

Sailing with Keith

12:00 am on Aug 22nd 2006 peter

Notes on our outing with Keith Whittemore.

Aaron Koopman's comments are in italics.

Tuning

Mast position: The boat was designed with the keel too far aft. This means the center of effort of the sail plan is not in line with the center of resistance of the hull. That's why the mast needs to be shortened, and moved aft. Keith only uses the Loos gauge in two situations. The first is when the mast goes into the boat. Basically he gets the shrouds set up so there is a separation of 4 on the gauge; he starts at 21/17 (uppers/lowers) or 24/20. *The second situation is when it is blowing really hard and you want to get the shroud tension in the neighborhood of 34 on the outers (-4 or 31 on the inners) before you hit the water.*

When he got to the boat the first thing he did was sight the mast to determine which way the middle of the mast was bending. This is determined by sighting up both sides of the mainsail track. Ours was bending to port so he had me loosen the lower port shrouds 1/2 turn and tighten the starboard side.

In general all further adjustments are done such that the upper shrouds get two turns for every one on the lowers. He explained that this is because the uppers are basically twice as long. The 2:1 rule doesn't apply in either extremely light tuning or extremely heavy tuning, but it does for most situations. He felt like the initial tension on our shrouds was high (by feel) so I ended up giving the uppers a total of 5 turns to loosen and the lowers 2 1/2. They had been set up at 23/18 based on the Shore Sails guide.

He advised that we keep the facets of the turning nut squared off with the boat and to always do multiples of 1/2 turns. He suggested that only one person (usually the bowman) make the turns so there is no confusion on how many have gone on or come off. *Keith also said he puts turns on the backstay as the shrouds get tensioned. He has three positions marked on his backstay barrels for increasing wind conditions. He would probably let you take a look at his boat to make marks on your boat.*

On the Melges we have calibrated barrels so you can always make sure each side is even, and it helps from losing count of turns, which is easy to do in the heat of battle. We also write down the number of turns on/off.

Once we were out sailing and were on starboard tack we checked the port shrouds by feel (both Nate and I felt this). He found the lowers to be good but the uppers too tight. We adjusted the upper tension to match the lower tension by feel, and then applied the same number of turns to the upper shrouds on starboard. *He added that we should always do this in the lulls. It's easy to tighten up the rig with the sail controls but you can't loosen it past where the shrouds will let you.*

Approach

Tundra Rose leaves the dock at least a 1/2 hour before the first race on a Tuesday night, but at weekend regattas they aim to be at the starting line 1 hour before racing starts. They raise the spinnaker at least one time to make sure it's run properly. Go to weather to adjust the shrouds and get a feel for the wind (more on wind below). Get back to the start area 10 minutes before the start. Do a line sight. Luff up into the wind several times to gauge wind direction and to determine favored end (upwind end). His method for this is to point the boat into the wind. If the jib is up the bowman will gather the jib to keep it off the mast. The trimmer holds out his arms and points one hand at the committee boat and the other at the pin, making it easy to determine which way the boat is pointing: if it's pointing more towards the committee boat, the boat end is favored, more towards the pin, that end is favored.

Keith and crew will also do time/distance drills before racing starts. They will attempt to get to a mark (he used the little round buoy between the committee boat and the pin, which is the pin for the snipes by the way, as an example) in a given amount of time. This is a very important skill to develop for starting.

Wind

Keith gets an idea of median wind direction by noting the direction of tacks when sailing to weather before the race, by pointing head to wind several times in the moments prior to the start, and by watching other boats. I asked about compass and he steered me more in the direction of sighting objects on land and using these as reference. *This is easy to do on a small lake with shores on both sides and bridges at both ends. Keith also has a Tack Tic on the boat, which is better practice for new teams, rather than just memorizing Lake Washington land marks.*

Assuming that the windward marks is set roughly at the dominant (median) wind directions, if the wind is to the left of this we would want to be on port tack, to the right, we would want to be on starboard.

He described the wind on the lake as coming down from above and sort of splattering out in all directions. This means that when you see a puff to one side or the other of the boat, the new wind direction will probably be from that direction.

Lake Washington racing is basically puff racing. You can be 50 feet from your competitor and be sailing up to 15 degrees different headings in puffs, especially in Southerly winds. The winds come over the low spots of land between Leschi and Mount Baker area in Southerlies, and by the West end of 520 in Northerlies. When going North, you usually want to go West, tack, then get lifted up to the mark. But beware, go too far West and youâ€™ll run out of pressure. Keith never goes as far West as his tactician would like him to go.

