Dredging for oysters under reefed gaff mainsail. Photo: Cat Holman

Part 29: Sore Points with Saddles

Gaff saddles bear us no ill will, writes Moray MacPhail; maybe they're just misunderstood?

Every so often when I ran Classic Marine I would get a call from a customer of variable grumpiness complaining that his – usually his – gaff saddle 'didn't work'. Now while we have all had our suspicions about the cussedness of inanimate objects, it is probably unfair to blame the saddle itself. It bears us no ill will.

Having made over 700 gaff saddles in all shapes and sizes over the last 30 or so years, it is also perhaps a little unfair to blame me. I do like to think that by the time I retired I had got the hang of it. So where might these problems lie?

The saddle is the wrong shape

I dealt with this at some length in W172 but in brief, the higher the peak angle of the gaff, the more the saddle should wrap around the mast to stop it twisting off. The other aspect of shape is that if the lugs on the back of the saddle are not long enough, then as it peaks up, the gaff will tip the top edge of the saddle into the mast; see Figure 1 – again.

The saddle is the wrong size

Ideally a gaff mast is parallel from the gooseneck up to the full sail position of the saddle. If that is the case, then from experience a saddle internal diameter of 15% more than the mast diameter works out right. Smaller than that and you may find it prone to jam.

If the mast is tapered, then you may have to tolerate a tighter saddle at the lower end by the gooseneck and maybe a bit looser at the top below the hounds.

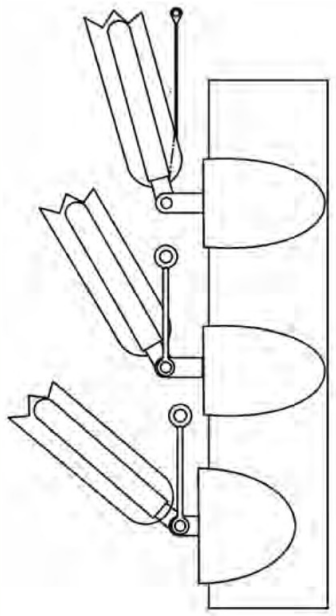


Figure 1: Gaff saddle shapes.
Bottom: *The traditional shape for a peak angle around 45˚, usually hoisted with a stirrup. Jaws would also work.*
Middle: *As the peak angle reduces, the saddle has to go further around the mast. Up to about 30˚, a stirrup is still feasible.*
Top: *Higher peaked gaffs often use a strop rather than a stirrup and the upper surface of the gaff will need to be shaped for the strop.*

If you have a saddle much bigger than that, the thrust along the gaff can be off centre. At best this can add some considerable friction into the works; at worst the saddle can open up even more, so increasing the problem. With old-style saddles with one rear lug, the offset load can bend the lug or even break it off.

Loads on the saddle are unfair.

It is not unusual for the complainant to mention that it works better on one tack than the other. If the lugs or spar end are not bent, then the usual culprit is the throat halyard.

If, as is usually the case, the halyard includes a number of blocks made into a tackle and the throat crane is fitted on the centreline, then if at full hoist the blocks are almost touching – 'chock-a-block' was the old nautical expression – then the force from the halyard will probably be off centre.

That's fine on one tack but causes a problem on the other because when the saddle tries to rotate around the mast, it is prevented from doing so by the throat tackle. Possible solutions include raising the throat crane, offsetting the crane from the centreline of the mast so the halyard pulls centrally or changing the blocks so that the attachment to the saddle is central. Moving the crane up the mast is often the simplest and most effective solution.

The load along the gaff onto the saddle is too high.

Assuming that the throat halyard is playing fair, we need to turn our attention to the peak halyard, because it is that which affects the load along the gaff. Ideally the peak is arranged to end up pulling at an angle to the gaff, which gives some thrust down the gaff to set the saddle happily onto the mast.

For small craft the peak is simply arranged to come in at 90˚ to the mast and is fixed at a single point which can usually be adjusted. More often, spans are used along the gaff, either to distribute the force from the peak halyard better or to allow for the peak halyard to adjust its position when reefs are put in.

The most cursory survey of gaff-rigged craft will show that there is no hard and fast rule for how spans should be arranged but that same survey will show that in many cases the spans are devised so that there is a large thrust down the gaff. What happens if the load is too high?

