Ullman Tuning Guide

Overview
This tuning guide for the San Juan 21 will help you set-up your boat, mast, and sails for a variety of sailing conditions.

Boat & Mast Set-up
The set-up of your boat and mast is extremely important as the San Juan 21 has to develop leeward helm problems.

Mast Step
The mast step should be located in the maximum aft position allowed by the class. This measurement is 98 1/2 inches from the bow.

Spreader Length
The spreaders should be cut to the minimum length of 25 inches, measured from the side of the mast.

Mast Rake Measure
The mast rake by hosting a tape measure up on the main halyard to the black band at the top of the mast Pull the tape taut and make sure that the backstay adjuster is not on tight. Measure to the bottom of the transom on centerline. The rake measurement should be:
0 - 7 knots 27 ft. 8.5 in.
7+ knots 27 ft. 11 in.
Adjust headstay turnbuckle to achieve above lengthens.

Mast rake should be adjusted before launching and should be set to the day's expected conditions.

Rig Tension
The shrouds need to be adjusted to various conditions and when you adjust mast rake. As the mast is raked aft the shrouds will need to be tightened to take up the slack and visa versa when the mast is raked forward. You should also check to make sure that the mast is centered in the boat on a regular basis. To check this, take your tape measure on the main halyard and measure to the nub rail at the chainplates on both sides of the boat. The measurement should be the same on both sides. Adjust the upper and lower shrouds so the Port and Starboard measurements are equal and the mast is straight athwartships. Next tension the rig.

With a Loos gauge, check the tension on the upper and lower shrouds The rig should be set at:
Under 10 Knots 150 lbs. Upper and Lower Shrouds
Over 10 Knots 300 lbs. Upper and Lower Shrouds

After tensioning the rig, check again that the rig is centered and straight athwartships. Always use the same place to check your measurements. It is recommended that if you are unsure of the conditions you are going to be sailing in, average the settings and err to the loose side of the settings.

SAIL TRIM

Mainsail
The halyard setting should be so that the head of the mainsail is at the black band.

Light Air Set-up (0 - 7 Knots) Upwind
Backstay setting needs to be loose so as to not bend the mast, but tight enough to support the headstay allowing for 4" to 5" of sag (see Genoa set-up).

Outhaul eased so that there is 3" of depth to the sail at the boom, For very light conditions, trim the outhaul to the max (0 to 3 knots).

Cunningham loose. Draft of the sail should be at 45% aft of the luff. Ease halyard very slightly if necessary.

Traveler should be pulled to windward so that boom is on centerline.

Mainsheet trimmed so that the top batten is parallel with the boom or 2 degrees to windward of the boom. The top telltale should just stall when in point mode and stream when in speed mode. To get the top telltale to fly, ease the mainsheet In very light conditions, it may be difficult to get the top telltale to fly all the time. That's OK

Vang should be loose. Induce some heel in the boat by distributing crew weight.

Medium Air (~15 Knots) Upwind
Backstay tension needs to be increased as wind builds. The backstay bends the mast, flattening the sail and opening the top batten. It is necessary to adjust the mainsheet when the backstay is either eased or tightened. Usually, you ease or tighten the mainsheet when you ease or tighten the backstay. The backstay powers and depowers the sail by varying the depth of the sail. Also, look for 2" to 3" sag in the headstay.

Outhaul should be pulled out to the black band or so that the bottom of the sail is tight.

Cunningham will need to be adjusted to keep the max draft of the sail at 42% to 45% aft of the luff. This will also need adjustment as backstay tension varies.

Traveler positioned so that boom is on centerline. Ease it to leeward as the boat heels and as weather helm develops. The helm should be within a couple of degrees of centerline.

Mainsheet trimmed so that top batten is parallel with boom. Top telltale should be steaming easily. Ease the mainsheet slightly for control and speed.

Vang tightened so there is no slack

Hike the boat flat in the puffs.

MAINSAIL
Heavy Air (15+ Knots) Upwind
Backstay tension needs to be increased so that the top of the main has only 1.5" of depth at the upper batten (very flat).

Outhaul maximum

Cunningham pulled on so that max draft of the sail is 42% aft of the luff.

Traveler trim will vary as conditions change. Ease the traveler down in the puffs and pull it up in the lulls. The object is to keep the helm approximately in the center of the boat and the boat as flat as possible.

Mainsheet trimmed so that the top batten is outside of being parallel with the boom by several degrees. As the wind increases, it may be necessary to further ease the mainsheet to keep the boat under control. In any case, the main should not be "ragged" continually.

Vang should be tight.

Hike the boat hard, sad it as flat as possible!

Reaching and Running Tips
Ease Outhaul and Cunningham.

The most important and most overlooked adjustment off the wind is the vang. Adjust the vang so that the top batten is parallel with the boom or several degrees outside of parallel. The top telltale should stream on the reaches, it will not on the run. It is important that the vang be adjusted as conditions change, particularly as the wind lightens.

Mainsheet adjusted according to point of sail, just keeping the sail from luffing and the boat as flat as possible.

Light Air (0 - 7 Knots)
Upwind
Genoa
Genoa halyard tension eased so that the max daft is 45% to 47% aft of the luff and wrinkles along the luff are just removed. As the sail ages. halyard tension will vary to get the draft in the correct position.

Headstay sag should be 4" to 5" and is adjusted by trimming the backstay. Sight from the bottom of the headstay to the top (hounds) and estimate the depth of the sag.

Genoa Lead position is in the powered setting, allowing the bottom of the genoa to be full and the telltales to break evenly from top to bottom. (The sail should luff evenly when the boat is luffed.)

Genoa Sheet tension should be trimmed so the leech is about 1.5" from the tip of the spreader. In very light conditions, you may want to sheet out a light and drive the boat for max boat speed rather than pointing.

Jib
Trim jib leech to 18" from the mast along the spreader. Mark spreader with tape. Halyard not to tight.

Medium Cond (7-12 Knots)
Upwind
Halyard will need to be tightened to keep the wrinkles out of the luff and keep the craft at 42% to 45% aft of the luff.

Headstay sag should be kept at 2" to 3" by adjusting backstay.

Lead position may be moved aft an inch from powered setting, but the telltales should break evenly or the sail luff evenly from top to bottom. If the boat is getting overpowered consistently, move the lead aft more to twist the top of the sail, and depower. In the depowered mode, the top telltale will break first.

Sheet the genoa so that the leech of the sail is just touching the spreader for high point mode to 1.5" from the spreader tip in speed mode. If the lead has been moved aft to . depowered setting, the leach of the genoa should be 1.5" from the spreader. If overpowered, sheet out to 2" to 3" from the spreader.

Jib
Trim jib leech to 16" from mast along spreader. Mark on spreader. Halyard fairly tight.

Heavy Air (13+)
Upwind
All boats should be in jibs, ha yard tension tight, and leach trimmed 14" from the mast along the spreader. Keep the boat as flat as possible

Reaching Tips
Ease backstay to increase headstay sag. Move lead forward and have the a crew member hold the sheet outboard when broader reaching. Keep the boat as flat as possible. Ease the genoa halyard slightly but do not forget to reset it before going back to windward.

Conclusion
This tuning guide has been developed from input by the best San Juan 21 sailors. The recommendations are a starting point for optimizing your performance. We suggest experimenting with these settings to produce the best results in a specific condition. The very best tuning tip we can give you is to practice with another boat and try a variety of settings. If you have any questions about tuning, sail trim or boat speed, contact
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Sail FAST & Good Luck