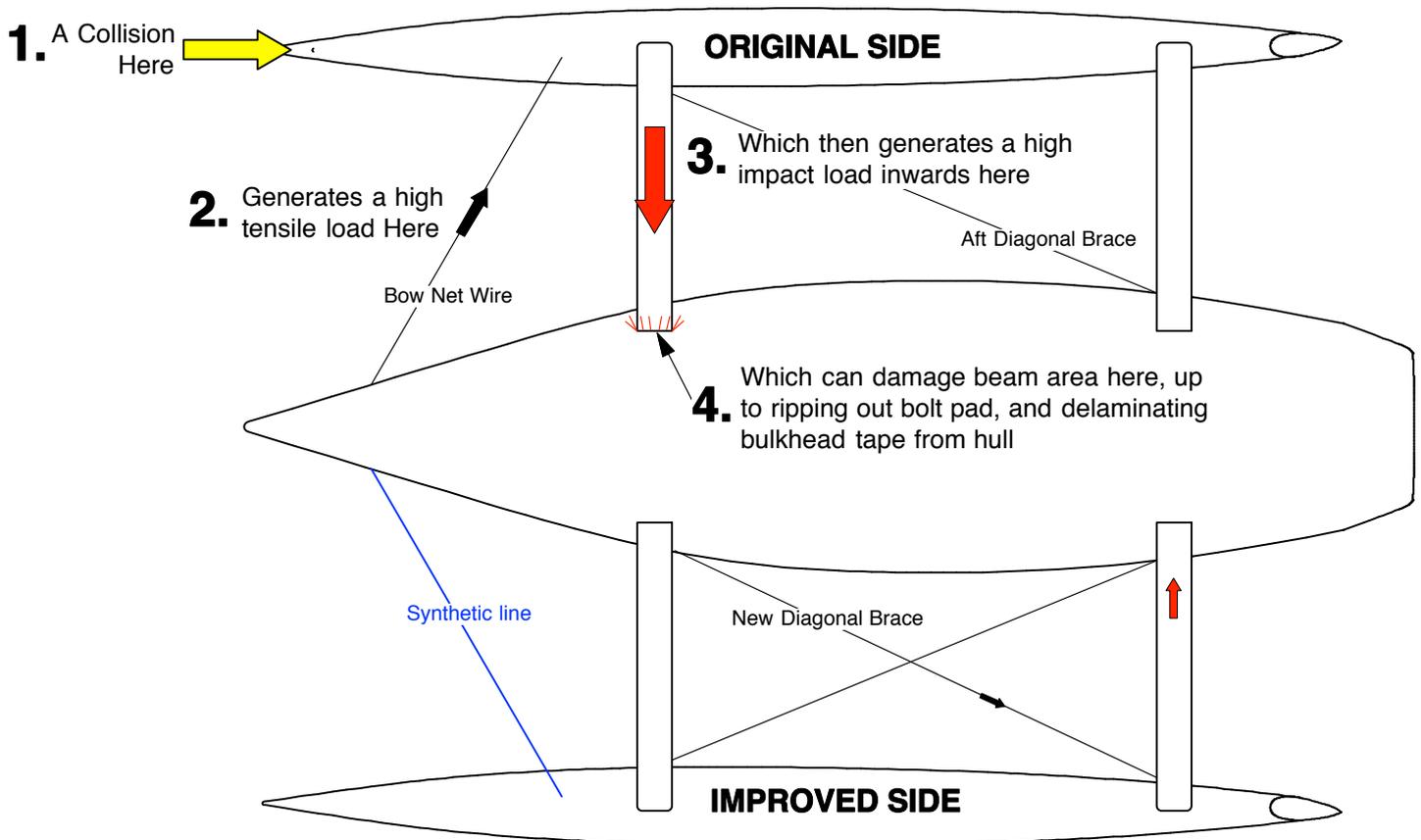


F-31 Float Bow Collisions

The Damage Possible, and How To Minimize



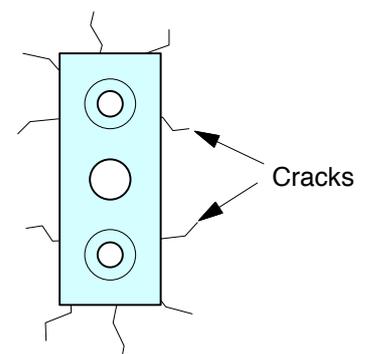
Damage from collisions can be minimized by replacing bow wire with a more stretchy synthetic, and adding a wire brace further aft, which will reduce impact load, and direct it through the less loaded aft beam area instead.

