



The SHOCK of the OLD

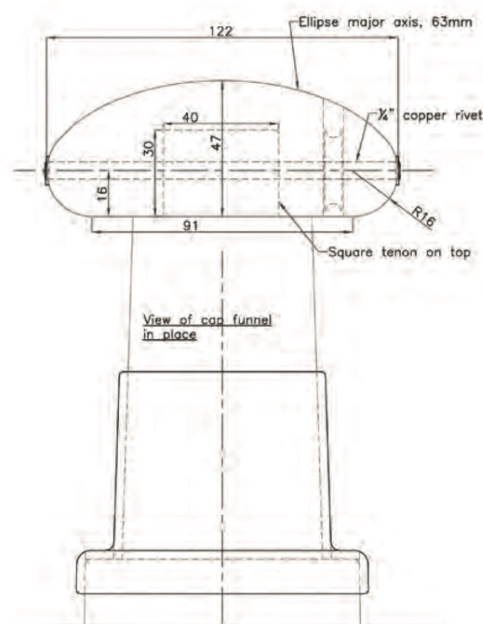
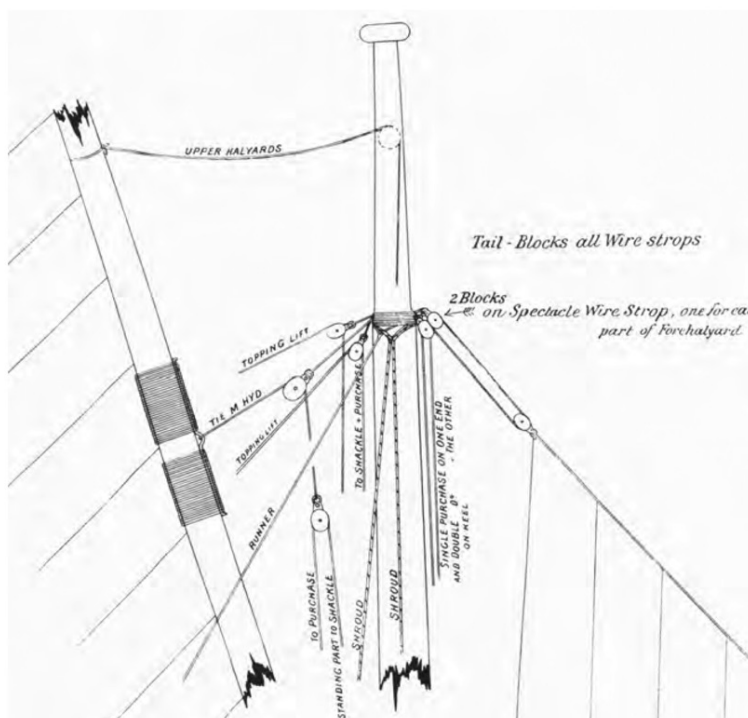
Part 16: Taking It From The Top

Moray MacPhail considers ways to reduce weight aloft by rethinking mast furniture for traditional rigs

With this article, I'll try to wrap up the discourse on standing rigging by looking at some details which make for better or longer lasting mast furniture.

At the masthead, where we will start, it transpires that much of the attention needed to make the fitting work well is not to do with the engineering or strength aspects, which have been the main focus of the articles in this series to date, but the need to accommodate other things. In the old days, all you needed was a few – or a great many – strops and a button at the top of the mast, with a sheave for the burgee. It is still not a bad plan if it can be made to work as





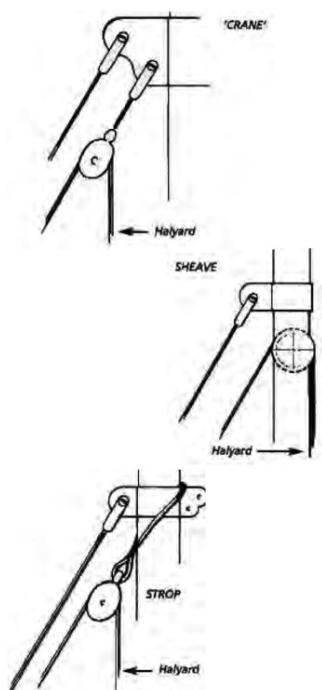
Facing top: Serious weight aloft! Jackyard topsails are set when racing Falmouth working boats. Photo: Kathy Mansfield.

Facing below: Modern mastband, custom-made in stainless steel by the author.

Above: Simple solutions: left – on a 5 Rater from Dixon Kemp in 1895 and right – the Dublin Bay 21 in 2019, reproduced by kind permission of Paul Spooner Design Ltd. **Below:** Alternative attachments for the foresail halyards and forestay.

has happened for the Dublin Bay 21s recently revived in Ireland.

Today, a mastband is much more common. For a simple sloop rigged gaffer – often with only one pair of shrouds, it is pretty straightforward – shroud lugs set vertically to align with the plan view angles, backstays – if fitted – set vertically, again aligned with the plan view. For some reason these are often shown tilted backwards as in the side view, which apart from being fiddly to fit on a round mastband, don't line up with the stay. If as is usual on a gaffer, two backstays are fitted, it is not a good idea to have them both come to the same attachment. If an unscheduled gybe brings one down, you don't want the other to follow it. Besides it is useful and tidy to set a peak halyard eye



sideways between the backstay lugs. The example across the page – yes, it is upside-down on my work bench – shows the idea. Here we used eyes for the backstays rather than lugs.

The foresail halyards and the forestay will need clearance between them. It's not a problem if you have roller reefing, since the gear rotates around the stay but that system does make it harder if not impossible to reef a bowsprit.

