Mast Support Repair

By John Benge, Shrimper 433 (2002)

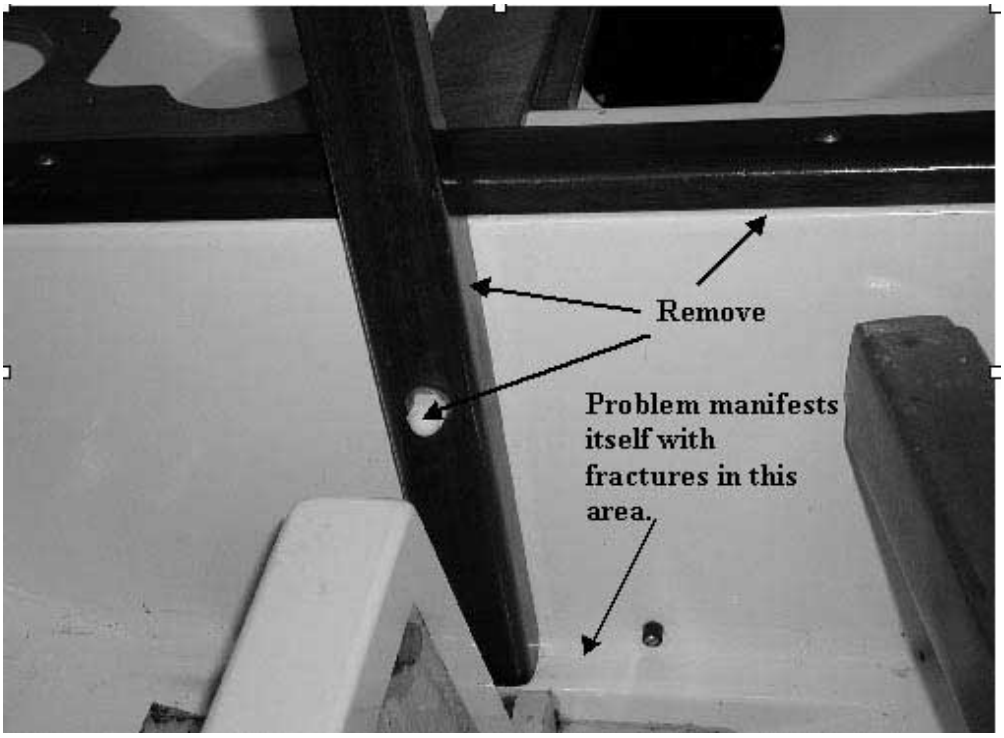
On many older boats defects have developed over time with the mast support arrangements. The wooden vertical post at the forward end of the cabin (located at its upper end within a "cut out" wooden block screwed to the deck and at its lower end the cabin sole) moves down and fractures the internal moulding at its base.

The function of this support post is to transmit mast loadings down to the internal ballast and keel. Unfortunately, on some boats, there was no blocking arrangement fitted between the cabin moulding and the internal ballast. Therefore the post securing bolt to the galley bulkhead and the internal moulding, which is around 5mm thick, took the load. Ultimately, with the resultant downward deck deflection, trouble may also be experienced with the main hatch opening and closing.

The necessary repair is normally quite easy to carry out and within the capabilities of a competent DIYer. Alternatively, we would expect a professional repair to cost around £200 to £250.

Repair Schedule

1. Remove mast. The repair must be carried out with the mast removed.



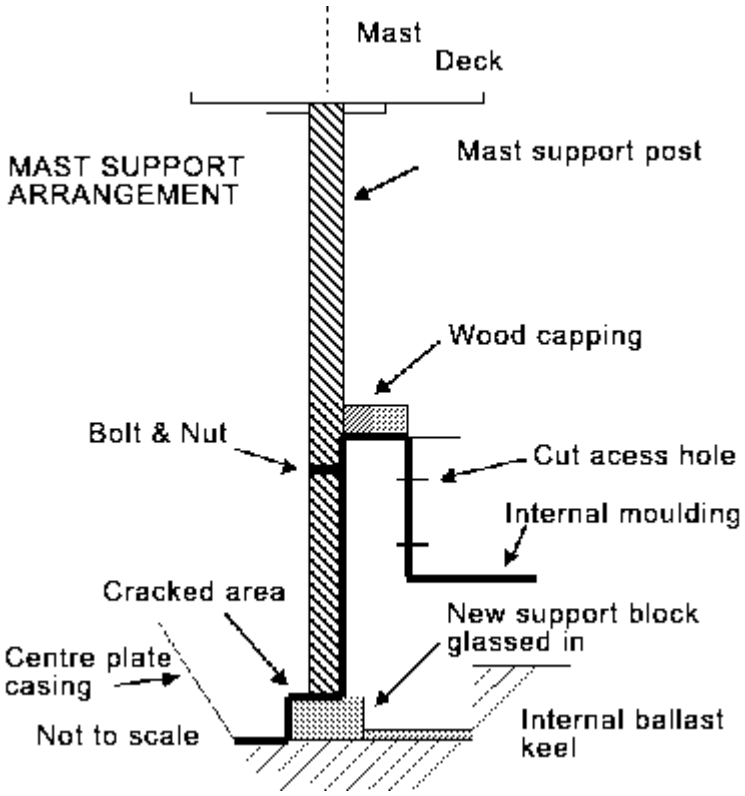
2. Remove post top locating wooden section, 4 screws.

3. Remove thwartships wooden cap rail fitted along the top of the galley moulding, 4 or 5 screws. A small hole to the post bolt nut is now accessed.

4. Undo the post/bulkhead bolt and nut and remove the support post.

5. Cut an access hole inside the galley moulding. This should be about 150mm diameter.

6. Fit a hardwood block, length around 200mm, width 50mm and depth to suit the gap between internal ballast and the moulding and harden same up firmly against the moulding using wedges.



7. The gap under the block and the surrounding area can now be filled with resin mixed with chopped strand matting. The internal ballast level normally "steps up" just foward of the repaired area and the resultant space is thus easy to fill with resin and matting. Ensure any air bubbles are removed by working the mixture well in.

   Notes:
   a. Use general purpose polyester resin and grade 1 chopped strand mat.
   b. Be sure to follow manufactuer's instruction re resin and catalyst mixture - normally a 2% catalyst ratio gives a working life of about 20 minutes.

8. Fit a 6mm thickness plywood (marine) blank over the access hole. Glue or screw into place.

9. Cracks in the moulding, cabin side, may now be repaired by grinding out and gelcoating. Finally polish.

10. Refit support post making good any elongation in way of the bolt hole with epoxy filler.

11. Refit galley cap rail and top location block.

The following photograph shows a modification to the foregoing repair:

In this case the moulding was very badly damaged, having broken away under the post.

The hardwood support block was therefore extended up to fit the opening where the damaged moulding had been cut out. The block was made to the original level. By using fastenings to the block it was lowered into position through the galley top small access hole and pulled up tight to the correct level. Resin and chopped matting were then poured in from the top, thus obviating the necessity of a further access hole in the internal galley moulding. Finally, sealant was applied to the small gap between the hardwood and the moulding.

Both the foregoing repairs have been monitored over the last season and found satisfactory.