

Soling Structural Improvement

When a sailboat heels under the influence of the wind, the windward shroud is pulling up tension the point of attachment. At the same time, the weight of the keel is pulling down on the hull. These two stresses meet in an area sometimes called the “sailing box” or the “stress box” of the boat.

This is an area where the standard Soling 1M design needs some help. As designed, the pull of the shroud goes through a screw eye into a wooden block, is then transmitted through the forward bulkhead and through glue joints to the hull and keel box. The pull from the keel goes through glue joints at the bulkhead and the seam between the keel box and the hull. Especially if CA glue is used, this is a recipe for flexing and cracking.

A better arrangement is shown in the photo. This is based on the practice of the builders of ultralight wooden hulls in free sail era. The shroud bolt (shown here temporarily placed, with the deck off) is an eye bolt through an ABS plastic block. A cable, tightened with a DuBro 300 turnbuckle, runs down to a bolt through the keel box. This cable takes stress off the hull and the bulkhead and should result in a longer-lived boat. It would be cleaner to attach the top of the cable to the eye bolt instead of a separate screw, but I wasn't sure my stiff old fingers were up to that with the deck in place.

