Bowsprit Hinge on "Bumble Chugger"

By Robin Whittle, Shrimper 124 (*Bumble Chugger*) (Winter 2003)

In April 2003 Practical Boat Owner (PBO) published an article which I had written on the use of the bowsprit for raising and lowering the mast on my Shrimper. In fact I wrote the article in February 1999 having designed and fitted the system the previous summer. It was mentioned in a small entry of the Association's News Letter that year. PBO did not publish the article as I had written it and in some ways made it more palatable for the general reader. They informed me that there had been some criticisms of the system by one reader, Frank Colam, of Crabbers Ltd. They kindly sent me a copy of these and I replied defending my case. Since neither Frank's comments nor my reply have been published yet, I have decided that the best thing to do is to write this article for the Shrimper Owners Association and provide the full story.

Those of you who own a Cornish "Shrimper" and trail it a fair bit, or moor near low bridges, may have found that raising and lowering the mast takes a bit of "beef" for one person. Living near Kingston has provided Gillie and me with an incentive to sail down the Thames to the estuary. There are many bridges on the Thames and after our first passage I decided that life could be made a lot easier if we could lower and raise the mast from the cockpit. I set about designing such a system and fitted it in July, 1998. It has been very successful, not just when encountering low bridges, but for rigging and de-rigging.

The purpose of the hinge is to allow the bowsprit to become a lever to raise and lower the mast. In an upright position it provides enough leverage (similar to an "A" frame) to raise the mast with relative ease as shown in Figure 1.

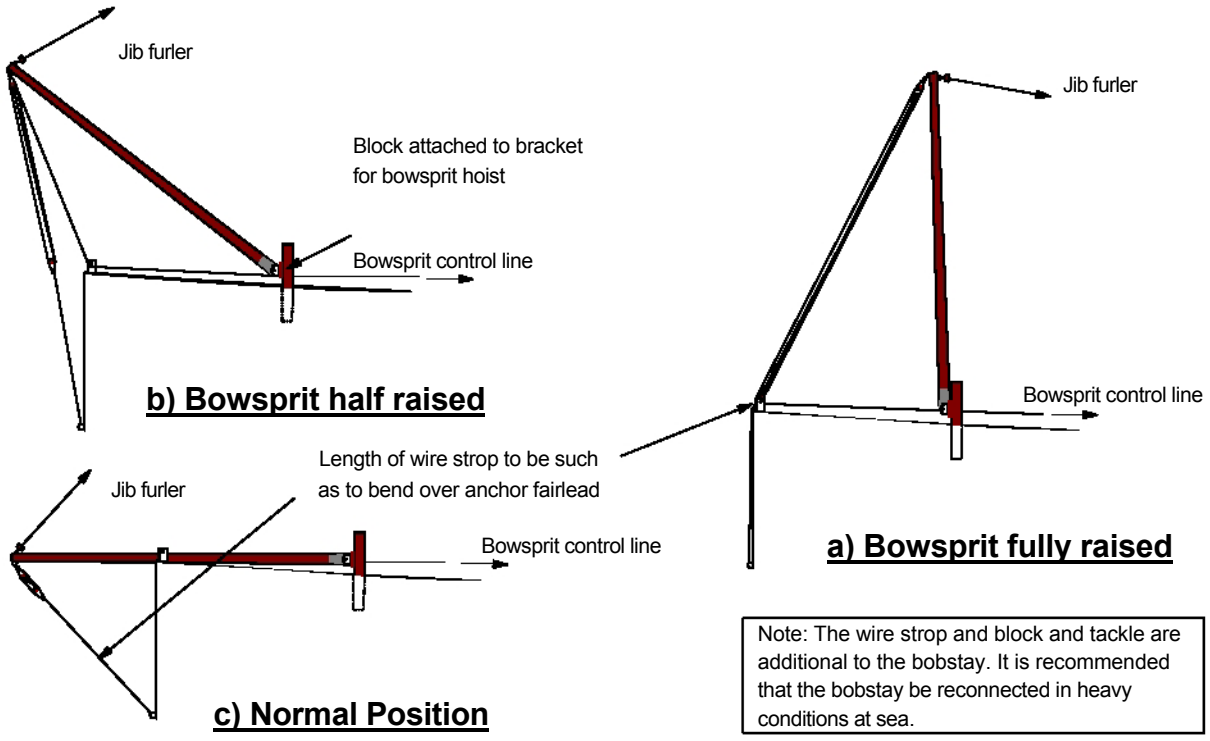

Figure 1: Raising and lowering mast

The mast is initially in the horizontal position with the jib furler connected to the end of the bowsprit as normal (Figure 1a). Photo 1 demonstrates a trial with a piece of rope as substitute for the jib furler.

