

Inspecting your Rig

Regardless of whether your boat is stored for winter with its mast up or down, a full inspection of your rig is essential to ensuring a safe sailing season. I certainly favor storing the mast out of the boat as it prevents water ingress through the mast that can cause damage from freezing, reduces the rig loads, prevents point-loading the hull at the pad locations, and significantly reduces the chance of capsizing the boat on the hard. It also facilitates the rig inspection. If the rig is stored in the boat, an annual trip up the mast is required for a full inspection. This should only be done however by persons familiar with the safety precautions for working aloft. If you and your assistant(s) are not fully familiar with these precautions and/or do not have suitable safety equipment, please engage a professional rigger to undertake the portion of the work aloft.

Let's start with the mast. I will focus here on aluminum masts as they are the most common. The mast should first be washed to remove dirt and other contaminants. While you are at this, carefully examine the mast for any scratches and/or corrosion. This is especially important on a painted mast where the paint can trap moisture and create an ideal environment for corrosion. Any bubbling or lifting paint is likely associated with corrosion. On an anodized or bare aluminum mast, the aluminum faces will self-heal through the formation of aluminum oxide as long as the area is directly exposed to the air, but the use of a quality aluminum polish will add further protection, especially in areas with salt or industrial contaminants. On a painted mast, the lifting paint should be removed and all traces of corrosion removed with a stiff brush or fine sandpaper. The affected areas should be acid-washed, coated with zinc chromate primer and repainted. Specific instructions for preparing and painting aluminum surfaces can be found online.

While at the mast, inspect all welds for cracks, and have any cracking inspected by an expert and repaired before re-stepping the mast.

A common area for corrosion is at the location of stainless fasteners, as the stainless and aluminum are well separated on the galvanic series, rendering the aluminum as the least noble metal susceptible to galvanic corrosion. Stainless fasteners should always be installed in aluminum with thread locking compound, Tef-gel or a plastic sleeve to create a barrier between the dissimilar metals.

While on the subject of fasteners, every screw and bolt in the mast should be inspected and tightened if required. If tightening is required, remove the fastener and apply thread locking compound before reassembly. Where the threads are deteriorated or the hole elongated, re-drill and tap as required for the next sized fastener to ensure a good attachment and galvanic isolation.

Spreaders should be inspected for wear and fit. Pay special attention to the pins at the spreader roots and the outboard spreader ends. Pins should fit snugly and loose pins should be addressed – the loads at the spreader roots, especially on swept-spreader rigs are very large. Spreader ends should be smooth, and retain the shroud so that it cannot come unseated. Seizing wire is often used for this purpose, and should be renewed annually if used. The application of chafe protection on the spreader ends is essential to protect your sails, but ensure that it is applied so that water can drain easily and not trap the rigging components beneath it in a corrosive water bath. The chafe protection should be removed and renewed annually to allow a full inspection of the fittings underneath. While we are at the spreaders, ensure that they are correctly installed – they should be installed so that they bisect the

angle between the shrouds above and below the spreader. This will yield an upward cant to the spreaders. Also ensure that they are even side to side.

Standing rigging should be inspected for kinks, broken strands or any sign of corrosion. The lower fittings are particularly susceptible to corrosion as the water is trapped there. Inspect all swaged fittings for cracking or pitting – the cold forming process used in swaging embrittles the metal and introduces micro-cracking that can over time result in failure. Periodic dye-testing is a very good idea for swaged fittings, as it is for the cold headed ends of rod rigging as this will increase the ability to see small cracks and pitting. Turnbuckle threads should be inspected for galling, and tested to ensure that the threads operate smoothly. Application of a good marine grease to the threads is essential to protecting the threads. Turnbuckle threads should be locked with ring pins, cotter pins or seizing wire, and protected with rigging tape, again ensuring that water is free to drain. Clevis pins at the chainplates however should be fitted with properly installed cotter pins, NOT ring pins. Ring pins are simply too prone to inadvertent removal by an errant sheet and that is not a good thing for the integrity of your rig! Any concerns or questions arising from your inspection should be addressed to a competent rigger

Running rigging should be inspected for wear and abrasion, especially at the splices, and renewed or replaced as needed. It is a good idea to purchase your halyards slightly longer than needed so that they can be end-for ended and re-spliced as needed. Re-splicing the loaded end is going to be near impossible, but end-for-ending provides an opportunity to install a new splice at the unloaded end. The application of chafe guard on the halyards at the exit point (leather or dyneema tubing) is a great way to mitigate chafe. While on the subject of cordage, I would recommend removing the halyards and other running rigging for winter storage to prevent the accumulation of dirt and algae that accelerates the deterioration of the lines. This task can be made easier by the addition of Flemish eyes at the bitter ends of the halyards, a simple addition.

Inspect the mast all over for rough or sharp areas that can damage sails. Judicious use of chafe protection, low friction tape (e.g. the PROtect line of tapes) and the application of a small dab of silicone on cotter pin ends can go a long way to reducing sail damage and reducing friction during handling. Inspect and lubricate all sheaves with a dry lubricant. Inspect all electrical connections for corrosion, clean and apply a thin layer of dielectric compound before re-assembly to protect against corrosion. Test all lights to ensure function. Replace as necessary. Personally, I replace proactively, and keep the old bulb as a spare. This is a great time to upgrade to LED lights, but ensure that the lights purchased meet Transport Canada / US Coast Guard requirements for visibility. Standard commercial LED's are not typically bright enough to meet the 2nm visibility requirements.

Taking good care of your rig will give you peace of mind, and permit you to get to know your boat even better so that you can identify and fix issues before they become a problem. Happy Spring!