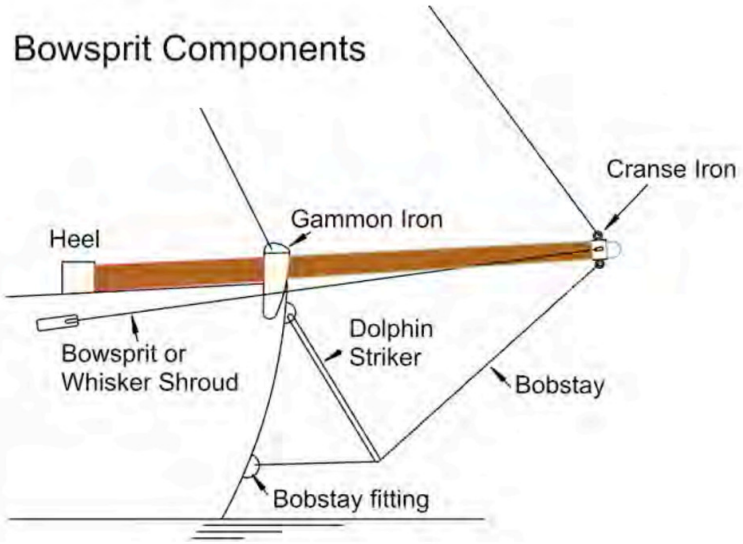
The SHOCK of the OLD

Part 19.2: Taming the Bowsprit

Raise or retract? Moray MacPhail discusses the fittings we may need.

In W142 and W150, I described what a bowsprit has to do and how strong it needs to be. Here I'm going to look at the need to remove it temporarily when mooring or berthing to reduce expense or congestion. The usual options are either to raise the bowsprit out of the way or retract it by hauling it inboard.

In both cases you will be unable to use reefing gear on your jib because of the rigidity of the extrusion. So you will need to use furling gear, a jib set flying on a traveller or a jib hanked to the jibstay as the diagram here shows. I have summarised the various options in the table across the page.



Item	Retractable	Lifting
Cranse Iron	If retracted right through gammon, cranse iron may need to be removable. Otherwise no change	No change
Gammon Iron	If bowsprit has shrouds and is loose in the gammon iron, then needs enough slack to let heel end lift or rotate. If no shrouds are fitted gammon iron could rotate, or bowsprit locally swelled to be a tight fit just at that point.	Either open topped or hinged.
Heel	Arrangement depends on how retraction envisaged, and configuration of stays. A roller may be useful to take the weight.	Provide with hinge pin. Ideally aligned with bowsprit shroud attachments to stabilise
Forestay	Can be mounted on closed gammon if on centreline. If bowsprit off-centre, then usually mounted on stemhead centreline.	If bowsprit on centreline, not usually desirable to have removable top to gammon, so needs to mount off centreline. Traditional arrangement is bowsprit off-centre, forestay on stemhead
Bowsprit Shrouds	Can be fixed length if heel arranged to enable bowsprit to be tensioned e.g. by wedging or jacking. Otherwise need to be adjustable	Ideally fixed length with ends co-linear with heel pivot. If not then need to be adjustable.
Bobstay	Can be fixed length if heel arranged to enable bowsprit to be tensioned e.g. by wedging or jacking. Otherwise need to be adjustable	Adjustable

Cranse Iron

There are several ways of transmitting the rigging loads into the bowsprit – see W150 – the easiest being to cap the end. It's strong but you can't fit a traveller sheave outboard of it. You can mount the cranse iron on a shoulder on the bowsprit just like a mastband – W154 – or use a conical cranse iron which allows it to be knocked off if needed but guarantees a snug fit in use. A parallel cranse iron without a shoulder tends to be either too loose to be secure or too tight to remove. There also needs to be enough room on the upper lug for both the forestay and furling gear if fitted. Good options are a long cranse iron, as on the Norfolk Gypsy or a separate small band for the furling gear, a sort of non-travelling traveller.

Above: *Cranse iron for a Dublin Bay 25.* **Below:** *Bobstay fitting to go with it.*

Gammon Iron/Stemhead Fittings

Except for sloops, there needs to be an attachment for a forestay at the stemhead. Plus you need a support or guide for the bowsprit, and arrangements for the anchor and mooring lines. A bowsprit makes life more awkward for all of these.

Generally speaking on working craft the forestay is taken direct to the stemhead by a large plate mounted on the side or the front of the stem, or via a dumb sheave through the stemhead itself so the forestay is tensioned on the foredeck. With the bowsprit mounted beside the stemhead, that's a sound solution. Yacht owners seem to prefer the bowsprit on the centreline, which needs some sort of arched arrangement to carry the forestay, which effectively precludes the option of raising the bowsprit.

A number of recent designs like the Golant Gaffer and Cornish Crabber 26 have reverted to the stemhead arrangements developed over centuries. An off-centre bowsprit gives more options for retraction inboard since it withdraws down one of the sidedecks, freeing up deck space for windlasses and cleats.

Above left: *This traditional arrangement has the bowsprit heel sandwiched between bitts which extend down to the keelson.* **Right:** *Here brought up to date.* **Below:** *Modern fitting for a fixed heel.* **Bottom:** *Roller fitting for a retractable bowsprit.*

Bowsprit Heel Fittings

To keep the forward accommodation space clear, modern boats with bowsprits tend to use a fitting bolted to the deck rather than the traditional samson post or bitts which run down through the fore cabin to the keelson. This has opened up options for retraction which didn't exist or need to exist before, but which are nowadays almost mandatory.