You can use a crane for the stay and a lug for the halyard. This works well on a smaller craft where you might tension the rig using the luff wire in the jib. If the rig tension is taken by the stay then you need to engineer the crane quite carefully.

Alternatively you can use a strop hung around the mast or a sheave in the mast. Both of these lower the vertical position of the halyard, so clearing the interference.



Providing enough clearance for halyards to work cleanly has always been an issue but now there is a good deal more stuff which needs to be accommodated as we keep pace with modern technology, even in small craft. For example, the mast of the *Yachting World* 5-Tonner – above – has evolved over its lifetime from carrying looped stays and a button, to the addition over time of lights, antennae, instruments and sensors, each with their own mounting. It all works but becomes rather messy.

An approach successfully adopted here for a similar sized craft is to make the upper plate overlap both the cranes and the masthead itself. This

acts as a mounting point for those various bits and pieces as well as stabilising the forestay and backstay lugs. Here the stays – yes this is one of those pointy sail craft – terminate in eyes which fit between the pairs of plates fore and aft. In this case there is also a crane for the spinnaker set sideways so it can swivel freely. The jib and main halyard sheaves were set into the mast below this fitting, so as with the jib, provided good clearance between the halyard and stay. When completed, this fitting ended up with lugs for the cap shrouds.

Moving on to larger yachts, it is quite common, though also quite complicated, to incorporate a sheave

box into the fitting. Here the through bolt for the sheaves also acts as the anchor for the cap shrouds. The geometry gives good clearance for the spinnaker and foresail halyards and as in the earlier example, toggles for the stays are mounted in well-stabilised structures fore and aft.

In the transition from drawing to reality, as shown in the pictures right, you can see the lug for the aerial and instruments aft and a mounting for a topleight welded to the upper face. The snag with that is that there will be some re-work to cope with any changes in the equipment fitted.

The pace of development in marine electronics – who has even heard of Radio Direction Finding these days, apart from the editor, of course? – means that change will be needed. So in the case of the gaff cutter, we reckoned it would be a good plan to have a distinct and separate plate onto which equipment could be mounted. Any major changes in future can be dealt with by using a different shaped plate.

Note also in this example that the cable gland into the mast is both protected and accessible. Cables run inside the mast suit gaff and lug rigs better than external wiring.

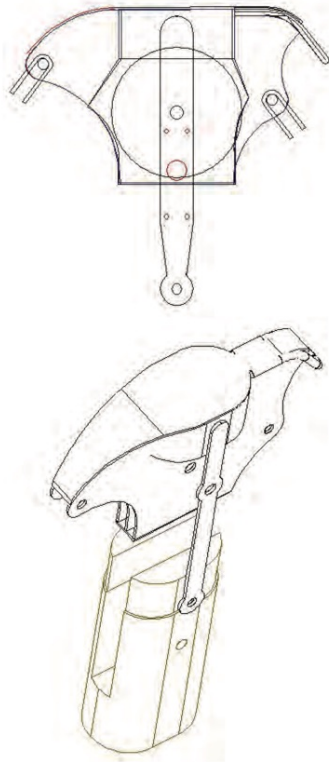
So, here's a summary of what I've learned about masthead fittings:

- Keep them as light in weight and as simple as you can; remember that complication is rarely lightweight and – usually – expensive.
- Align backstay lugs using the plan view of the boat, not the side view.
- Don't be tempted to attach both backstays to the same point.
- Make sure any mast sheaves are large enough in diameter to throw the halyard clear of the mast.
- With technology moving so quickly, think about future-proofing to allow extra mounting brackets and/or provision for cabling.

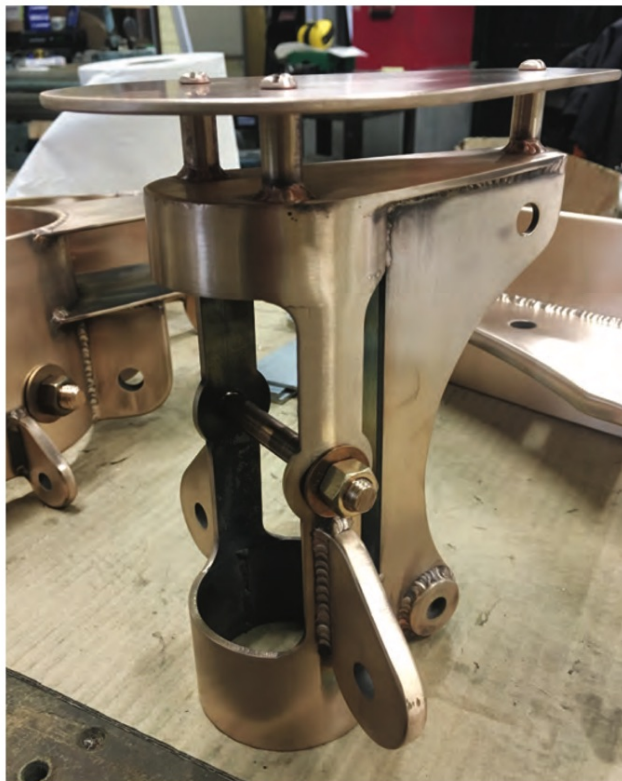
Next time, we'll discuss hounds, cranes and tabernacles.

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Top-down solutions – left and above: *Modern masthead fitting incorporating a sheave box, crane, mounting for the navigation light and well separated attachment points for the standing rigging.*



Left and below: *This one for a large gaff cutter has a properly sized sheave for a jacksail halyard, crane for topmast stay and well-spaced attachment for a foresail halyard. The separable top plate allows for future changes in instrumentation and sensors.*