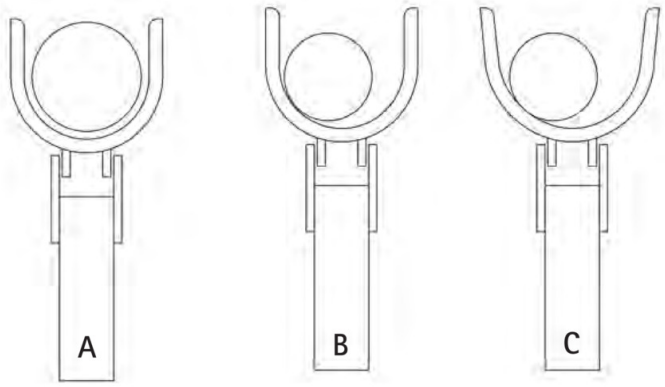


Figure 2: Size Matters A – *A reasonably tight fitting saddle will keep loads central.* **B –** *If a little larger, loads can be applied off-centre, sometimes splaying the saddle* **C –** *Making the situation progressively worse.* **Below:** *Two real life examples!*

Firstly there will be a good deal of unnecessary friction in the works which is going to make lowering the sail difficult, particularly if you like to drop the throat first to use the weight of the gaff to help get it down. Secondly that very high load, if applied a little off-centre – because of size or throat halyard arrangement as discussed – may cause the saddle to spread wider and the wider it spreads, the more likely it is to spread further. Finally, any snag in the covering of the saddle will tend to wreck the surface of the mast.

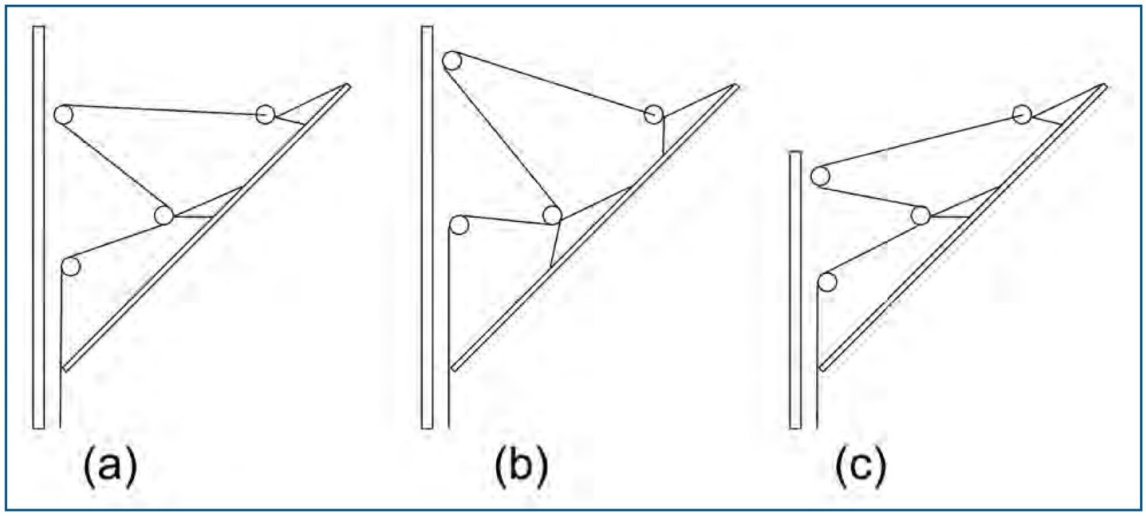
The load along the gaff onto the saddle is too low

What happens in the opposite situation is that the saddle hangs back from the mast and often because of its own weight – and the fact that it has to pivot horizontally – it then droops. It will not then set against the mast and may dig its upper edge into it. In this case, a parrel line – with or without parrel beads – can help to loosely locate the saddle while being raised or lowered. But if the line gets too tight, that indicates the need for some remedial work on the spans or the location of the halyard blocks.

Putting it all together...

Ideally then you want the saddle to have some thrust to set it against the mast while raising, lowering and in operation and if the saddle shape and size and the throat halyard arrangement are correct, it's all down to the spans or the arrangement of the peak halyard.

The schematic right shows some of the aspects. At (a) is a fairly common arrangement where the spans are arranged to provide some thrust down the gaff. If it works, fine but if the saddle is being forced round the mast or is beginning to splay, then it is straightforward to ease the load. You can either raise the blocks on the mast if there is room or lengthen the spans, or move them along the gaff toward the saddle as in (b). Problems tend to be accentuated if the upper section of the mast is short, which may be the case on craft which have a separate topmast or on una rigs such as catboats (c). The main point



Facing page top: *A reefed well set mainsail on a Francois Vivier gaffer.* **Below:** *What can happen with too much load along the gaff.* **This page above:** *Schematic span arrangements.* **This page:** *This Brown Boat shows a very long span can work on small craft.*

is that by adjusting the span length and position and/or the peak blocks position on the mast, you can adjust the force along the gaff to suit.

The picture left shows what can happen when the peak halyard is set too far back along the gaff; the saddle has been forced around the mast.

For a very versatile high-peaked arrangement, one long span almost the length of the gaff can be used. The picture right shows a Brown Boat half-rater with such an arrangement; I used the same on my Corinthian also a half-rater. One of the advantages was that I could leave the peak halyard alone for the first two reefs because the span shackle simply rode along the span. A disadvantage was that the gaff could upskittle when being hoisted if the halyard slid right along the span but that was fixed by a short preventer. Another problem arose when hoisting because there was so little load along the gaff, the saddle would hang back away from the mast and droop. Again fixed with a parrel line. It would be possible to move the lower end of the span up the gaff to provide thrust.

That's enough on gaffs; next time we'll look sympathetically at booms.

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