When you are headed, tack. Now. (This is a sailing 101 rule of thumb, but like all rules there are times when it would not apply. There are many, many books and magazine articles on when to tack. Most of the time you are trying to balance Strategy, tactics, and risk/reward. I would recommend that one of you subscribe to Dave Dellenbaughâ€™s Speed and Smarts newsletter. Itâ€™s a very dense collection of racing advice/info.)

Trim

Basic jib/main and trimmer/helmsman interaction The trimmer sees the outside jib telltale lift, you've been lifted, he eases the sail just a bit to get the telltales flying. This also causes the main to out-power the jib and round the boat up slightly, which is exactly what the helmsman wants on a lift. The helmsman heads up a bit. The trimmer trims in.

On a header, the inside telltale lifts, the trimmer sheets in a bit. This causes the boat to have leeward helm and want to fall off which is exactly what the helmsman wants to do: fall off. One on the new course the trimmer eases the jib to perfect trim.

Keith called the aforementioned steps "the ideal in theory". In practice you can do this in light wind, but in moderate to heavy wind the puffs come and go too fast and you need the weight on the rail more than you need to change the jib setting.

Also, Keith feels that most J24 sailors sheet in too hard on the jib. He says to keep the jib 4-6 inches off the spreaders in even heavy wind, in light winds 8-10. Also, set the leads by

finding the point where the jib touches the chain plates and spreaders at the same time. This was about 2 holes back from where you had it. As with most boats you only use about 6" of jib track, once you find the sweet spot. We were able to find this no problem (in the past we haven't, correct?). Your spreaders are marked for 2" and 4", but based on Keith's trimming advice I would say put one at 6" and 8" also.

The jib halyard should have just enough tension to begin to take the scallops out of the luff. You should pull on the halyard until the scallops just go away, then ease the halyard just a tiny bit, so you just see scallops.

Main: The main is built with too much draft forward, because of the huge wind range the sail has to be ready for; 5-40 knots. So you need to prebend the mast or else the luff cut of the sail will not match the mast, which will pull the draft or knuckle forward even more.

When sailing you want all the tell tails to be flying at least most the time, especially the top one. In light wind this meant pulling the traveler to the upper bench for lots of twist. Also, because the boom is so heavy, Keith has someone lift the boom in light racing to keep the leach of the main from closing. Keith also said the rules allow only 4:1 max purchase on the main sheet. You were rigged for 5:1. He also recommended only 3:1 for light wind racing.

The spinnaker tack should be pulled all the way to the pole and the tack and clew should be pretty much at the same height. The pole should be as level as possible. He doesn't feel a pole that is tilted up is fast. His experience testing with Vince Brun is that Vince had his pole lower than Keith and was faster.

When sailing down wind the trimmer is constantly communicating with the helmsman to talk about pressure on the sail. If the pressure is good, the trimmer tells the helmsman to steer the boat downwind. If the pressure feels light, or there are waves, etc. the trimmer tells the helmsman to steer up. This is usually in increments of 2 to 5 degrees. "Up 2, down 2, up 5, down 5", etc. is how we have communicated in the past.

The most overlooked trim tool is crew weight. Crew weight can play a significant role in the balance and steering of the boat. The rudder is a boat brake, the more you use it the slower you will go. Too much crew weight too leeward and the boat will turn up wind (weather helm). Too much weight to windward and the boat will turn down wind (lee helm). The helmsman can tell when the weight placement is just right by the feel of the helm. He should be constantly communicating to the crew on weight placement. I asked him about the mushy feel I sensed on the boat a few weeks back. He said that was normal. So, if the

boat starts to head up, everyone needs to hike harder. If the boat is turning down, crew needs to move in a little bit.

Start

The jib goes up with 5 minutes to go. Keith likes to approach the line on port tack and find a hole to tack into. This gives him the ability to control the start better. He feels that the boats that sail off on port and come back on starboard are at the mercy of boats like him that can tack in at any time and luff them up above the line. He said the usual things about the importance of clear air and getting a nose ahead of everyone else.

Windward mark

Keith likes to slam in on port at the windward mark. *When you are leading, coming in on Starboard is fine. But when you are in the pack, "there is money to be made" coming in on port. I can explain a lot more in person but here are the basics in big fleets: Everyone but the starboard leader is slightly above the next guy on the layline so he isn't in bad air. After 5 or 6 boats there is a good boat length between their course and layline. If you come in on port you can find a hole (which usually requires you run down the starboard layline a bit) or you can tack underneath the overstood starboard tackers and make the mark. If they are not forced to luff to avoid you, you can tack right under them (outside the 3 b.l. circle) and they are powerless to stop you.*

When you do this you can set up the pole on the mast, tip on the deck so the only extra task on the hoist is to raise the pole after the tack.

