

Using the Lower Forestays

This article was written by David Godfrey.

It was extracted from the 1997 Paper Tiger Catamaran Tuning Manual.

Primarily the lower forestays are designed to support the middle of the mast when sailing in heavy breezes on a broad reach or on a run. There are several methods of supporting the mast that are currently in use that all do basically the same thing. I suggest that if you do not have an adjustable system then you look around and find one that best meets your needs. The system should be simple and easily accessible while sailing. A method of calibration also needs to be incorporated so that settings can be repeated throughout the race. Usually a 3:1 purchase is sufficient, however, many top skippers are presently using higher purchase systems (such as 6:1). The extra purchase is used to alter sail shape, which is a topic that will be covered later in this article.

Prevent that mast from breaking

This is the most important use of the lower forestays. If the wind strength exceeds twenty knots then the lower forestays should be pulled on firmly to hold the centre of the mast straight when broad reaching and running. Take caution not to over tighten these front lower stays. Over tightening will excessively bend the mast, which effectively lowers the upper hounds and loosens the upper stays. Consequently, the top of the mast is left without a lot of support and the risk of a breakage to the top portion of the mast is greatly increased. If the centre of the mast is held straight the top will tend to flick forward in response to the bigger gusts of wind. This can be controlled to some extent by using a great deal of vang tension and even mainsheet tension to support the top of the mast. Many skippers tighten their back upper stays when the wind is very strong as a precautionary measure to preserve the mast.

Using the lower forestays to change sail shape

The tightening of the lower forestays primarily does three things. Firstly, it flattens the sail (less camber), secondly, it will cause the drive to move further aft, and thirdly, it will free up the leech.

While on the beach set up your sail with the lower forestays slack, then watch what happens to the camber and the leech as you tighten and loosen the front lowers. Generally the maximum draft (drive) for a Paper Tiger sail is around 40 - 45 percent from the luff for upwind sailing, while for shy reaching the drive needs to be around 30 percent. Therefore, it is possible to set up a slightly fuller sail ideal for reaching and then by using the lower forestays simply move the drive back for upwind.

As with all sail adjustments, a good set of telltales placed on the sail will help you determine the amount of adjustment required. I like them placed at 33 percent and 66 percent across the sail with a set in line with the lower hounds. This gives you the most information about the tension required on the lower forestay. If the windward telltale is not flowing and the leeward telltale is flowing, then the sail is too full. Conversely, if the leeward telltale is not flowing and the windward one is, then let the lowers off a bit.

The best way to learn how to use your lower forestays is to simply go out on the water and try fiddling. This can be done by yourself (ie. what feels best), however, more efficient methods of obtaining settings would involve either a two boat tuning session or a race. Remember to record the setting that appeared to be quick on that day and try these again the next time you sail.

For assistance with your Paper Tiger Catamaran, or suggestions for this or other Guides, please contact the
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