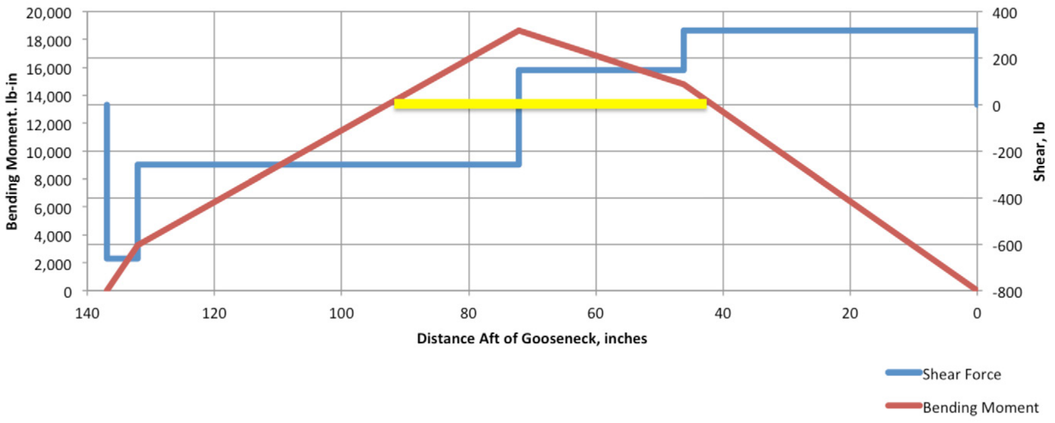
BOOM AND VANG

In my view, the boom on an Etchells is way undersized for the way we sail boats these days. But, it is what it is. If you have the need to replace your boom, the rules permit a 1.3 meter long doubler sleeve inside the boom to help prevent it from breaking. The diagram below presents a simplified estimate of the shear forces and bending moments in the boom section when it is loaded up (upwind). The yellow line shows where the allowed 1.3 meter long internal sleeve should be located to be effective in resisting the bending moments. (Possibly the sleeve should be shifted a little further forward due to the added effects of the combined shear loading – that is a subject for a more detailed study.) In any event, the doubler should span from just forward of the vang attachment to aft of the forward mainsheet block attachment(s). And the sleeve should fit as tightly as possible inside the boom section. The sleeve should be riveted to the boom extrusion along the boom's neutral axis. Since any method of attaching the sleeve is permitted, probably using epoxy to glue the sleeve to the boom extrusion would be a good idea, but tricky to do.



Estimated Boom Load Diagram Assuming 50# Tension on Mainsheet-Fine (with 6:1 Tackle) and 20# on Vang Control (with 36:1 Cascading Tackle). The yellow line represents the max length of the internal sleeve.

BOOM VANG

I believe that I use more boom vang tension than most other people do, at least in our fleet. I set the vang tension so that when I bear away at the top mark, I keep a suitably tight main leech as I ease the main out without needed to re-adjust the vang. Currently, I have a cascading 36:1 purchase on the vang (3:1 above deck, and 12:1 below deck), but I would like to install a lever. There is too much friction in the blocks that it is hard to ease the vang off in light air, and when raising the mainsail.