

Andy Horton Clinic - LCYC 5/20/09
Notes by Jim Turvey



- Rule for adjustments - do one thing at a time!
- Doyle Curtis Mains
- DC vs. AP mains - DC main is the deeper of the two
- Find a headstay length and keep it fixed
- Get 99% of what you need with mast butt and blocks and shroud tensions
- Chris Morgan
- Has it as tight as 46.5" (Andy - that's pretty short; tuning guide goes to 47.5")
- Andy
- Very hard to tell exactly where it is; all boats slightly different
- Set it for middle of range, see how it sails, maybe adjust it 2x per year
- Adjusted in Florida because they were heeling too much in puffs, had a lot of helm, healed a lot; in light air were trying to play all controls to get it going
- Made headstay a little longer, adding a little rake - twist to the sail; sail lower and faster; less helm in puffs; made a big difference
- If people have lower boom (having a little more effort ducking the boom when they tack), they are generally sailing with more rake
- Blocking
- More blocks behind => bends mast and loosens the headstay (more sag in jib)
- 3/4" is typical for light air; main flat, headstay sagged
- 90% of speed comes from getting mast blocks right (bigger issue than butt - that is maybe last 10%)
- Mast butt
- Chris Morgan
- Use mast butt to balance the luff curve - want it balanced from top to bottom of the main
- Don't want it too full at top and flat at bottom (would move mast butt forward in this case) or vice versa
- You are bending the mast around the point where it goes thru the deck
- 1/2-3/4" range originally in Doyle tuning guide; with AP main they go through 1/4-3/8" max
- Powlison - he uses 1/2" max range
- Anywhere the main is pointing to (with overbend wrinkles) - mast is bending too much there
- Blocks control from about 6 feet above the deck to the spreaders
- Butt controls from about 6 feet above the deck to the bottom of the sail
- Butt is for fine tuning; make sure the blocking is right first
- Headstay tension impacted by blocking also (and by backstay)
- If looking at sail and headstay isn't sagging enough, add blocks behind mast

- If looking at sail and headstay is sagging too much and starting to use backstay to counter it, remove blocks behind mast
- Generally want headstay tighter in breeze, looser when light
- Light air, put blocks behind mast, softer headstay - too leeward and back
- More powered up
- But: leech comes back into the mainsail (so you can definitely go too far; trick is to learn what's fast)

File: Horton Clinic 2009-05-26.lwp

- Went tighten headstay, jib gets a little more twist and a little flatter
- Use spreader to see where the headstay is, from normal sitting position; that's how he judges headstay sag
- Upper shrouds / Cap shrouds
- Andy doesn't think they do that much - set them and basically leave them; stay within the limits and do what the tuning guide says
- Chris Morgan:
 - But - be careful about doing it too tight - might get weird double-S curve you can't get out of with other controls; so in heavy air the leeward upper may be fairly loose
 - When you are in mid conditions (10-12) and you are on the rail hiking, expect the leeward upper shroud to just be getting a little loose
- Lower shrouds
 - These do a LOT per Andy; it impacts side bend more than fore/aft bend
 - 1 1/2" to leeward is the most Andy would let it sag, but that has a big effect (about 1/2 of the width of the mast) - 7-8 knots of breeze; more powerful sail
 - Be careful - leech of the main comes back to windward also at same time
 - May result in weather helm, which can be an issue - they were going high and slow in florida, couldn't go faster without letting main out and it wouldn't look right then
 - Found that when they tightened the lowers somewhat it brought the leech back toward leeward, reduced weather helm, and they took off (very fast)
 - But if you want to point more, that movement of the leech can help
 - When all hiking and mast is powered up (10-11 knots), want it straight (no leeward bend)
 - Morgan: 8-10, even up to 15, get it straight; don't even look at numbers, just sight the rig to set it
 - At 18 knots, Jud expects top to be tapering off to leeward a little
 - That would make the lower part of mast punch a little to windward to help it bend off at the top
- Spreader sweep
 - Tips just a little forward (say 1/2") is most common
 - Could also try pulling shrouds each 1 hole forward on the chain plate
 - In a breeze (i.e. Overpowered conditions, say 25 knots), jump the lowers forward ahead of the uppers on the chain plate
- Mainsail trick to flatten the head of the main
 - Problem he was trying to solve: top of the main too deep and hooked to windward too much
 - Put 2 battens in the uppermost batten slot; flattens out the front of the top of the main, pushes the leech out further
 - Experiment with battens - can put them in backwards (if soft in front and front of main is too deep, so the stiffer part is in the front)
 - Stiff battens in light air (even using multiple battens as above)
 - Medium air want fuller -> one relatively soft batten