Photo 1

The side shrouds are attached ready for raising the mast. The bowsprit is also connected by a block and tackle to the bows. A wire strop attached to the steel loop at the bottom of the bobstay is led over the anchor fairlead and completes the connection. This can be seen in Photo 2.

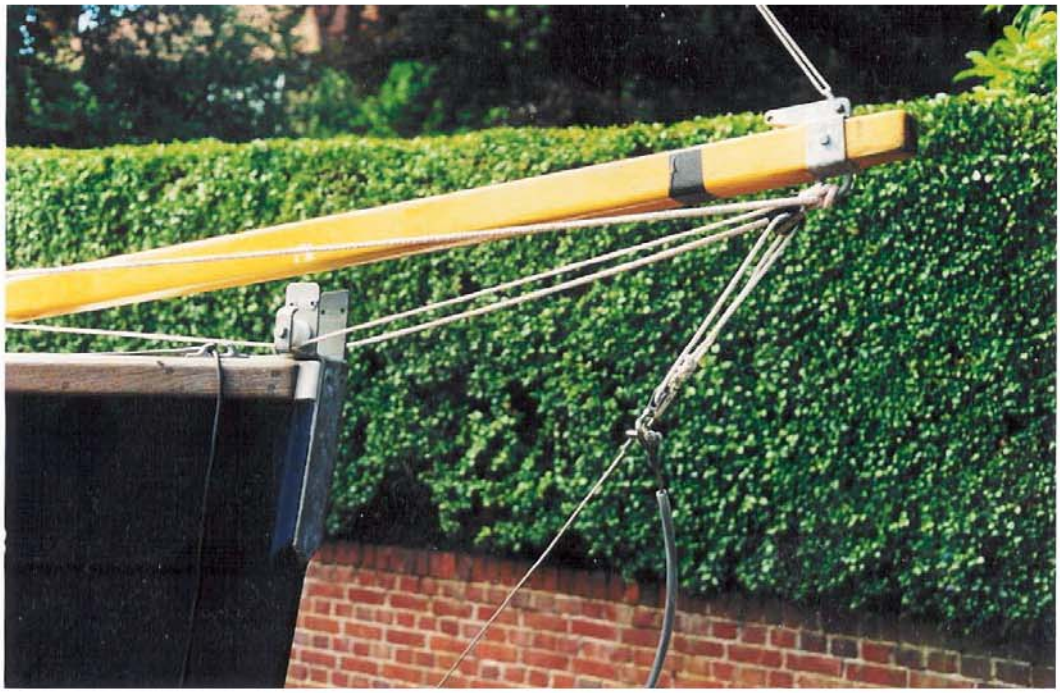

Photo 2

At this stage the bob stay is disconnected from the bowsprit and can be seen loosely attached to the wire strop. It should be noted that although the block and tackle can be used as a

substitute bobstay it is recommended that the original bobstay be reconnected in heavy conditions at sea. The block and tackle gives a 4:1 purchase and can be seen in Photo 3.

