

Some Thoughts on Rigging and Re-Rigging

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Our boats were built in the late sixties and early seventies, we usually don't know the age of the rigging unless we are an "original owner". Most boats aren't used in a manner that overstresses the rig so the problem with rig failures is usually due to age. There have been a number of chainplate failures due to stress crack corrosion so this is certainly a good place to start your job. Lower swage fittings are prone to the same failure problem.

Unfortunately, Allied did a great job in covering the chainplates with fiberglass and they all seem to be located back in a locker that is very inaccessible. We had an aft lower plate break under sail. We were living aboard and under way so it was imperative that we make a good repair. We found a good metal shop, in the area we were transiting, that stocked various stainless alloys. I chiseled off the fiberglass to expose the plates and bolts. On removing the broken plate you could easily see the corrosion, just below the deck line, where water seeped in through the deck calking and set up the right conditions for stress crack corrosion. All our plates were the same size and hole spacing so I took one to the shop and had them duplicate a full set. We replaced all the plates at that anchorage, with the rig up, unfastening one shroud at a time. We did not remove the fore or back stays since these attachments are completely different from the shrouds. Only one of our plates was corroded, and it had magnetic properties indicating 304 stainless. The other five were in good shape and had no magnetic attraction, indicating probably 316 alloy.

While still cruising, at a later time, we decided to prepare the boat for an offshore trip to Bermuda. We thought re-rigging would be very prudent preparation, and decided to make all stays and shrouds the same size cable, and one size larger than the uppers in the original plan. I believe we purchased three hundred feet of cable, that was a bit more than the

actual total length required, but the price/hundred feet, rather than the price/foot made it a less expensive purchase. We decided on Staylock terminal fittings, they are very similar to Norseman but were more available where we were located. We figured out how much cable we would need, got the terminals in hand, and replaced one stay or shroud at a time. Stainless 1 x 19 cable is pretty tough to cut, particularly if you're not at home in your shop. We carried a small clamp on vise so this was mounted on a fender board and helped hold the cable. I think I cut it using a small abrasive cut-off wheel. When estimating length you need to look at the cable you are replacing and see where the turnbuckle is adjusted to, you may want to make the new cable a little longer or shorter to get the adjustment in the middle of the screw adjusting threads. All this measuring business is based on having your rig set up so the masthead is equidistant from each rail and that the mast is raked the way you want it. Our rigging plan calls for about 15" of rake for a sloop, when the boat is on its' lines, fore and aft. Now with a cable removed and a knowledge of any changes, be sure you have a toggle between the turnbuckle and the chainplate, you can put the upper terminal fitting on. These are a bit tough to do but ordinary tools will suffice if you follow manufacturer's directions. Now you can secure the upper terminal of the new cable alongside the upper terminal of the old cable and see what length you need to cut, cut the cable and put on the lower fitting. One of the good things about these screw-on fittings is that you fill them with silicone so they never get water inside, that's probably the real culprit in cable degradation. Put the new finished cable back on the rig and tighten it up. I think we allowed an inch for stretch, not that you stretch the cable but that it is difficult to get the cable pulled really tight while measuring alongside the old cable. New cable comes off a roll, with memory, old cable has been tensioned straight. Now is a good time to clean the turnbuckles, too, then we coated ours with anhydrous lanolin, available at the drug store. You can also buy special marine "stuff" for this purpose.

When you are replacing the uppers is a good time to re-fasten the shroud to the spreader end. Incidentally, our spreaders have a fore/aft and a vertical slot in the end of the spreader. You put the slack cable in the fore/aft slot and rotate it to the vertical and the cable is locked in the end of the spreader. All boats may not be the same, you may need to wire the cable to the spreader end. Get some of the annealed stainless wire used for "mousing" an anchor shackle, it's a convenient size and easily worked.

Spreader should be angled up, slightly, the rig plan specified 4" at the spreader end. This is to keep the spreader in compression when it is under load. I think I made cardboard template so I could adjust the spreader to this angle. The spreader length is 3' 6". When the new upper shroud was in the spreader end and the spreader was angled up 4" I put a copper cable clamp on the cable, above and below the spreader. They will never move. A spreader boot covers the clamps.

We sailed on a friend's boat one time when the leeward upper shroud came off the spreader end. No one noticed until we tacked and the mast began to whip around and looked like we might lose the rig. The owner had been re-varnishing his wooden spreaders and had forgotten to re-fasten the uppers to the spreader ends. We managed to get things under control but I wanted to be sure that would never happen on our boat.

Good luck on the project. A re-rig takes a little time and, of course, costs money, but it puts your mind at ease on the security of the rig when you get into some heavy going, wind or seas.