



Flying Scot Racing Guide

Boat Preparation

The goal here is to have a boat that is fast, easy to sail and will not fail. Make sure the centerboard, rudder and bottom are smooth and clean. This will ensure good underwater flow. One critical boat prep issue is shimming the centerboard. On older boats, the centerboard is loose in the trunk and will shift back and forth, which is a big detriment to boat speed. Set up the deck layout so it is comfortable, functional and as simple as possible. This is very important so the crew can concentrate on the race and not have to think about the boat. You also want to make sure to have sails that are of current designs and not so worn that their designed shape is no longer functional.

Tuning the Rig

There are two goals when setting up your Flying Scot mast. Your Ullman Flying Scot sails are designed to a specific rake angle and forestay tension. Tuning the rig on your Scot should be a one-time procedure. Once you have it properly set be sure to mark the pin settings so that if you lower the mast it will be easy to get back to your proper settings.

To set the rake attach a metal tape measure to the main halyard shackle, and raise it until it is just about two blocked. The halyard shackle should leave the sheave at a fair angle to the transom with the swage sleeve just touching the sheave. It is possible to raise the halyard to the point that the shackle is sticking straight up, which is too high. Measure down to the hump in the middle of the aft deck where it turns down to the transom. This rake number should be within an inch of 28' 5". Forestay tension should be right around 100 pounds, plus or minus 10 pounds.

Sail Trim

Your Ullman Flying Scot sails are designed to be adjustable, which gives them a broad power range. In this guide, we use four wind ranges as references for four different states of sailing. These sailing states are affected by a number of variables, the biggest two being crew weight and sea state. In flat water, it is possible to sail without de-powering as quickly by feathering the boat in puffs. In choppy water, especially with a light crew, it is necessary to keep the boat moving by pointing low, which requires earlier de-powering of the sails. Essentially, medium air is the wind speed where both crew are hiking and the boat is moving nicely; heavy air is defined by a need to depower to keep the boat flat; and light air is a wind state when the boat is under-powered. All of these states will be slightly different depending on your sailing conditions so try to think about larger concepts rather than trying to copy exact control settings.

Upwind Mainsail Trim

Light Air: 0-4 Knots

The goal in these conditions is to keep the boat moving as fast as possible at all times. Speed is more important than pointing. You want to keep most controls eased to help promote flow over the sail. The Cunningham should be all the way off and the halyard should be loose enough that there are 12" horizontal wrinkles coming off the luff. The primary focus in these conditions is to keep the boat moving, so keeping an open leech is critical. Ease the sheet until the aft third of the top batten is parallel with the centerline of the boat. The boom will have to be eased out farther than you might think – often to the back corner of the transom. The outhaul should be eased about 3-4".

Light to Medium Air: 5-10 Knots

These are ideal wind conditions for the Scot. The boat should be sailed flat and powered up to maximize speed and pointing. The vang is off, Cunningham should be loose, outhaul is at about 2-3" from max on. The mainsheet should be tensioned enough to keep the top batten parallel with the boom. All crew should be hiking hard, especially in the puffs!

Medium to Heavy Air: 11-16 Knots

The Scot begins to get overpowered in this medium to heavy wind range, which can mean more heeling, weather helm, and a heavy feel on the helm. The goal is to keep the boat on its feet and to reduce leeway. The mainsail needs to be progressively flattened. Use the Cunningham to flatten the sail and keep the draft forward. Outhaul should be pretty tight – up to about 1" from max. You should put tension on the vang as soon as the boat begins to get overpowered and the sheet must be eased in the puffs to keep the boat flat. In these conditions, the vang controls twist (leech tension) and the mainsheet acts like a traveler moving the angle of attack of the mainsail in and out. The goal is still to have the top batten parallel to the boom in the lulls and open 5 to 10 degrees in the puffs. Crew should all be hiking hard.

Heavy Air: 17+ Knots

As above, the goal is to keep the boat on its feet and to reduce leeway. The outhaul does not go to full on until very heavy air or flat water – keeping some shape in the bottom of the sail gives the sail some power for going through chop and accelerating after a tack. The vang is on very tight in heavy air; in max vang conditions the boom will bend as much as 3". Be sure to ease vang before letting the mainsail out to sail downwind. In these conditions, the leech will be open 10 degrees or more even with a lot of vang on. Cunningham should be all the way on. In heavy air there will be a vertical crease just behind the luff that shows up downwind when the luff is tightened to the max. Crew should all be hiking as hard as they can stand.

Upwind Jib Trim

Light Air: 0-4 Knots

The goal in such light air is boat speed...keep it moving forward. Set the jib halyard so the luff has "crow's feet" wrinkles coming from each of the snaps. One idiosyncrasy of the Flying Scot is that the jib leads are too far outboard. To compensate for this, we "weather sheet" the lazy jib sheet to pull the clew closer to the centerline of the boat. The optimum athwart ship position for the jib clew is right over the middle of the seat. This

position for the clew is the same for all winds except the very lightest and heaviest. In drifting conditions when the sail is just hanging, do not weather sheet. Once the wind picks up to the point that the sail is flying, start applying some weather sheet. The goal continues to get clean air flow over the sails, so be careful not to close the slot by trimming too much with either sheet.

