



Etchells Fleet 27

Spirited Sailboat Racing on Beautiful Casco Bay... for Over 20 Years.

MAIN HALYARD CHANGEOUT

By Ralph Carpenter

One of the quirkiest features of our boats is the main halyard lock system which secures the main halyard at the TOP of the mast. This design feature, in a couple of different forms, has been haunting Etchells sailors for years.

The purpose of the design is to reduce compression on the mast when sailing. Compression on the mast changes the bend characteristics of the mast. The mast is designed so that for a given amount of backstay pull, the forestay should tension a certain amount and the mast should bend aft a certain amount. Every Etchells rig is a little different, but this ratio is much better controlled with the mast not under compression while sailing. I am not a mechanical or marine engineer, but Skip Etchells was adamant about this design feature from the beginning. It seems most folks who have sailed Etchells for any period of time have experienced the horror of not being able to lower their mainsail because of a failure in this system and cursed this part

of his design. If you find yourself in this predicament the most important thing is to find a way to get your main down before it is trashed, then find and correct the problem with the halyard/lock system so it doesn't happen again. Seven or eight years ago I had this problem on VooDoo and luckily the riggers at Handy boat were working and one of them went up to the top of my mast in a Boson's chair pulled by their crane, released the stuck halyard lock and lowered the mainsail.

Another easy way to reach the top of your mast is to find someone with a cruising boat whose mast is at least as tall as the Etchells and pull up alongside them, send a crew member up the cruising boats mast on a boson chair then heel the Etchells over till they can grab the top of the mast and clear the problem. With the right person in the boson's chair this takes less than 10 minutes. My Pearson 30 is always available if you need this service.

Originally on the old Kenyon masts the halyard lock was external, with a cross shaft as part of the main halyard which lodged into a yolk affair at the top of the mast. Some of you are still using this and it has its own set of issues, but the focus of this write up is on the newer Proctor and Selden/Sparcraft masts which use an internal main halyard lock (see picture) and a halyard with a small

ball swaged to it 11-3/4 inches from the halyard shackle. (Note, the standard-shackle pin-to-swaged-ball length is 13.25 inches according to Chuck Poindexter at Sound Rigging in Connecticut. Why we see so many main halyards here in Casco Bay with 11.75 and 12.0 inch spacing is a mystery. – Matt) It is very important that you check for broken wire strands at this ball EVERY time you hoist your main sail. The vast majority of Etchells halyard failures take place at this swaged ball. Look carefully at the base of the ball for broken strands and if present the halyard needs to be replaced. Inspecting your halyard will give you a little bit of warning and prevent a failure while sailing which will necessitate taking your mast down and using an electrician's snake to rethread the halyard inside the mast. This can be a very frustrating and time consuming job, and should be avoided. Assuming you found the broken strands before the halyard breaks completely it is a fairly straightforward task to attach a messenger line to the existing halyard pull it through then use it to run a new main halyard through your mast. If your existing halyard rope diameter is small enough to fit through the hole in the halyard lock you can attach the messenger line to the end of the halyard rope end at the base of the mast. This worked on Tim Tolford's WhiteHawk last summer. If you have a large diameter

line on your existing halyard you will first have to cut the old halyard at the ball and attach the messenger to that end and pull it through at the base of the mast. Once the messenger has replaced the entire halyard in the mast then attach the new halyard rope end to the messenger and pull the messenger back through from the base of the mast. Make sure the connection to the messenger is secure, even take a couple of minutes and sew the messenger to the line if in doubt. Also make sure no loose ends can get caught in the mast in the process. If you have any questions or concerns about the process seek help from a fellow fleet member. Most all of us have been through this exercise.

Etchells Halyards typically come with the ball swaged to the halyard 11-3/4 inches from the shackle (Note... the stated 11.75" dimension may not be "standard." Sound Rigging says that 13.25 inches is the "standard" dimension on new boats. It could be that older boats may each have a different dimension. -eds) .

Measure yours before ordering to make sure it is standard. (See Comments below for a way to measure with the mast up. -eds)

Also, main halyards come in two many different line diameters (for the tail). If you

will be putting your halyard on with the mast up, opt for the smaller diameter line, even though it is tougher on the hands when raising the main. (I had Sound Rigging build a new main halyard using FSE Sirius 500 6mm line for the tail, which is large enough to not cut your hands when hoisting in strong winds. I was able to reeve the halyard onto my old Proctor mast with the mast stepped. My previous main halyard tail was 3 or 4mm diameter, and it was tough on the hands. -eds)

The smaller diameter is made to be able to run through the opening in the halyard lock. Anything larger than ¼ inch will not pass through the lock and can only be installed with the mast down.

Recently a common problem has arisen with some halyards purchased from APS or Hall Rigging. The ball swaged on the halyard needs to be pressed so that the diameter of the swage shaft that connects the ball to the cable cannot be larger than ___ or it runs a high risk of jamming in the halyard lock. Prior to the 2011 World's in San Diego 3 boats had this same problem all with brand new main halyards.

To avoid this problem check the diameter of the swage before installing the halyard and if it's too large either file it down or have it swaged again to the proper

diameter. Another solution is to buy your halyards from riggers who actively sail Etchells and are aware of this problem. A few of these are Ezra Culver at EZMarine in Miami, Chuck Poindexter at Sound Rigging in Connecticut, or Marblehead Rigging out of San Diego. I trust these folks but if I obtained a halyard from anyone else I would make sure and check it before installing.

HOW TO GET THE CORRECT MAIN HALYARD BALL-TO-SHACKLE PIN DIMENSION WITH THE MAST UP?

The correct length of the main halyard between the swaged ball and the shackle pin remains an open question. It may be that each boat uses a different length for this. However, there is a straightforward way to measure the ball-to-shackle pin dimension on a boat with the mast up, assuming there still is a functioning main halyard installed.

By rule, the mainsail luff length is 32'-6" (maximum, measured between the gooseneck and head bands painted on the mast). The dimension from the top of a standard mainsail headboard to the bearing surface of the grommet is ~3/4 inches (I think... need to verify.)

Given this, attach a tape measure to the main halyard shackle, and raise it up the mast and lock the halyard into the halyard lock. The tape measure dimension down to the top of the lower limit band on the mast at the gooseneck should be 32'-6" less 0.75", or 32'-5.25" (you will also subtract off the measurement any small distance that the tape measure zero-point is above the bearing surface of the halyard shackle pin).

Alternatively, you can instead attach the tape measure such that the 3/4-inch mark aligns with the bearing surface of the halyard shackle pin. Tape and/or tie the tape measure hook to the body of the shackle. Then no zero-point offset correction is necessary.

If the measured distance comes to more than 32'-6" (or 32'-5.25" plus the zero offset if you did not attach the tape in the alternate fashion), then your existing halyard ball-to-shackle pin dimension is too small by the difference (thus your mainsail is over-hoisted). And vice-versa.