

Doyle Sonar Tune and Trim Guide

Rig Tune

We recommend checking your shroud tuning before going sailing. Start by checking that the mast butt is between 920 – 930mm from the companionway sill. Check the rig tension with at least 1-inch of mast block behind the mast. Tension the upper shrouds to 275 pounds. To check that the mast is centered, hoist a steel tape measure on the jib halyard and measure to marks on each rail equidistant from the stem.

The next step is to take the slack out of the lowers so that the mast is straight side to side. From there you can ease the lowers a few turns each for light air knowing that they are at least even.

The headstay length should be between 25'11 and 26 feet. Check your headstay by measuring from the bearing surface of the T to the center of the pin.

Tuning before the start

Sailing before the start is the best time to evaluate your set up. Once you are in the starting area, it is a good idea to find another boat that you are familiar with to sail close hauled on both tacks. It is important to make sure when you're tuning up before the start that the entire crew is focused on the proper weight placement for racing trim. This will be your best opportunity to evaluate your boat speed and determine if you need to change something. It is also a good idea to immediately have someone monitor compass headings on each tack to determine lifts and headers while also evaluating boat speed.

We like to start by trimming in on the main and jib sheets with the boom at or above centerline and the leech of the jib trimmed about three inches from the tip of the spreader. The first thing to evaluate is your headstay sag and jib halyard tension. Start with a little scallop in the luff of the jib. If you feel as though your head stay is too tight and your backstay is slack, you will need to add another chock behind the mast. Typically, We sail with 1-½ inches of chock behind the mast in light air and you may find you'll want to add even more chock behind.

It is best to begin sailing in light air with a fairly saggy headstay and need to put a little tension on the backstay in order to take some of the pump out of the head stay. It is important to note that the more headstay sag you have the better you will point. We aim for 5 inches of headstay sag in light air. If you seem to have plenty of height and need more forward speed it could mean that your headstay is too loose and you should tighten your backstay a little bit. Remember that the backstay is really your fine tune headstay adjustment in light air because the aft blocks are keeping the headstay loose.

We find that too many Sonar sailors are sailing around in light air with their backstay bouncing around. If the backstay is bouncing around, then the entire rig is going to bounce around. The key is to have enough mast chock behind the mast in order for you to keep some back stay tension and still have a loose head stay. Trial and error is the best way to determine the correct amount of mast chocking for each set of conditions. This is why it is important to fiddle with these adjustments before the race so that you are optimized by the start.

After setting your mast blocking for light conditions, you'll find if you sight the mast that you could have from 2 to 3 inches of fore and aft pre-bend. It is a good idea to sight up the back of the mast while sailing to windward to set the tension of your lowers. ¾ inch of sideways sag at the spreaders is about right for light to medium conditions.

As the wind increases to over 15 knots the lowers should be tight enough to keep the mast in column. Remember if you take out a mast block from behind the mast as the breeze increases

your lowers will most likely need to be tightened a turn or more. You'll probably still want at least 1-inch of block behind the mast in heavier wind speeds.

Mainsail Trim

We find that once we have the mast blocking and lowers set for the wind speed, then the outhaul is the next best way to control the depth of the mainsail. The more pre-bend you are using the looser you'll need to have your outhaul in light air. This is why it is good to have another boat to tune with while you're making these adjustments. We like to sail in light air with the shelf foot open about 3 to 4 inches. The shelf foot should be closed in wind speeds 15 knots or higher.

We don't recommend using any cunningham in the mainsail until wind speeds are over 15 knots.

It is okay to set your traveler so that your boom is above centerline. It doesn't really matter if the clew ring is on or above centerline. What matters is if you have enough weather helm. I like to have a little pull on the tiller in light air so that the boat is trying to go to weather and I am trying to foot fast forward with the tell tales streaming straight back.

Once you have the mainsail controls adjusted to your liking, in very light air, 2-5 knots, we like to keep the leech tell tale at the top batten flying half of the time. Another good test of the correct amount of mainsheet tension in light air is that the top batten should line up with the boom straight fore and aft. Remember it is easier for the wind to flow around a flatter more open camber section than a full closed section in the light wind speeds.

Certainly, once the velocity picks up to 8 – 10 knots or more, you can get away with sheeting the mainsail harder and sailing with the top tell tale stalled most of the time and the batten hooked to weather in max power conditions. The reason this works as the wind speed increases is that there is enough force in the wind to bend around this more tortured shape without stalling. What you'll also find is that as you tension the mainsheet, as the wind speed builds from 6- 8- 10- knots and above, and the crew moves up on the rail, keeping the boat flat, that the mainsheet and leech tension now causes the back stay go slack and the headstay tightens. This is fine as long as the boat maintains top speed. It is best just to leave the back stay alone and set for the light spots so that when you ease the main out again, the slack goes out of the back stay which is set for the correct headstay sag for the lighter wind speeds. This is also why it is nice to have a reference mark inked onto your mainsheet so that you can repeat the fast setting at a later time.

