Settings and Techniques to Maximize Boat Speed (David Ames)

Wind Range 10-15 kts

In medium sailing conditions you no longer have to focus on promoting flow in the upper part of the main and jib. In 10-15 kts. the focus of your upwind technique should shift to trimming the jib and main to achieve the best VMG. Staying in phase with the wind shifts should become your highest priority in your tactical game even though sailing to find more pressure is important. Downwind you should focus on being on the headed jibe at the weather mark and then make the determination to sail high or low based on where you see the most pressure. The winning formula in these conditions is to sail the least amount of distance with the fewest boat handling maneuvers.

Halyard Tension – Similar to light wind conditions, the best way to judge halyard tension is to sail down wind and tighten the halyards until there are no wrinkles in the luff of the sails. When sailing upwind there should be some horizontal wrinkles in the main. In 10-15 kts. the jib halyard is tuned slightly tighter and the luff of the jib should have the slightest hint of a horizontal wrinkle. The outhaul should be tightened until you get a slight horizontal wrinkle in the foot of the sail. No main Cunningham yet.

Boat Heel – In 10-15 kts. I am going to divide the boat heel notes in upwind and downwind heel.

Up wind the bottom of the hull shape has the best aspect ratio when you are on a 7-10-degree leeward heel. The center board performs best when the boat is flat but that is at odds with the best wetted surface shape. **Determining the best heel (between flat and 7-10-degrees) depends on the amount of pressure you have in the sails.** If you are sailing in a 7-10 kt. lull you should be trying to building pressure in the rig by steering exactly to the tell tales and you want the boat to heel up due to excess pressure being built. By allowing the boat to load up and heel you will be able to generate helm and the boat will want to point which gives the best VMG and you will be able to hike out more and go faster. In situations where the wind is 10-13 kts. the pressure will build quickly and you will be hiking out and easing the main to prevent the boat from over heeling past 10 degrees. The problem with heeling too much is that the centerboard will begin to slip sideways and you will lose pointing upwind. The best technique is to steer to the telltales and make sure to **not get into a habit of pinching** and then manage the optimal heel of the boat with your mainsheet trim. Pinching will destabilize the flow in the sails and make the pressure unstable. Pinching to flatten the boat is biggest mistake I see in most sailor's techniques. **What is fast is once you have excess pressure is to steer at the upper range of the tell tales to where you are almost pinching, hike hard, and use the main sheet to keep the boat right in the 7-10-degree heel range.**

Down wind the bottom of the hull shape has the best aspect ratio when you are on a 7-degree leeward or weather heel and sailing the boat flat is slow in all wind ranges. Your decision to choose what heel is appropriate comes from the pressure in your sails. If your pressure is soft in your sails and you want to heat up your sailing angle the you should be on a leeward heel. If you have good pressure in your sails and you want to sail a lower angle to the mark then you should be on a weather heel. I will discuss all the different downwind techniques in a different section.

Sail Trim – When sailing upwind in 10-15 kts. the jib should be trimmed in until the upper tell tale on the leach is just about stalled. The foot of the jib is still the critical indicator for how tight the crew should trim in and the foot of the jib should be trimmed until a slight horizontal crease forms between the tack and foot of the jib. Trimming based on pressure is the main goal so if you are trying to build pressure make sure both sails are eased 1-2 inches and if you have good pressure be patient and only sheet in the last inch after the pressure has fully built and you are attempting to point. If you begin to become overpowered the crew can over trim the jib to help depower the rig and you will be able to point slightly higher which will help reduce over heeling.

The main should be trimmed to manage the heel of the boat. Remember in 7-10 kts. you are still trying to create pressure and heel to point and you will need to trim the main all the way in until the upper batten of the main is almost stalled. You can check the tell tale at the batten once in a while to see if you are over trimming and stalling. Once you are fully powered up in 12-15 kts. and hiking out you will need to begin easing the main to keep the ideal heel and you will start to add vang tension so that the upper part of the main does not twist too much. Vang sheeting will take power out of the main and help keep the boat from over heeling. Additionally, tightening the outhaul and dropping the main a click or two can help depower the main to help keep the boat at its optimum heel. **Do Not Pinch**.

Steering Technique – In 10- 15 kts. the wind flow and pressure built through the jib/main slot is dynamic which means that your steering angle will affect the amount of flow through the slot. The only difference from light winds is that stalling mainly occurs from over trimming. In order to accelerate from tacks and lulls, the **sails must be trimmed out about 1 inch from where they would be at top speed**. The skipper needs to steer so that **both telltales on the jib are flowing perfectly straight back** which will maximize the flow. Pressure will build very fast so you can trim in the main and jib in the final inch and begin pointing right away. If you feel that you have too much pressure just ease the main and vang sheet to keep the boat on the optimal heel.

Mark Roundings – At the weather mark you will pick your downwind strategy based on the lifted tack at the weather mark and you will decide on how to position compared to the other boats based on the incoming pressure. At the weather or offset mark there is an opportunity to increaser your boat speed as you sail from closed hauled through a tight reach and then to a downwind course. Most sailors just bear away and set and miss the best opportunity to set up a winning strategy for the down wind leg. Using the tight reach angle to increase your boat speed allows you to gain 2-3 boat lengths and then translate that boat speed into a position that can pass the boats that are immediately in front of you. To increase your boat speed, you need to remember that as you bear away from closed hauled to a tight reach that your sails will increase pressure and you need to hike out with the crew as you bear away. I like to move back a couple of inches and even pump the main as I bear away to get additional speed and then attack the boats in front of me and set the spinnaker.

Steering mechanics – Proper steering and trimming mechanics should use the minimum amount of energy and waste of motion. Remember to hold the tiller and main sheet close to your belly and keep your lower body further in than your shoulders. At the mark rounding's remember the sheeting and steering mechanics that we practiced to maximize speed through the roundings.