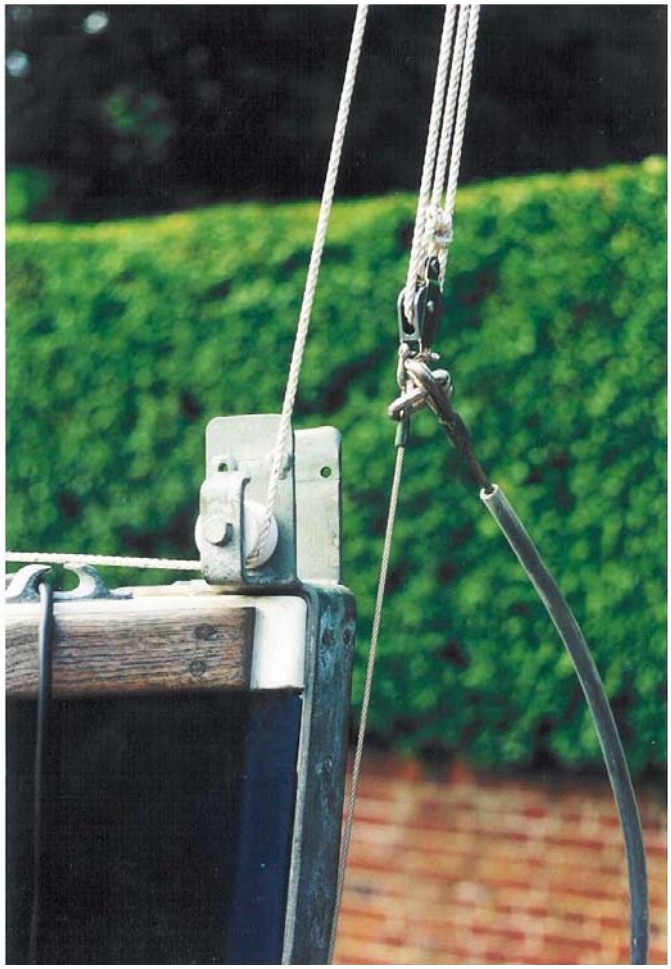

Photo 3

The line from it is led back to the cockpit via the anchor fairlead pulley as shown in Figure 1b and Photo 3. Hoisting the mast can now take place single handed from the cockpit. You will notice that the bow bracket for the bowsprit is no longer a complete ring. I cut the top band at the centre and straightened up both parts to lengthen the two sides. The two pairs of holes that can be seen have been drilled and threaded to take bolts to complete the ring once the bowsprit is lowered into its normal position. The length of strop is such as to allow the block and tackle to function even when the bowsprit is in its normal position.

You will also notice in Photo 2 that two pieces of rope are attached to the end of the bowsprit which are lead and fixed at the side of the boat. I attached these to provide some lateral stability when the bowsprit is sticking up in the air, with a possible cross wind blowing. A little care is required to find the correct position for the fixing along the gunwale, to ensure that they remain reasonably tight throughout the whole range of hoisting and lowering. The same reasoning applies to the side shrouds which remain slack at until the mast is fully raised. This is the subject of Frank's comments which are given below together with my response.

Details of the new fittings.

Figure 2 shows the layout of the details and a large scale sketch of each part. The bowsprit is cut at a point 12mm from the inboard end as shown in Detail 2. A further length of 22mm is cut off.