The top batten on the jib is the primary gauge for trimming the sail. Your Ullman jib has a stripe and a telltale on the top batten. The mainsail has a window that allows you to see the top batten without having to go to the low side. As the wind picks up to the point that the sail is flying, try to keep the wind flowing over the top batten. Keep the top batten angled outboard of parallel with the centerline of the boat and keep the telltale flying at all times when possible.

Light to Medium Air: 5-10 Knots

These conditions are maximum power and pointing conditions. Keep the halyard eased so there are slight luff wrinkles to maintain good pointing and power. Trim the weather sheet so that the clew is in line with the middle of the seat and keep it in that position. Trim the sheet so that the top batten is parallel with the centerline of the boat. The telltale on the top batten should be flowing at all times. In flat water it is possible to sheet so that the leech is slightly closed in from the parallel setting, which can be very fast but be sure the telltale never loses flow. If the tell tale ever stops flowing, ease the sheet until it does.

Medium to Heavy Air: 11-16 Knots

Jib trim does not change much in these conditions. Keep the clew over the center of the seat and keep the top telltale parallel with the centerline of the boat. In bigger puffs and chop, the sheet may need to be eased slightly to open the leech which will keep flow over the sail and keep the slot between main and jib open.

Heavy Air: 17+ Knots

In heavy air leave the weather sheet slack. The sheet should be tensioned to keep the top batten slightly open from parallel. In really heavy puffs the jib should be eased slightly at the same time as the main to de-power and keep the boat moving and flat. The goal in these conditions is to keep the boat as flat as possible and moving fast.

Downwind Mainsail and Jib Trim

The goal for downwind mainsail trim is dependent on the wind strength and direction. In light air and when reaching, the main should be trimmed to promote flow. Ease the vang until the top batten is parallel with the boom, and then adjust the main sheet to keep all of the telltales flowing. When running, in any winds above very light, the main should be eased all the way to the shrouds.

The jib stays up virtually all the time when sailing off the wind. The exception is that in very light winds we have found that taking the jib down allows the spinnaker to breathe and can be very fast – you just need to be sure to get the jib back up early enough to round the leeward mark cleanly. Trimming the jib with the spinnaker up is an exercise in moderation. Just trim it enough to keep it from flogging, and on reaches it is often possible to get flow over it for some added pull. Just don't over trim it or spend too much time fussing with it. The spinnaker is four times the size of the jib and has a much more powerful shape, so it should be receiving virtually all of the crew's attention.

Spinnaker Trim

The Flying Scot is a blast to sail downwind and rewards its crew for good spinnaker trim and crew work. The halyard should be kept 6" from full hoist at all times to increase projected area. Many crews put a double figure eight knot in the halyard so that it stops in this position every time.

Play the pole height and trim constantly. Set the pole height so that the spinnaker curls in the middle of the sail. If the pole is too high, the curl will be too low in the spinnaker; and if the pole is too low, the curl will be too high in the sail.

Play the guy to keep the pole perpendicular to the wind. A telltale on your topping lift is a handy visual tool for trimming the pole. The sheet should be adjusted constantly to keep the spinnaker on the verge of collapsing with a very slight luff curl. Remember, there is nothing slower than an over-trimmed spinnaker.

The trimmer and the skipper should be in constant communication while talking about wind pressure in the spinnaker. In the puffs, the skipper should bear off and the trimmer squares the pole back and eases the sheet. As the pressure eases or the wind lightens, the skipper heads up and the trimmer eases the pole forward while trimming the sheet. This should be a constant "S" course to maximize VMG downwind. If sailing three-up, the third crew should also be looking aft and helping the skipper keep the boat in the most wind velocity and clear air.

Crew Weight Placement

Upwind

The crew should sit as close together as possible fore and aft. This concentrates the weight and reduces the pitching of the boat. In medium wind, the skipper should sit with his aft hip in line with the mainsheet cleat. As the wind builds and you are sailing in de-power mode, the skipper (and crew) should move back. In heavy winds, the skipper should sit with their aft hip in line with the back of the centerboard trunk. The forward crew should sit together just forward of the skipper.

Weight placement athwart ship is critical. The goal is to keep the boat as flat as possible at all times. More than ten or fifteen degrees of heel is undesirable. In light air, the crew should sit on either side of the boat to keep the boat flat. The centerboard trunk cap is a good light-air seat as well. As the wind builds, the crew should all move to the high side as needed and hike as the wind builds. This is where the hiking line becomes critical to keep the crew weight as far outboard as possible.

Off the Wind

In light to medium wind, the skipper should sit just forward of the mainsheet cleat and on the windward side. The crew should sit just forward of the skipper and on either side of the boat to keep the boat flat or heeled slightly to windward. As the wind builds, the boat has a tendency to drag the bow – the skipper and crew should move aft to allow the bow to stay on top of the water. In planing conditions, everyone should move as far aft as necessary to keep the bow out of the water and promote planing. In heavy air planing, the skipper can be as far back as sitting on the aft deck with the crew at the back of the seat.