When coming in on starboard with plenty of time to get the pole up, etc. The bowman attaches the pole to the mast and the mast man raises the pole and secures the guy (note that Keith likes to leave the topping lift attached, Aaron likes to leave the foreguy attached too). The bowman now goes to the mast for the hoist. The trimmer prepares the bag while the tactician goes to the spinnaker guy. He will handle this until the trimmer can take over. Tundra Rose doesn't pre-feed except to get the head of the spinnaker up and out of the bag. When the windward mark has passed to about the rear stanchion and Keith is sure that the spinnaker won't hit it as it's raised, he calls for the hoist. The bowman hauls as fast as possible, the trimmer eases the jib sheet just a little (one foot), but not so much that the jib gets in the way. Not much at all. When the spinnaker is flying and the tactician has pulled the tack back to the pole, the mast man eases the jib halyard 3" to help the spinnaker fill, and once the spinnaker fills, drops the jib to the deck. The bowman needs to

stay off the bow as much as possible. As soon as possible the bowman moves the jib to starboard for the leeward mark hoist.

Leeward mark

Ideally you douse on starboard tack. It sounds like even Tundra Rose doesn't like to douse on port. Approaching the mark, move the jib over to be ready for the port tack upwind, and set all of the upwind controls. Then raise the jib, steering down a bit and floating the spinnaker pole. It's not possible to float the pole on a reach which I believe we've tried before. So heading more on a run, the bowman releases the spinnaker pole while the tactician holds the guy out to compensate a bit for having no pole. The bowman gets the pole on the deck and under the jib sheets so the jib is clear to tack right away. The crew moves weight to the weather side of the boat to help bring the spinnaker to that side of the boat. As the spinnaker comes around the bowman releases the spinnaker and the tactician pulls the chute into the bag. When the pole is stowed, Keith's bowman leaves the topping lift attached and runs it through the jaws of the pole, like Aaron recommends.

Roll tacks

Lean on leeward rail to cause the boat to round up and tack, after the bow has crossed through the wind, transfer weight to new leeward rail to cause boat to stop turning and settle on new tack. Move weight back to new windward rail to flatten the boat. Three types of roll tacks that Keith will call: full roll, light roll, and no roll. In big wind no roll is necessary; it is best just to scurry to the new windward rail as fast as possible. *These take time to master, because the timing changes with different wind, sea, weight conditions, but they feel great when executed correctly.*

Helmsmen also participates in roll tacks. Standing up in the cockpit he leans toward leeward with the rest of the crew. He allows the crew weight to turn the boat to weather and come about. Keith said that tiller handle should never cross the vertical plane of locker sidewalls (easier to explain than write). This minimizes the braking effect that the rudder has. Once the boat has come about and new trim is set, the helmsmen crosses to the new windward side. Couple additional comments on helming:

- Helmsman to sit as far forward as possible, either straddling the jib winch or sitting forward of it
 - Helmsman and trimmer to work together to avoid over steering. It is better to call crew weight shifts and trim the sails appropriately vs. use the rudder (i.e. brake)
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Other

- Cheap diver every race. This makes a huge difference, even just after a week of sitting in the water. Real diver every third race!
 - Leave everything not necessary for sailing at the dock; fenders, lines, covers, porno, egos.
 - Practice, practice, practice. Specifically: mark roundings, time-distance drills, spinnaker trim down wind.
 - Self ratcheting jib blocks are a worthy investment.
 - We should install spinnaker cleats. Look at the other fast boats in the fleet to best position them.
 - Driver should be very far forward, everyone should. It gets the stern out of the water and reduces wetted surface drag.
 - He liked the way the boat felt and the way the sails looked. He said the main looked great. From the stiffness of the main it looks almost new. Because the main is more of a trimming sail, rather than a driving sail, itâ€™s the least often replaced. The spinnaker is good, if it still has some crinkle sound to it. Keith also said that the jib looks OK, (I think he was being kind), but that it was too flat, and you needed a fuller sail. Sometimes jibs can be recut to extend their life, but as they say â€œnothing goes to weather like money.”
 - Fix the jib/spinnaker halyard issue. The jib needs to come out of the lower center slot. Even if we had the jib on our actual jib halyard, that isn't good either. If the halyard isn't centered it has a different effect on the jib leach tension for each tack causing the sail trim to be asymmetrical. The spinnaker needs to be coming out of the upper mast slot again so the bowman can haul it up correctly. Keith recommended a turning block at the base of the mast for the jib halyard so that the bowman wouldn't have to crouch down to haul it up.
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