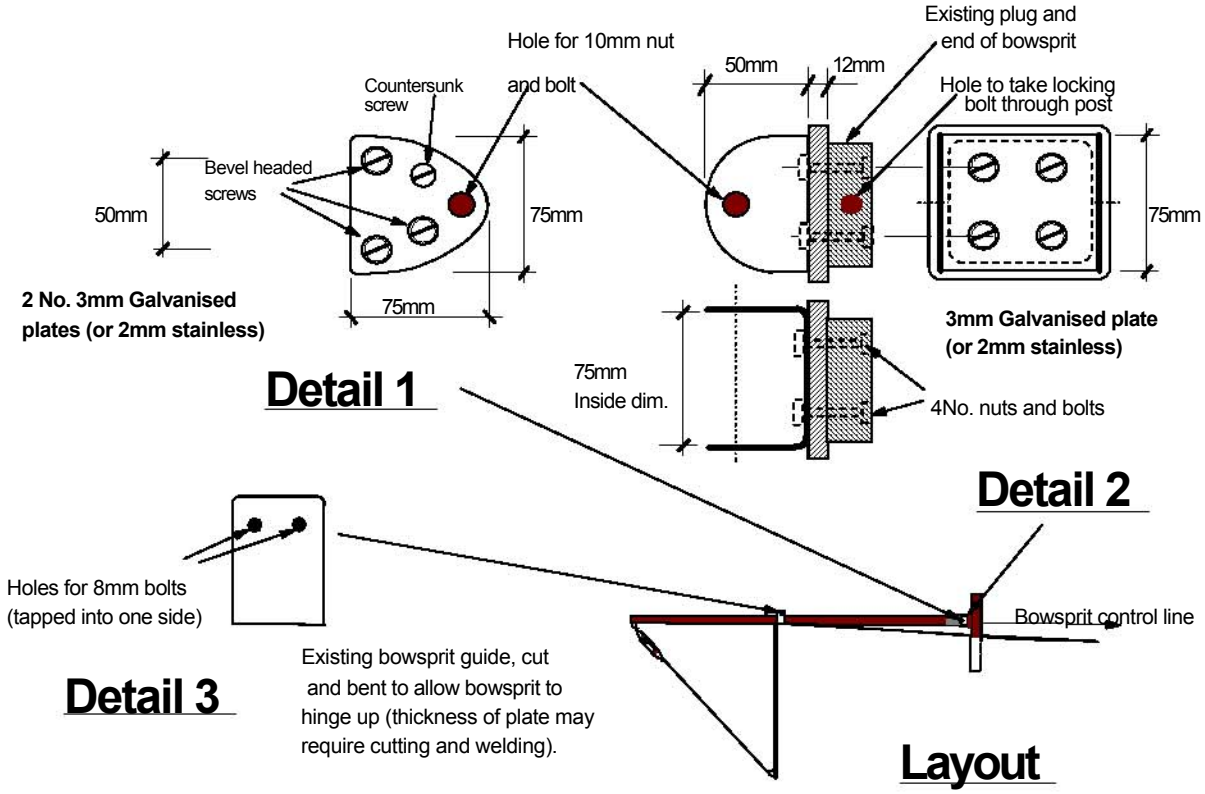

Figure 2: Layout and Part Details

Two stainless steel plates, 2mm thick, are cut to the shape shown in Detail 1. Note that the upper screw closest to the pivot point should be counter-sunk (see Photo 4).

This is to allow the two plates to slide inside the "U" plate as the bowsprit is hinged upwards. The end of the bowsprit should be shaped to match that of the plates. The "U" plate should then be cut and bent to the dimensions shown in Detail 2. The plates attached to the bowsprit should fit snugly into the two sides of the "U". The "U" should be attached to the end block firmly with four bolts and nuts. The latter are inset into the wood as shown in Detail 2. The pivot pin should be 10mm diameter. I used a stainless steel nut and bolt. In order to ensure that the block is held firmly in the pocket of the post it is advisable to drill a hole through the post and block and bolt this to ensure the two are locked together. Photo 4 shows the two parts held together with a piece of thin cord. This was replaced later.

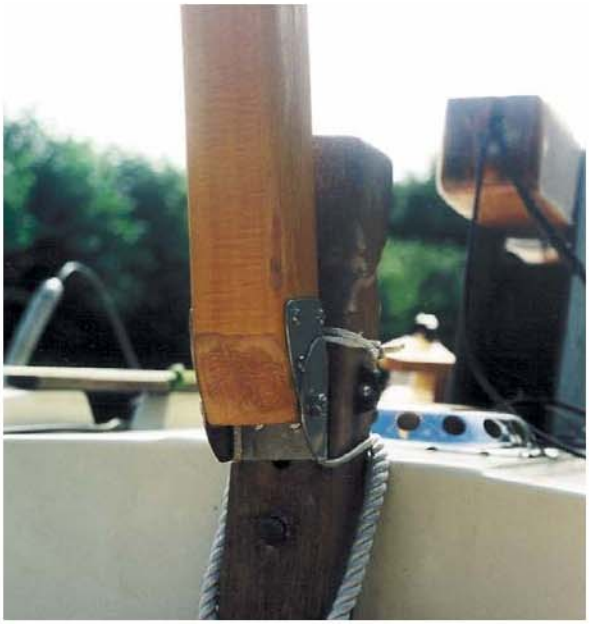

Photo 4

Detail 3 shows the guide at the bow end of the bowsprit. I cut through the centre (fore and aft) of the existing galvanised square band (original style) and straightened both sides (see Photo 3). I then drilled two holes and tapped one side to take two 8mm diameter bolts. I had a problem as the steel beneath the galvanising had become brittle with age (16 years) and it cracked as I was trying to straighten it. This led me to take off the whole bracket and have it rewelded, both where I had straightened it and at the lower corners, to ensure its robustness in rough weather.