In the heavier wind speeds over 15 knots we recommend leaving your traveler fixed on centerline and playing the mainsheet and backstay in the puffs. It is also a good idea to use a fair amount of vang tension as well so that the leech of the main does not twist too open when the mainsheet is eased in the puffs or reaching and running. We recommend setting your vang tension so that you have enough leech tension while reaching before the start so that you can accelerate off the line.

Jib Trim

It is nice to have marks on your spreaders three and six inches in from the tip. The outside mark is your best light air reference mark. The inside mark represents maximum trim in 10 knots and above while maintaining top speed. The leech telltale should fly all of the time.

Halyard Tension

Most Sonars are fitted with jib halyard fine tune deflectors. It's a good idea to place a mark on your halyard course and fine tune so that you can repeat the settings. As a general rule of thumb if you are sailing in light air with a lot of head stay sag, 4 – 6 inches, then you'll want to have a very loose halyard with some scallops in the luff of the jib. As the wind speed increases from 6 – 8 – 10 knots, the headstay becomes tighter due to increased mainsheet tension. The jib halyard should generally should be tightened to remove most of the scallops in the luff so that 12 knots you've taken virtually all of the slack out. Typically, when the wind speed is in the 5 – 10 knot

range you will need to ease the jib halyard fine tune after you tack, especially if you have tensioned it during the previous tack. This is because your apparent wind is less after the tack and the friction in the luff tabs is released during the tack.

Jib Leads

We generally like to set the jib leads so that the telltales break evenly at the top and bottom. Generally, we don't think you'll need to move the jib leads more than one or two holes back as the wind speed increases. The biggest reason for this is that you are tensioning the halyard as the windspeed increases, which is raising the clew at the same time.

Crew Weight

In light air we like to have the crew bunched forward in the cockpit as close to the bulkhead as possible. It is okay to sail the boat reasonably flat in light air upwind as long as you have enough helm. The more you heel the boat the more you will generate windward helm. Because of this, we like to sail with about 5 degrees of heel in the lighter windspeeds. As the wind speed increases you can sail flatter and still have helm. However, we always try to keep the crew weight forward in the cockpit for all wind speeds.

Roll Tacking

You will want to practice roll tacking with your crew before racing. This means that the mainsail trimmer should tack the traveler and the jib trimmer tack the jib while sitting on the old weather rail. The helmsman and the other crew members should then cross the boat together. In light air that may mean the crew just moves into the seat on the leeward side and forward even if the helmsman is the only person on the weather side. . You may want to position one crewmember in the center of the boat over the keel just aft of the companionway. Roll tacking and crew weight placement is critical to light air speed and performance.

Downwind

For starters, we generally recommend a bear away set with the pole to starboard in light air. Primarily because a gybe set is too abrupt a maneuver in light air. Save your fancy gybe sets for the windier races when the velocity will help accelerate your boat again after the 180 degree turn.

As a rule of thumb, the optimum gybe angle downwind in light air is the reciprocal of your upwind heading. In other words we like to use the boats still going upwind on port tack as a guide to which angle we should begin sailing downwind. In light air this is usually the best angle to sail. As the wind speed increases you can begin sailing lower as long as there is adequate pressure on the spinnaker.

When you first hoist start with your pole a few inches lower at the outboard end so that the spinnaker fills quicker. Also make sure the jib is eased around the mark so that it does not stall and blanket the spinnaker in the hoist. Lower the jib as soon as possible in light air, even if it drops in the water for a few seconds, since all the time it's up it is blanketing the spinnaker.

We generally don't bother to ease the outhaul downwind. We leave it in its upwind setting. The outhaul is a much more important upwind adjustment than downwind. If you do choose to move it make sure you have a reference mark on the tail so that you can get it back to the upwind setting.

Vang tension is critical down wind. Initially we set the vang tension for reaching around the starting line so that we have leech tension when we are trying to accelerate off the starting line. Most likely you will need to ease it once you begin the first downwind leg. We try to keep the leech telltale flying as we do upwind. If the leech telltale is stalled try easing the mainsheet and vang until you achieve some flow off the top batten. In real light air the weight of the boom

will generally close the leech down. Naturally, you want a bit of slack in the vang in this condition so that the main will perhaps open up a bit when you are gybing at 90 degree angles with the apparent wind direction about abeam.

We like to heel the boat about 5 degrees in very light air downwind as well since it helps keep the spinnaker away from the mainsail and may reduce some wetted surface. Once the wind speed is over 5 knots you can flatten the boat out since the pole will just then begin to come back off the headstay.

Make sure the leeward twing is off in light air. Once the wind speed reaches 12 knots you can set the twings up about 15 inches and leave them from gybe to gybe since the pole is squared back and the clew of the spinnaker is near the headstay.

When you hoist the jib to prepare to round the leeward mark, make sure the sheets are eased all of the way so that if anything the jib goes up luffing. If the jib is over trimmed at all then it will disrupt the flow over the spinnaker and cause it to collapse.

Good luck with your Doyle/Curtis Sonar Sails.

If you need any help please call Dave or Jud at the loft.

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