

Swordsailing Tips

<http://www.gp14.iinet.net.au/SwordSailing%20Tips.doc>

GP 14

Tuning guide layout

This tuning guide is divided into 3 sections, the parts which must be completed *before* the mast is stepped, those which can only be done once the mast is *up*, and the controls which will make a difference *on the water*.

Other factors

The optimum combined crew weight for a GP14 is 22 - 24 stone. Any lighter, and you will be guaranteed speed in light and medium conditions, but it will be hard work, and you may not get round the course in a breeze! Heavier weights than this will often struggle for speed in anything other than a big breeze, and will especially suffer in choppy conditions.

One thing that will definitely make you go faster is an enjoyment of sitting out, discomfort and pain! Unfortunately, there is no way round this. Sorry!

BEFORE STEPPING THE MAST.

Centreboard position

Make sure your centreboard is as big as allowed in the rules, and that it is as stiff as possible. The bolt should be positioned in the **middle** of the tolerances fore and aft, and as **low** down as possible.

The hole in the centreboard should be positioned as high up as possible, and in the middle fore and aft. If you want to adjust the amount of weather helm, move the hole in the centreboard, allowing the board to sit further forward for more weather helm, and further back in the boat for a more balanced feel. I would recommend carrying out this alteration rather than changing the mast rake or heel position.

Genoa fairlead position

Position the fairleads as far **inboard** as possible. The GP has a sheeting angle which is much too wide!

Mast foot position

There should be two bands painted on the floor adjacent to the mast step in series II boats, representing the furthest forward and aft positions of the mast foot. Use these to position the foot in the **middle** of the tolerances.

Spreaders

Make sure the spreader bracket is firmly attached to the mast, and that the spreaders do not "wobble" when the pins are in. This may require some DIY, as most spreaders have bad fore and aft play in them. Mine

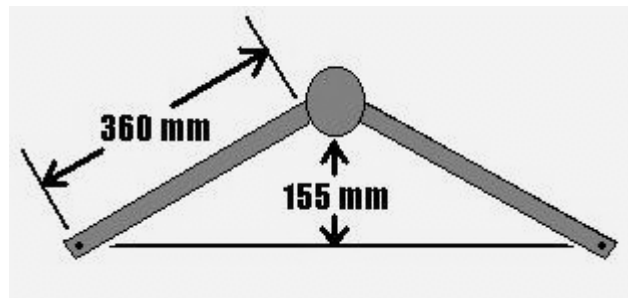
have nails jammed down the brackets to stop this movement, but you should be able to think of a better solution than that!

- Deflection

155 mm measured from back face of mast to straight line between shrouds. This remains the same for all crew weights and wind strengths.

- Length

360 mm from side wall of mast to each shroud. Heavy teams should increase this to 370 mm, and light teams should decrease to 350mm, but you may have to adjust the angle of the spreaders to keep the deflection at 155 mm.



Action

Now step the mast.

Attach the shrouds so the mast is about half way out of the gate to begin with. This will give a good starting point for finding the correct rake.

Attach the genoa, shackling the tack eye directly to the bow fitting.

WITH MAST UP.

Rig Tension

Pull rig tension on to **400 lbs** measured on the shroud. This is 30 on a SuperSpar gauge.

In heavy airs, increase rig tension to about **450 lbs** to minimise headstay sag, and in light airs, reduce tension to about **350 lbs**. In light airs and choppy water, reduce even further to about 300 lbs.

On older boats, it may be wise to use lower tensions all the time, as some Series I boats have fairly weak mast step areas compared to new Series II boats, and may not be able to deal with the higher loads.

Mast rake

21'10" from the mast head to the top middle of the transom. To measure this accurately, hoist a long tape measure up to the top of the mast on the main halyard, to the point where the tape reads 18' exactly when placed on the top edge of the lower black band. This ensures an accurate reading every time. Then cleat the halyard off and swing the tape out to the transom to take the reading.

Always measure the mast rake with 400 lbs of rig tension on, to ensure consistent readings.

