Failure to service the seals allows seawater into the lubricated housing, damaging the shaft and creating an expensive repair.

UNDERWATER METALS

Once you have addressed the condition of the hull below the waterline, turn your attention to the underwater metals, starting with thru-hulls.

If you have bronze (as opposed to the reinforced polymer Marelon), then sand off the bottom paint from two or three thru-hulls, scuff up the metal and look closely at the color. Healthy bronze has a distinct, golden hue.

Pink splotches or speckles indicate a degradation known as dezincification, which is a weakening of the alloy due to a breakdown in the composition. This condition develops because of inadequate sacrificial anodes, poor-quality hardware or inferior bonding-wire connections. If you are seeing pink, then you are seeing evidence of galvanic corrosion. You will need to identify the cause, and the fiting itself should be replaced.

If any of the underwater fittings show signs of pitting or erosion of the metal, then you probably have a stray current leak in the DC wiring. Stray current corrosion can aggressively attack and destroy underwater metals and must be addressed.

If you see halos (large areas of distorted bottom paint color and uneven fouling) around any underwater hardware, then you might have too many sacrificial anodes or a problem with AC shore power stray current. A marine electrician with a silver chloride half-cell and a voltmeter can check the effectiveness of your sacrificial anodes, the integrity of your bonding system and the presence of stray current.

Count the number of thru-hulls at or below the waterline, and account for them inside the boat. You might be surprised to find that there are seven thru-hulls, but you only know about six seacocks. You'll want to find the one buried in a locker somewhere that you didn't know existed.

Open and close each seacock, making sure it can be manipulated with your bare hand. If any are too stiff or frozen, then tackle the problem while the boat is on land. You might be able to spray inside the valve with a product like PB B'laster or Kroil and gradually get it moving again.

Exercise all seacocks at least three times a year to keep them moving freely.

RUNNING GEAR

Let's begin at the tail end of the prop shaft. You will find two nuts there: a thin one and a thick one. The thin one should be against the propeller, and the thick one should be abaft the thin one. If they are reversed (thick one against the prop), then the installation is weaker. Now would be a good time to remove them and correct the problem.

The propeller should have the same golden hue as the thru-hulls. Pink splotches indicate weakening due to corrosion. You should be able to rotate the propeller with one hand; if you can't, then you might have an alignment problem or a bearing issue. Also check the prop for dents and dings. If they are obvious, then the prop should be removed and sent to a prop shop.

If the prop looks fine and rotates smoothly, then check for consistency by holding or clamping an extendable mirror or wand to a strut or rudder so that the tip barely grazes one edge of one blade. Next, rotate the prop and see if it clears by the same amount of space. Repeat for each blade. Move the wand so that it repeats the test closer to the middle of each blade, and then repeat a final time closer to the hub. If you find variations of one-eighth of an inch or more, then consider having the props balanced and scanned.

While you're around the prop, measure the distance from the forward end of the hub to the after end of the rubber-sleeved stern bearing. This distance should be no greater than the diameter of the shaft (if you have a 2-inch shaft, then the space between the hub and the bearing should not exceed 2 inches). Distances greater than this amount increase the likelihood of shaft failure.

The bearings need close inspection. If you see any signs of dryness, cracking or breaking down of the rubber, then the bearing must be replaced. Put on a pair of gloves and pull the prop from side to side. If you can feel any play between the shaft and the bearing (a soft bump), then the bearing has excessive play and should come out.

ABOVE THE WATERLINE

As we shift our attention above the boot stripe, two areas need our attention: gelcoat and core materials.

If your boat has not been painted (with Awlgrip, Imron or Alexseal, for example), then the gelcoat must be protected. As gelcoat ages from wear, ultraviolet exposure and polishing, it becomes increasingly porous. This porosity invites more dirt and exposure, and the degradation gradually accelerates. In most areas, annual application of a wax or sealant will be sufficient. In southern climates, applications twice a year or more might be needed. All exposed, smooth gelcoat areas on the hull, deck and cabin should be waxed or sealed.

Faded gelcoat will likely need some compounding, but keep it to a minimum. Compounding can be thought of as fine sanding, and each application removes more gelcoat. Continued compounding will eventually wear away the gelcoat, exposing the underlying fiberglass. At that point, you will need a paint job.

Protecting the core materials in your hull and deck should be a high priority. Once moisture finds its way into the core, you have a resale problem. The longer it goes unnoticed, the higher the repair cost.

Early detection requires a moisture meter. At a minimum, I recommend checking the hull, deck and cabin structures with a meter once every three years. With early detection, you can find and stop the moisture at the point of entry before it affects a larger area.

In most cases, when there is a problem, hardware has loosened or the sealant has dried out. Sealants do not have an unlimited service life; usually, the material starts to break down after about 10 years. By checking with a moisture meter, you might learn that the ladder to the flybridge has been letting water into the cockpit core through the base fasteners. And by addressing the problem early, you can limit the affected area and avoid cutting out deck panels and replacing core.

Put your boat on a re-bedding plan, tackling a different area each season. Balsa-cored structures require a higher level of diligence, as balsa is the only core material that will decompose with continued exposure to moisture.

FLOATING AGAIN

Before leaving the hauling area, check all seacocks for leaks. Check the shaft seal as well. If you have a dripless seal with a bellows hose, then compress the bellows to release any air in the tube.

Once you are floating again, repeat the WOT trial run. With clean running gear, clean seacock intakes and a clean bottom, you have a repeatable baseline. Document your rpm, speed, load, coolant temperature and oil pressure for future reference.

If the engine overheated before the haul out and overheats again now, then you know that the intake strainer and thru-hull are not the problem. If you still cannot reach the rated maximum rpm, you also know that a fouled prop or dirty bottom are not the problem.

With your checklist complete and fresh bottom paint and anodes, you will have made the most of this annual ritual. The game plan helps preserve the value of your boat and sets you up well for another season on the water, or for your next cruising adventure.

Click here to download our Haul-Out Checklist.

This article originally appeared in the January/February 2020 issue of PassageMaker Magazine.