Comment by Frank Colam to the article in PBO:

In PBO April 2003, there is an article showing how one can modify the Shrimper bowsprit to use it as an A-frame to ease raising and lowering the mast single handed. It`s a pity we had no opportunity to pass a Yard Comment. Initially I was going to reply to the magazine but thought better of it. However for your information and your members I applaud owners finding ways to simplify the various boat chores but would like to preach a note of caution particularly with this article. I must stress that it is imperative to ensure that the sideways movement of the bowsprit is minimalised. We use a similar system on our Crabber-22 and Pilot Cutter. These two vessels have sprit shrouds permanently fitted and in line with the pivot position of the bowsprit to ensure there is an A-frame at all times. The article suggests one finds suitable points on the deck to attach temporary sprit shrouds to. There are as standard none and they need to be purchased and positioned. Secondly, the bowsprit of a Shrimper is the only forward support for the mast. If one intends to remove the upper part of the stemhead fitting which sits around the bowsprit it is imperative that this is replaced by some other means of support once the bowsprit is in the horizontal position. Thirdly, it is totally naive to think that this can be done properly and cosmetically pleasing for £30 of materials. Fourthly, there is potentially an expensive damage problem with the jib foil if the drum is attached close to the bowsprit end fitting. Lastly, if as per the article one needs to raise the mast and at the same time adjust the sprit supports and also adjust the mast shrouds at the same time, is this actually an easy method?

My reply:

I welcome Mr Colam's comments concerning my article "Mast lifter for Cornish Shrimper" (No. 436 April 2003) as it gives me the chance to describe in more detail how I have set out the lateral supporting lines for the bowsprit and mast.

I should first note that my development has been for a "Classic" Shrimper built in 1983 and that I submitted the article in February 1999. I have developed the system a little further since then and it has been used successfully on several trips up and down the Thames through London and on the Norfork Broads.

I hope the reader realises that the mainsail must not be hoisted when attempting to lower the mast, but I have shot a few bridges with some jib still flying!

Bowsprit lateral support lines: Two lengths of plaited polyester covered 5mm Kevlar rope (A), each 3.8m long, are tied to a shackle. The shackle is attached to the bobstay loop at the end of the bowsprit.

For each length of Kevlar rope a bowline knot is tied at a position 1.8m from the shackle pin. A piece of 6mm platted polyester rope (B) 1.3m long is threaded through the tight loop of the bowline knot.

Rope (B) is threaded through the forward drain hole and the ends are tied together with a reef knot such that when pulled tight upwards the top (junction with rope (A) is level with the bowsprit hinge.

The aft end of rope (A) is tied tightly to the shroud plate.
When the bowsprit is raised the two ropes (A) remain tight for the full range of movement.

Mast lateral support lines: A copper ferrule is clamped to each of the shrouds 2.5m below the hounds.

A piece of 6mm platted polyester rope (C) 3.2m long is attached just above each of the ferules. The method that I have adopted for the attachment is to use a small plastic bullseye fairlead (25mm long) with a small shackle. I have cut a longitudinal groove down the middle of the fairlead. The shroud lays in this groove and the shackle pin threads through the hole of the fairlead locking the shroud in place. The rope is tied to the shackle and the other end is tied to the forward safety loop on each side of the cabin top. These are placed at the edge of the cabin top about 56cm forward of the mast. The ropes are tied quite tight assuming that the rigging is set quite tight.

As the mast is lowered the slack in the shrouds is taken up by the ropes (C). The distance is not exact but I have found that the ropes tighten as the mast is lowered and the elasticity of the polyester is sufficient to absorb the change in length.

Cost: I note that the result may not be cosmetically pleasing but I do not think that a cost of £30 is totally naïve, as stated by Mr Colam. Mind you, I have not offered to make one for anyone else yet, so, of course, in such a situation the profit increment would have to be added!!

rtw 16/9/03