Achieving the correct rake is largely a matter of trial and error. Let off the rig tension and adjust the shroud lengths at the chainplates to alter rake. Be sure to pull the rig tension back on to 400 lbs before re-measuring.

Mast side to side

When the rake is correct, check that the mast is upright in the boat by measuring from the masthead down to both top corners of the transom, and ensuring the reading is the same on both sides.

If it is not, you will need to adjust one shroud only, to pull the mast into the centre. This could be caused by unequal length shrouds or having the chainplates at different heights on either side of the boat.

If, with the mast tip an equal distance from each corner of the transom, the mast is pushing against one side of the deck slot more than the other, or the mast is bent side to side, the most probable cause is that the mast step is not in the centre of the boat.

Look at genoa clew height

With the mast now upright, raked at 21'10", and rig tension at 400 lbs, the genoa clew should end up about 2 inches above the fairlead when sheeted in.

If it does not, then re - check all the previous measurements. If these are correct, then the most probable cause is that you have an unusually shaped boat!

The GP is not a one - design boat, and there are many different shaped decks around. It is a unique problem in building sails for GP 14s, that the genoa clew has to fit snugly next to the fairlead, yet everyone's boats are different! If our standard leech length genoa does not fit your boat, and all the rig measurements are right, then we can swap your unused genoa for one with a different leech length.

Main halyard

Pull the mainsail up to the black band. There should be horizontal creases in the mainsail luff area coming "out" of the mast, i.e. no tension on the mainsail luff. If these creases are not present, or worse still, there is a vertical crease running up the sail just behind the mast, then there is too much halyard tension. Ease the halyard until the horizontal creases appear. It is better to have too little halyard tension than too much, as the cunningham can be used to take up any slack if necessary.

ON THE WATER CONTROLS.

Genoa sheet

Pull the genoa sheet as hard as possible in all but the lightest winds. Over a force three, it will probably need both helm and crew pulling together.

As the wind drops, ease the sheet to keep the leech of the genoa one inch off the shroud at just below spreader height.

In fluky conditions it pays to ease the genoa quickly into a lift, trimming it back in slowly as the helm luffs up. As the genoa is such a big, flat sail, it can easily stall out when presented with a lift, and this will affect the boat's performance a lot.

Kicker

Play the kicker constantly (adjust every 10 - 30 seconds) upwind, aiming to keep the back half of the top batten parallel with the boom. This rule applies in all wind strengths.

Mainsheet

The best mainsheet system is the one almost universally used now in the GP fleet, with the rope split to either corner of the transom and led along the boom to a centre block.

Adjust the mainsheet constantly to keep the boat level. With the system mentioned above, the boom can come all the way into the centreline if necessary, without the leech being over - tensioned.

Mast chocks

In all but the lightest winds, use maximum chocks **in front** of the mast. This should result in pre-bend of about 3/4" in the dinghy park, but obviously the mast bend will increase whilst sailing, relative to the wind strength, due to the leech tension in the mainsail pulling the top of the mast back. Chocking the mast back simply aims to reduce the bend as much as possible.

In light airs, the mast will need help to bend, so the number of chocks in front of the mast can be reduced, or chocks added **behind** the mast if necessary.

Cunningham

Do not use any cunningham until about force 4. As the wind rises above this, pull on cunningham to remove the creases behind the mast, and pull the draft forward in the sail.

Outhaul

The foot of the mainsail should be straight all the time when beating. Pull the outhaul just tight enough to achieve this. On a reach, ease the Outhaul about 2".

Centreboard

Push the centreboard down until the leading edge is just forward of vertical when beating up to about force 3. In a force 4, raise the handle

about 1", so the board is vertical, and beyond this, raise the board until the leading edge is raked aft a maximum of about 30° in a huge breeze.

Conclusion

Working through the above process is highly recommended, and will give you a good knowledge of how your boat is set up.

The rig settings should give you good all round boat speed, as long as the hull shape, weight etc. are correct. If you still struggle for speed after completing the above tuning process, then it is more likely that the reason for this lies elsewhere, e.g. hull shape or condition.

All that now remains is to point the boat in the right direction!