

## Trimming your Headsails

Quantum Sail's expert David Flynn explains how you can get the most out your cruising headsail with the right trim.

By DAVID FLYNN    MAY 27, 2016

Much like mainsails, proper sail trim isn't difficult. Again, you need is to understand how each control line works and what you're trying to accomplish. When trimming your headsail, here's what you need to know:

### Hoist

Hoist your sail with minimum halyard tension then sheet the sail appropriately for the point of sail. With the sail now loaded, tension the halyard just enough to remove any horizontal wrinkles emanating from the luff (wrinkles will be at right angles to the luff).

In light apparent wind velocity, you can leave just a hint of wrinkles. As velocity increases, wrinkles will reappear and additional halyard tension will be needed. Avoid over tensioning. A vertical wrinkle, or "gutter," parallel to the luff is a sign of too much halyard tension.

### Halyard (Luff Tension)

Ease the sheet when adding halyard tension. There is no point in fighting a fully loaded sail. Also, as the luff is tensioned, the sail's leech will be pulled in towards the rig, creating an over-sheeted condition and potentially bringing the sail into contact with the spreader tip.

Adding halyard tension pulls sail material (hence draft or camber) forward. This makes the entry more round, the steering groove wider and more forgiving, and flattens the aft sections of the sail, which reduces heel and interference with the mainsail. In windy or wavy conditions, this is desirable.

Less luff tension (just the beginning of horizontal wrinkles) creates a flatter entry and more powerful aft sections because fabric is allowed to drift back in the sail. This will help pointing if heel is not an issue. At the same time, it will make keeping the boat in the groove (i.e. keep the telltales flying) more difficult.

A sign of flat entry is when both telltales are agitated and seem to go off at the same time with very small changes in sailing angle. This can be an effective shape when trying to sail upwind in smooth water and light to moderate conditions.

For record keeping purposes, and as an aid in setting initial tension for conditions, mark halyards and use a numbered strip as reference.

## **Lead Position**

Fore and aft lead positions control headsail leech tension and foot depth. As a rough guide, set the lead so the sheet bisects the clew, applying approximately equal tension to leech and foot. (An imaginary line extending from the sheet up through the sail would hit the middle of the sail's luff.)

In an overlapping sail, the foot of the genoa will just touch the shrouds at the chain plates when the upper part of the sail is 1-2 inches off the top spreader. If the foot is still round and well off the chain plates when the sail is sheeted (so that the top touches the spreader), the lead is too far forward. Moving it aft will stretch the foot flat and open the leech.

Conversely, if the top of the sail is well off the rig when the foot touches the chain plates, the lead can go forward. This pulls down on the leech (increasing tension and bringing the top of the sail in closer to the rig), and makes the foot more round. When in doubt, it's better to have the lead too far aft when trying to sail upwind.

Another way to look at the problem is to check how evenly the sail luffs as you head up when sailing close-hauled. When the tension on the leech allows it to twist open properly, the sail will luff almost simultaneously at every height along the leading edge. If the top telltale luffs more than a split second before the bottom, the lead may be too far aft. The top of the sail should luff a little before the bottom. Move the lead forward to pull down on the clew, increasing leech tension and reducing twist. If the bottom of the sail luffs first, move the lead aft. This eases the tension on the leech, allowing the clew to rise and increasing twist.

To fine tune, keep in mind that within the normal range moving the lead forward adds power (full foot, minimal twist), and moving the lead aft de-powers the sail (flat foot, increased twist). As a rule of thumb, the lead moves aft from a normal position (4-8 inches) as the sail is sheeted harder with increased wind velocity. It moves forward (1-3 inches) from normal as the sail is eased in light conditions.

When reaching, the lead should follow the clew, moving outboard and somewhat forward as the sheet is eased (assuming the boat has inboard sheeting). A second sheet led to a block on the rail will do the job. The sail will not break evenly on a reach. The top will luff well before the bottom, and the bottom telltales may be stalled much of the time. Set the lead so the telltales in the middle of the sail break properly.

## **Headstay Sag (Backstay Tension)**

Headstay sag affects the overall depth of the headsail. More sag adds depth and makes the entry of the sail more round and more powerful. Use sag to create power in light to moderate conditions when you need heel and are trying to build speed. As the boat begins to heel too much, or when the boat is up to speed and you want to maximize upwind performance, reduce sag.

Headstay sag is controlled by backstay tension on masthead rigs and by running backstays on fractional rigs with in-line spreaders. On fractional rigs with swept spreaders, overall rig tension on the side shrouds controls headstay sag, and you won't need to make many adjustments on the fly.

To fine tune, have a system for marking the throw, or range, of your backstay. With a hydraulic system, a numbered batten works well. This is easier and more reliable than using the tension

readout on the hydraulic gauge. For split backstays, reference the distance of the squeezer to the stern pulpit.

## Sheet Tension

Sheet tension affects every characteristic of the sail. More than any other control, sheet tension will change substantially as wind velocity and sea state change.

On a reach, the golden rule applies: when in doubt, let it out. Ease until the sail begins to luff then trim just enough to stop luffing, or ease until the middle telltales flow straight aft. If the telltales hang down, or if the leeward telltale spins, the sail is over-trimmed.

For perfect trim on a reach, ease in every puff. Conversely, the sail will probably need to be trimmed in lulls. If the boat is overpowered in a puff, the sheet can be eased, allowing the sail to luff and spilling excess power.

How far the sail can be trimmed is a function of wind velocity and speed. Upwind, the goal is to bring the sail in as close to the rig as possible without slowing the boat too much. In general, the tighter the sail is sheeted, the better it will point but the slower it will go.

In more wind, the headsail can be trimmed tighter without slowing down. This will improve pointing. In less breeze, be careful not to over trim or the boat will not accelerate.

Keep in mind another fundamental rule of sail trim: speed first then point. Start with the headsail relatively eased and gradually trim harder once the boat is up to speed.

For overlapping headsails, the distance between the sail and the top spreader is a good reference. For non-overlapping headsails, install trim stripes at even increments from the tip. Trim the sail inside the spreader tip using the vertical leech and trim stripes as a reference.

Spreader length, genoa track location, and the efficiency of the boat's underbody all factor into how hard a headsail can be trimmed in a given condition. On higher performance boats, headsails can be trimmed harder without hurting speed.

## Telltails

Your headsail likely includes three sets of telltales spaced evenly along the lead edge of the sail to aid in trimming and driving. They help determine lead position while helping the trimmer know how far to ease on the reach.

Telltails are an important reference for steering upwind. Once the sail has been trimmed in as far as conditions allow, it's up to the helmsperson to keep the boat at the correct angle to the wind. For maximum power, the telltales should stream straight aft. If the outside telltale spins or hangs down, the helmsperson needs to head toward the wind. If the inside telltale lifts, you need to bear off slightly.

Learning and understanding these trimming techniques will help you get the most out of your headsail!

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