DIY Talurit splicing

by Cliff Martin

I want to write a bit about this subject because there seem to be a lot of mixed opinions about this and a lot of misunderstanding too. I don't profess to know all the answers. The internet is very barren hunting ground for information. I've spent a lot of time thinking about this. A lot of the theories which initially seemed reasonable to me I later rejected. I have seen splices very obviously incorrectly pressed and rigging failure is something I wish upon no one

Perhaps the best place to start is not at the beginning but at the end. The very end was some old rigging I happened to have. I cut through the talurit (copper collar) to see what had gone on inside and polished the face of the cut with a power sander and then fine sandpaper on a block. The talurit was almost perfectly round in section with the two ends of the stainless wires lying side by side buried in the copper. In the process of setting the talurit two things had happened. Firstly, the talurit had become quite a lot longer than a new (loose) one. Secondly the copper had been squeezed in so tightly that it had fully filled every void on the outside of the wire. It was as if the pressures were so great that the copper assumed the properties of something like plasticine in the process of setting.
Careful observation of a real swaging press showed the talurit is held between two semi circular grooves which match the radius of the talurit. A considerable force (the press I saw was a 10 tonner) is used to squeeze the formers together to set the talurit into the circular section previously mentioned.

I made a couple of prototype swaging formers and eventually worked out a system to make them come together reasonably accurately in line. What amazed me was the force required to set the thing properly. I used a No. 9 vice which I can just about lift and has 6 inch wide jaws which open to 9 inches. THIS VICE WOULD NOT APPLY SUFFICIENT FORCE TO PROPERLY SET THE TALURIT.
I eventually managed to set it with repeated blows from a 4 LB hammer using a 14 LB hammer head as an anvil. The talurit elongated around 30% and on cutting it open I saw the copper had flowed into the grooves between the wires. I was using 3mm wire (second hand Wayfarer standing rigging) and DIN series talurits.

Observations

It has been suggested my method of setting the talurit with a hammer may work harden the copper and cause it to crack. I reject this theory with my "plasticine metal" theory but I don't really know. Obviously if you're going to bash the thing around from one flattened shape to another then it's going to split.

There seems to be some misunderstanding of the amount of force required. I hear "you can do it in a vice" "The DIY swagers just use a couple of little bolts" and " just squeeze it down as far as it will go". A properly set talurit will be ROUND in section and SIGNIFICANTLY LONGER than when new. The force required is very considerable.

For 3mm wire there are three types of talurit. These are (I think) DIN (thin), SAE (thick) and aircraft grade which are slightly figure 8 shaped. To the very best of my knowledge they are completely interchangeable but each type needs to be set using the appropriate formers. I use the DIN type but it's an individual thing.

DIY swagers

The **Ormiston Wire Splicer** does indeed use just two little bolts but it only sets a very short section of the talurit (approx 2mm) at a time. Each talurit needs pressing in 3 places. These cost around £40 and I have been reliably informed are a worthwhile piece of kit. The downside is that the resulting talurit is very bulky and can be a problem if it has to run inside a spar. It is possible to buy a bolt cropper style tool which does the same job but at £400 it is very expensive. It is really a rigger's tool for use from a bosun's chair.

So after quite a lot of time to think about it, what would I do?

I'll make new luff wires out of second hand rigging, I'll do kicker assemblies and jib halyards and emergency repairs to frayed stays but when it comes to new standing rigging I really don't think it's worth it. You've got to buy the wire, the thimble and the talurit. Is it SO BAD to pay an extra teeny little bit to have the talurits pressed in on the proper machine once every 5 years or so? Broken masts are expensive!!!

Further information

Harbour Chandlers in Emsworth. The front man there is dead good on rigging and very knowledgeable about all things boat. I think he's called James. He was involved in marketing the Ormiston Wire splicer when it first came out.

Cliff