

The restoration of Áine

Rejuvenating a Pearson 323

Primary Winches – Oh Boy!

Wednesday May 10, 2017 – I really didn't intend to address the primary winches this soon, but weather prevented me from other work so I decided to disassemble one of the winches while sitting in the cockpit one day. Earlier I had researched my winches, they were Lewmar 42ST and found only a little bit information. Luckily the information I found including an assembly diagram, it seems that this winch was only manufactured for a short period of time. From the limited information online I could tell that some P323 had non-self-tailing winches, some had 42ST and still others had 43ST when they were first delivered. I found only two other sailboat manufacturers which included 42ST as standard equipment. I contacted the 'normal' Lewmar spare parts outlets and was told that no spare parts are available for my winches. I was also hoping that either a 40ST or 43ST would be a similar design and I could get spare parts that way, but no such luck both are completely different designs. The only spares still available are pawls and pawl springs, that are still used in newer designs. [Remember you can always click on a picture to see greater detail]

The external condition of my winches was really poor. Most of the chrome plating on the drum and line stripper arm was either completely gone or was peeling off with every gust of wind. The winch design is mechanically time tested, but for this design they elected to mix bronze, aluminum, and stainless steel. The drum is cast bronze which is chrome plated and includes a line-wrap gripping pattern in the center of the drum (which was completely missing from my drums). At the top of the drum is the lower line locking teeth of the self-tail. The upper line locking teeth of the self-tail are on the crown plate and is cast aluminum which is black anodized. The line stripping arm (which causes the line to exit the line locking teeth) is also black anodized cast aluminum and is located between the upper and lower teeth. Three 1/4" – 20 1" long stainless steel socket head cap screws hold the aluminum crown plate to the bronze drum. Next is a plastic flange bushing (separates the crown plate from the stripper arm). Then the stripper arm (which guides the line from the drum into the self-tail teeth), it's cast bronze and chrome plated. To finishing everything off, on



top is a molded plastic cap which holds the bronze split locks (collets) in place. Four 1/4" – 20 3/8" stainless steel socket head cap screws secure the top cap to the cast stripper arm.

The biggest problem with disassembly is galvanic corrosion where the Aluminum comes in contact with the stainless steel screws in the crown plate. Even though the crown plate is drilled with clearance holes, that didn't seem to matter much. The screws were locked in place and 2 of the 3 sockets head cap screws sheared off at the head. It took some persuasion (hammer and steel rod from below) to loosen the crown plate from the screw shafts. Once the crown plate was out of the way, I could removed the remaining screw shafts with my fingers.

All of the black anodized aluminum pieces had corrosion and pitting on all sides. I found a local hard



chrome platter and dropped off the drums. He glass beaded the drums (a form of sand blasting which is less aggressive) and to my surprise returned the gripping pattern to the middle of the drum. I scraped off the gross corrosion from the Aluminum parts with a small straight blade screw driver and then scotch-brighted all surfaces.



Next I cleaned the aluminum parts with a strong acidic cleaner. Lastly I painted all the aluminum parts which do not come in contact with line using a flat-black outdoor spray paint. I also painted the plastic top cap to match the aluminum casting. I know that the paint will deteriorate with time, but the gorgeous drums just didn't look right with the 'natural' faded-and-deteriorated looking aluminum.

INSIDE – Oh My Gosh!

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With the drum removed, I took my first look at all the moving parts inside. What a sight, it all looked like crap and the grease felt sticky like molasses or thick honey and I could not hand turn





anything. The pawls, pawl springs, the two gear spindles, and main spindle (winch handle attachment point) are all stainless steel, everything else is



bronze or plastic. I used mineral spirits in a bowl and a tooth brush to clean everything. But that did not remove all the years of hardened sand and grease. I used a small straight blade screw driver to



scrape out all the hardened remains from the valleys and tips of the gear teeth followed by another mineral spirits scrub. Finally I scotch-brighted everything to remove the remaining hardened bits. All of the gear assemblies were then dry fitted and tested for proper operation. I replaced all the pawl springs.

Finally satisfied that everything was as good as it was going to get, I greased the gears, oiled the pawls and reassembled the winch. It looks like it just came out of the box and worked perfectly, feels smooth-as-silk.

A single winch took 4 1/2 hours from start to finish.

The condition of these winches and the fact that they still, for the most part, functioned stands as an incredible testimony to their mechanical engineering. Which has changed little from the original design. Kudos!

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