With the heel of the bowsprit tenoned into a samson post, the bowsprit has to be moved forward to release it, so every stay needs to be adjustable. The Cornish Crabber 24 arrangement, with an open top and upright after face, lets the bowsprit lift before retraction but you need to take some tension off the bowsprit shrouds first. On the Norfolk Smuggler, we got around this by angling the after face of the heel fitting and the bowsprit so that it can be raised out of the fitting and re-tensioned by pushing the bowsprit downwards. On both of these boats the aim is to retract the bowsprit onto the side decks or cabin roof, so that the bobstay, shrouds and cranse iron can remain fitted; good examples of how fittings for traditional rigs have evolved to meet today's needs.

For hinging rather than retracting, it is usually possible to arrange a pin at the heel to act as a hinge. If possible, the hinge axis should align with the attachment points on the hull of the bowsprit shrouds to form an A-frame. Then the only stay which needs adjusting is the bobstay. This frame can also be used to help with mast lowering.

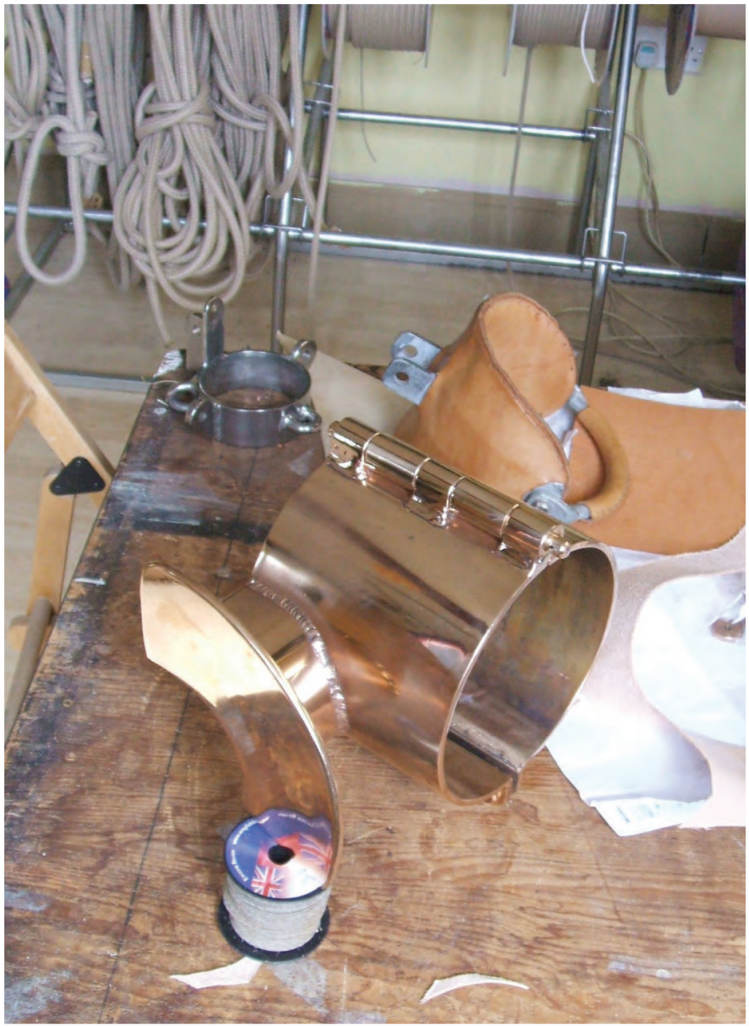
Bobstay

I'll refer you again to W150 for expected loads so you can develop a consistent set of equipment for your bobstay, whether it is wire, chain, rope or a combination of these. Please also check the breaking loads of any blocks you may be using. The bobstay needs to be flexible since mooring warps or anchor chains will tend to rub against it. Plastic tube is often used as a chafe protector which is a good idea if you make sure there's some provision for drainage at the lower end to avoid corrosion. An easy way of doing that is to cut the tube at an angle so water can run out.

Slightly less obvious is the need to make the bobstay not just strong but stiff so the outboard end of the bowsprit stays in the right place. Working craft with long sprits would steeve them down when not under load. As the rig powers up, the end of the bowsprit lifts as needed. This practice isn't the "proper way to do it" so much as a reflection of the materials available for the bobstay. With traditional rope tackle whose fall is led along a long bowsprit, you could not achieve the stiffness needed to keep the cranse iron in place without some pre-set; modern low stretch high strength rope can work wonders.

The Bobstay Fitting

This is a very highly loaded item placed inevitably in the worst possible place for corrosion. It spends its entire life being dunked in salt water, alternating with a dollop of fresh oxygen to help the corrosion get going. It's a bad day if it lets go. I suggest sizing it for at least double the bobstay load; see W150 and W155. What tends to be fitted on smaller craft is either an eyebolt or a U-bolt. U-bolts may not have long enough 'legs' to pass through the stem of wooden craft. It is also quite difficult to drill two long holes exactly parallel to fit it. Easier to use an eyeplate fastened to the stem with two bolts, so a small inaccuracy in drilling the holes won't matter.



Anchoring

We struggled to create an anchor arrangement which works alongside a bowsprit without causing damage to either the sprit or the hull. Long troughs, single rollers, double rollers ... you name it, we tried it. Finally a solution occurred which is a large radius curved channel which acts not only as a stowage – the sharp bits stay below the sprit – but also as a fairlead for handling the anchor, with the chain being led along the side of the bowsprit and held well clear of the hull. Unless removable it does mean that the bowsprit can't be retracted, though.

Phew! After 19 episodes we have covered spars and stays. Now for running rigging, starting next time with a look at rope.

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