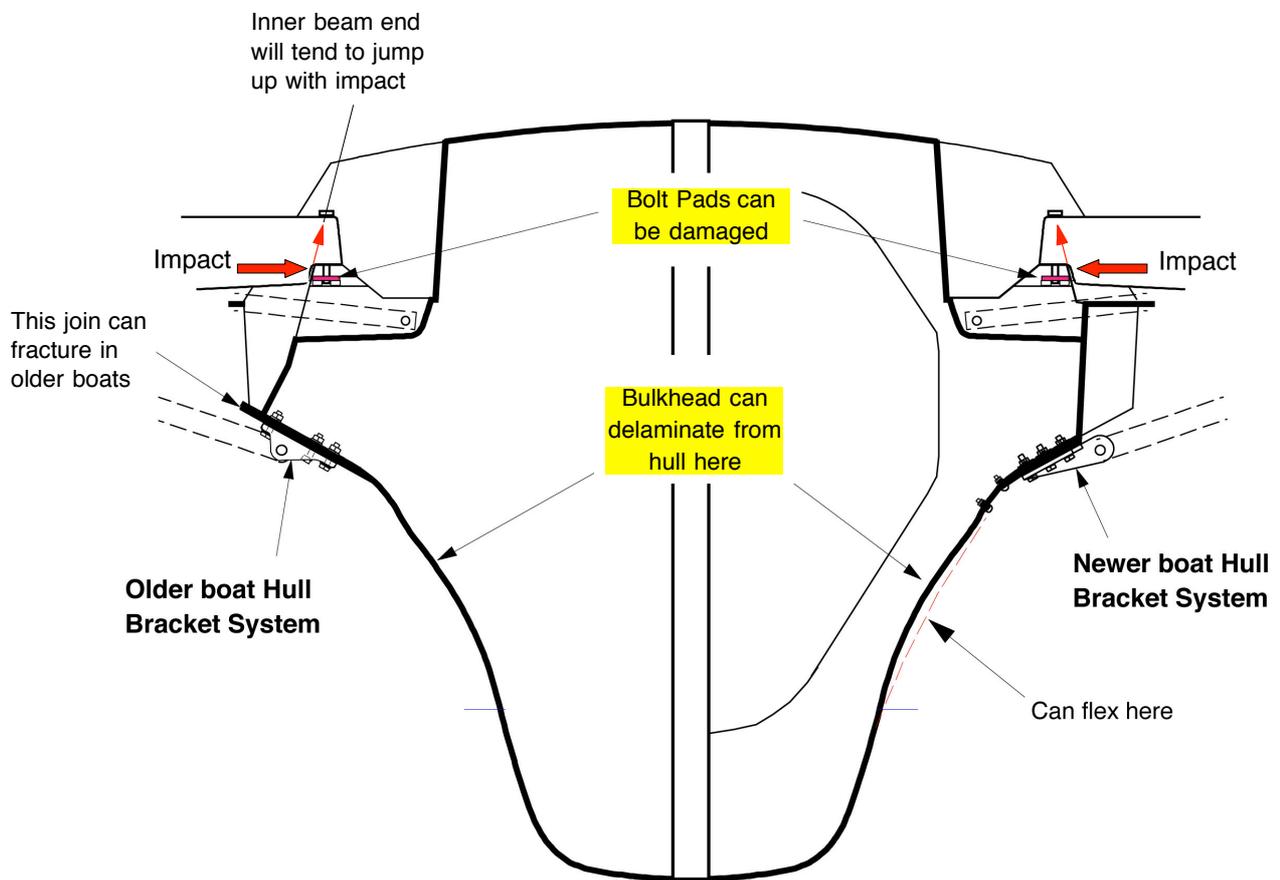
The F-31 can suffer damage at the forward beam inner end and/or the beam bulkhead area as the result of an aftwards float bow collision. Damage can also appear much later, due to a weak point having been created from a collision at some earlier time.

A float bow collision can result in a sudden inwards impact on the forward beam, which is generated by the forward diagonal wire brace used at forward edge of F-31 bow nets built in 2000 or earlier. This diagonal wire will turn the aftward impact inwards, and into the forward beam, as shown above on upper (starboard) side.

The wire braces were initially fitted to prevent major damage to both fore or aft beams, and/or folding system, by preventing the whole side from being forced back, but the inner area around forward beam can be damaged as follows:

BEAM BOLT PADS: Beam bolts screw into these stainless steel pads/plates and they are normally not under much load in normal sailing, but can be damaged in a fore and aft collision, even to being pulled right out. They should be regularly checked on the exterior for any star cracks emanating from around the bolts as these will indicate a likely collision at some time. If such cracks can be seen, then forward beam bulkhead taping to hull must also be checked carefully, as this is the next failure point.





BEAM BULKHEAD: If collision is severe enough, the fiberglass tape holding the Forward Beam Bulkhead to the hull can delaminate from hull, so this area must be checked closely, details of where are on next page.

Other areas to check for damage include stress fractures around the collars at the outer beam ends, while bow pole can be bent downwards.

The main cause of the above failures are the bow diagonal wire braces which are not used on smaller models, where they are not necessary. However, the F-31 is large enough to where some fore and aft flex is obvious when tightening up the rig, so the aft diagonal braces were fitted to counter this, with the bow braces then fitted to oppose.

This setup has prevented major damage to beams and folding system in fore and aft collisions, but the angle of the bow braces is relatively severe, and this can transfer a large inwards shock load into the forward beam bulkhead area, as shown.

The boat will usually hold together after such damage, as the extra laminates present in the hull are sufficient to take the usual beam loads for some time. However considerable flex will be introduced in the hull area, and secondary damage such as cracking will occur to interior parts due to this flex, and sailing loads should thus be minimized until port is reached.

REMEDY:

There is no 'fix' as such needed, other than don't hit anything with a float bow. However, a way to avoid any problems with older boats is to replace the wire bow braces with more stretchy synthetic lines, and then add new wire braces from the forward beam area on main hull to the floats at the outer end of aft beams, as is standard on newer boats. This new aft brace is at a much more effective angle, and will divert any collision loads (much reduced) into the aft beam area which is more able to absorb them.

If a boat has already been damaged, then a Repair Bulletin is available from Farrier Marine.