

Rig Tuning Procedure For Rhodes 22

The 1st thing you want to do is measure the length of the forestay on center from pin-to-pin. On my 1976, standard mainsail, Rhodes 22, this measurement is 333-5/8 inches. Write this number down because it is very important. If your forestay length is more than a couple of inches different than this, you might want to reset it to 333-5/8 inches as a reasonable starting point.

Now step the mast. Take the excess slack out of the forestay & backstays with the backstay adjuster. You don't want things real tight at this point. All upper & lower sidestays should be slack. Go to the base of the mast, pull a halyard taut along the mast & sight up the mast from the rear & from the side. Any deviation from a straight mast will show up as a gap between the mast & the halyard. There should be no observable bend or bowing in the mast. If there is, the mast may have been dropped & bent at some point or may have some other problem. You should call Stan at GBI & he will be able to help you work out your problem.

I like to use a Loo's tension gage. The model 91 is the appropriate range for the Rhodes 22. Remember to always measure the tension at the same relative position on each shroud every time. On Dynamic Equilibrium, I have marked these measurement points with little spots of paint on the wire right at my eye level.

The upper sidestays are adjusted next. Raise a tape measure up the mast on a halyard. Measure to the same point on each side of the boat. I like to use the edge of the toerail right next to the sidestay. Tighten the turnbuckles a little at a time on each side to adjust the upper sidestays until both sides are the same length +/- 1/4" & tensioned to approximately 300 lbs +/- 5%. This procedure assures the top of the mast is centered in the boat & the upper sidestays are tensioned equally port & starboard.

What you do next depends upon whether your boat has the IMF mainsail or a conventional mainsail.

On an IMF mainsail boat, I would adjust the 4 lower sidestays so they were all approximately the same tension. I would start with approximately 200 lbs +/- 5% on all 4 lowers. This is not a lot of shroud tension. Check for mast straightness with the halyard again. You want the mast to be straight in order for the IMF furling mechanism inside of it to be able to turn without binding &/or excessive wear on the bearings. Minor bending or bowing can be taken out with the lower sidestays. However, I would call Stan at GBI if I couldn't get the mast to straighten out with a difference of about +/- 15% on lower sidestay tension.

My Rhodes 22 has a conventional mainsail. I have a very roachy fully battened mainsail which has been cut to respond to mast bend. I have my backstay adjuster set-up to adjust

quickly from the cockpit with calibration marks on the line.

Tighten the turnbuckles equally & a little a time on each side to keep things reasonably centered. I adjust the forward lower sidestays to 400 lbs +/- 5% of tension, and the aft lower sidestays to 200 lbs +/- 5% of tension. Then, check for mast straightness with the halyard. Believe it or not, the standard mast on the Rhodes 22 is such a stiff telephone pole that, at 200 lbs differential tension on the lowers, there will be a barely detectable fore/aft bend in the mast with no sails set & the backstay adjuster slack. At 400 lbs of tension on the lower forward sidestays, when the backstay adjuster is tensioned, primarily only the upper half of the mast is pulled towards the stern. The forestay is tightened & the mast is bent at the same time. Both actions are exactly what you want to obtain proper sail shape in a high wind situation.

Now go out sailing. On a close hauled course, put up enough sail to heel the boat over about 15-20 deg. Make certain the rudder blade & centerboard are all the way down. On my Rhodes 22, the above tension settings cause the mast to remain straight & more or less centered in the boat. The primary thing to check is the upper sidestays. On my Rhodes 22 with the above unloaded tension settings, at 15-20 deg of heel, the windward upper sidestay should have about 450 lbs tension & the leeward upper sidestay should have about 150 lbs of tension. I have my upper sidestays set-up such that the leeward upper sidestay tension drops to 0 lbs at about 30 degrees of heel. At this point, the windward upper sidestay will be under about 600 lbs tension. Note, normally the stays are set-up to give proper shroud tension & the correct amount of weather helm with full sail set. This tends to limit the weather window in which you can do this sort of tuning.

When all sails are properly trimmed & the boat is "in the groove", there should only a slight amount of weather helm. If there is a huge weather helm, or neutral, or lee helm; then, you need to adjust the rake angle of the mast. If you have neutral or lee helm; then increase the forestay length. To get rid of excessive weather helm, shorten the forestay. The balance of the boat is very sensitive to this mast rake angle, so change it in increments of about 1/2" at a time. Note, a slight amount of weather helm is desirable because it provides feedback to the helmsman, thus allowing him to steer a better course. Excessive weather helm tends to tire the helmsman out.

Once I'm happy, I lock the adjustment in place by taping the lock nuts on the turnbuckles. I find I only need to do this adjustment once. The Rhodes 22 is such a strongly built little boat that nothing ever seems to stretch or bend. I do check the side-to-side upper sidestay length at the beginning of every season; but, it's never changed in the 13+ seasons I've been measuring it. Trailering set-up only involves adjusting the lower sidestays since the rest are not disturbed.

As far as rig tension settings on the trailer vs. off the trailer, I've found the only rig tension adjustment that significantly changes is the backstay tension. You can set the

tension on the rest of the standing rigging according to the above procedure on the trailer as long as the boat & trailer are reasonably level. It will be very close to optimum when you get the boat in the water, certainly good enough to do the on-the-water fine tuning described above.

FYI, I slack off on the backstay tension when Dynamic Equilibrium is not being sailed. As I mentioned above, the backstay adjuster has sufficient power to affect the shape of the hull. Greatly exaggerated, imagine the ends of the hull being pulled upward like a 22 foot long banana when the backstay adjuster is tight! There is no sense leaving the hull & rig under that kind of stress when the boat is not being sailed.

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