# Refurbishing the Centreplate

by Roy Ratazzi (Shrimper 121, *Folly*) (August 2010)

I refurbished *Folly's* centreplate in April 2007, as by then it had been in place for about 24 years and was definitely showing its age. Although essentially following the standard procedure, gleaned from articles and discussions with owners who had refurbished their centreplates, I decided to use resources at my disposal. Cost was clearly a key factor in my planning. Some of the methods used at specific stages were a little unconventional, but I achieved my aim and thought that fellow owners might like to read how I set about the task.

The first thing to remember is that a Shrimper centreplate can only be removed and replaced from outside the boat. It must always be supported whilst carrying out all preparatory work to avoid any risk of injury or damage, for it is remarkably heavy. It is usual for the operation to be carried out with the boat on its trailer or supported in a cradle.

I sought a hoist and another pair of hands to assist me, so to lift *Folly,* I borrowed a Manatou fork lift and two slings from a local farmer, and lashed up two spreaders. I removed the centreplate pivot nut and bolt and lifting wire while the boat was on its trailer, taking care to support the front end of the plate so that it could not drop through the road trailer and damage the keel housing as the bolt was removed. The farmer then carefully lifted the boat, while I remained under the boat to ensure that the centreplate remained vertical on my trailer (for health and safety readers, close your eyes!).

As the centreplate slid out, I noticed that one of the two packing pieces attached to the side of the plate was missing. These were fitted on early boats to hold the plate central in the casing and prevented contact between the steel and GRP. Of course, they also help reduce annoying centreplate slap when one is trying to get a good night's sleep while at anchor. Pads are not fitted on later Mark 1 or on Mark 2 boats, being replaced by lengths of thin rope wound through holes drilled in the leading edge of the plate.

Loose or damaged packing pieces can be one of the reasons for a sticking centreplate (refer to Chris Sharland's description), but sticking may also be caused by distortion of the centreplate case through swollen internal ballast (caused by sea water rusting the steel shot that is used in the manufacture of the ballast). If your keel housing shows any sign of curving towards the centreline it is likely that the ballast has started to rust , causing internal cracks to appear and the keel housing to close up in parts (refer to Robin Whittle's article on ballast). In this case it is unlikely that any packing pieces can be fitted as the aperture will not allow for a freely operating centreplate. This is what I discovered in 2010 and resulted in the removal and replacement of all the internal ballast (a ghastly job, perhaps the subject of another article).

With the plate removed it was a heavy 2 man lift to move it from the trailer into the back of my 4x4, after which the boat was lowered back onto the trailer.

I decided not to clean my centreplate with an electric wire brush as the effort to remove the plate and pay for galvanising suggested that the job should be done properly. I therefore had it shot blasted by Hi-Tech Surface Treatment Ltd, Deacon Trading Estate, Chickenhall Lane, Eastleigh, Southampton. Once clean it was then taken around the corner to Wessex Galvanisers on the Tower Industrial Estate, also in Eastleigh. Total cost for both shot blasting and galvanising in April 2007 was about £110.

At Wessex Galvanising the cost of coating was based on the weight of the item being coated, with fixed prices for defined weight bands. The weight of a centreplate,

about 72 kg, puts it at the lower end of the 51 to 125 kg band, so with considerable capacity remaining, other Shrimper parts (chain plates or tabernacle, for example) could be included within the fixed price.

With the newly galvanised plate returned, I arranged for a local engineering firm to re-tap the screw holes for the two packing pads. I then made and fitted two new pads, cut from a Teflon kitchen chopping board, using stainless steel countersunk head screws to ensure that the heads were well recessed into the centreplate.

Then for the tricky bit - replacing the newly refurbished plate. I began by digging a trench in a field to ensure that the keel was partially buried in the vertical position for the boat to be lowered onto it by the fork lift equipment. It should be noted that the centreplate has a bush fitted into the bolt hole to allow the plate to rotate freely once the bolt has been tightened. I had difficulty in obtaining the correct bolt with the appropriate tensile strength, so contacted Select Yachts (Cornish Crabbers) and purchased a kit from them. It was only then that I realised the existence and need for the centreplate bush to be fitted through which the bolt was inserted. Thus the galvanised steel bush takes much of the weight of the keel rather than the bolt, which should have no contact with the keel.

The kit comprised:

A pivot bolt (centreplate) with nut attached
2 Rubber washers
A centreplate bush

Total cost in 2007 was £8.61 + postage.

I obtained locally 2 new galvanised washers to complete the kit required.

The bush proved difficult to keep in place as the plate was inserted, so I blu-tacked it into the keel hole.

The most difficult task was lining up the holes through which the new bolt had to be inserted. I lowered a piece of thread through one of the holes in the plate housing and tied the other end through the bush and hole in the centreplate. This allowed me to see (with the use of a torch shone from inside the boat) where the keel hole was relative to the holes in the plate housing. At this stage I used a third person to adjust the keel to the hole, with directions being passed to him by me inside the boat. The whole keel replacement operation took an hour to complete, after which the boat was lifted (keel up) and lowered back onto her trailer so that I could fit a replacement keel lifting wire.

From start to finish, the whole operation was completed in a week.

Lessons learned:

1. Do not underestimate the weight of the centreplate/keel.

2. Using 2 people under the boat to adjust the position of the keel when refitting would have made life easier. This would be in addition to the crane operator and person inside the boat.

3. Dropping the boat onto the keel was probably easier than trying to lift the keel up into the keel housing, as slight but constant adjustment of the very heavy keel is far from easy.

4. Remember to grab a stiff drink or two when you have finished. You will have earned it!