- Heavy air - back to stiff batten
- Adjustments as the level of the breeze changes
- Racing, so can't touch the headstay or the butt

File: Horton Clinic 2009-05-26.lwp

- Mast blocking and lowers are about even in importance for adjustments, with mast blocking #1 and lowers close behind
- Mast blocking
- 5 knots - all blocks behind mast (e.g. 3/4")
- 6-7 knots - take out 1/4"
- 8-9 - take out another 1/4"
- No blocks behind the mast at 10-11 knots
- Lower Shrouds
- Range is from 1 1/2" bend to leeward for light air (6-8 knots) to straight for 10-16 knots, and then a little tighter above 16 knots (slightly to windward at 18 knots)
- Upper Shrouds
- 18 knots - 20 on PT-2 guage
- 6 knots - 16 on guage
- So between these two you're basically doing enough turns to cover the range (roughly 4 full turns)
- Wouldn't change the uppers upwind, only would do downwind
- In general, between 5 and 10 knots, Andy thinks we try to point too high, give up too much speed
- Running rigging
- Backstay
- 5 knots - little bit just to keep the mast from moving around
- As the breeze comes up, start to see jib sag, pull on a little backstay
- Traveler
- Drop traveller if a puff comes in
- Never below centerline
- If reaching too much, pull the traveler up a little
- When headstay is sagging to leeward, need to pull the leech of the main to windward to balance the leech of the jib
- If you don't do this, the jib/main not working together -> basically stalls
- When you start to pull the backstay on as the breeze comes up, the headstay tightens and sags less, pulls the leech of the jib to leeward, so then you'd be dropping the traveler to get the main leech to go to leeward also
- Outhaul
- Controls the bottom batten and everything below that (maybe up to the seam above that)
- General rule of thumb - want the leeches of the sails to match (in twist)
- Pull outhaul - straightens out lower leech
- Lower shroud is mid-leech control
- Above that - backstay, mainsheet, battens
- If there is flat water and boat is sailing straight (i.e. no boat pitching), can have a straight leech
- If rough, and need to steering through waves, boat needs to accelerate, need more twist in the sail (to make it more forgiving)
- Andy sets main up first, then get the jib to match it
- Jib tack

- In light air, can let it go up vertically; get scallops along the luff

File: Horton Clinic 2009-05-26.lwp

- Range can be 2-3 inches
- Very similar to moving the lead forward, sail will get deeper
- As it gets higher, sheet is more sensitive since its pulling straight down
- Can change jib tack without having to go down to the leeward side of boat to get jib sheet
- In heavy air, tack all the way down to the deck
- May actually move the lead a little forward in this condition and ease the jib a little to get a little twist to make the boat more forgiving if needed
- Jib sheet
- Play it a lot - all the time
- Fastest is just on the edge of stalling, but definitely never stalling
- Leech telltale just starts to bend to leeward before it stalls
- Watch the leech telltale
- Front telltale to make sure the lead is in the right position
- Want to make the entry right on the sail
- If too flat down low, the leeward telltale will be dead and the top of the sail may be luffing; so then need to move lead forward a little bit to make entry right
- After that don't use forward telltale at all, just sail by feel
- Then focus on leech telltale by the spreaders
- On his boat would have 2-3 leech telltales on the jib
- In a wave or after a tack, ease the jib a little bit to maintain speed (<2" on the sail; <4" on the lead if 2:1 blocked), then bring back in
- Generally we ease too much though, and if top of sail is luffing that's not providing any power - don't want to spend any significant amount of time like that
- Main sheet and backstay
- If pull on backstay, should also pull on the main
- Generally trying to achieve same mainsheet trim but a flatter main
- Example - pull 5" on backstay fine tune and 1" on main sheet
- Want the moving the top of the mast back, but want the boom in the same spot (easing the leech off in the sail)
- Pull tiller towards you, also pull on backstay
- Rudder is like a barn door - don't want to rely on it to move the boat alone should do it in concert with sails
- Do have to use the rudder to help it go faster than if just relied on backstay or other controls alone
- Also need to do the reverse - if east the backstay, ease the main too
- Sailing upwind from 8-16 knots, play the main and the backstay more than anything
- "Every time pull the tiller toward's me a little, pull backstay a little also"
- Only do this when the boat is a little powered up; not in lighter breeze
- Do need to use the rudder, but this really helps balance more than just using rudder
- Vang sheeting
- Affects front lower portion of mainsail (like the mast butt)
- Pulling the vang on, pushing boom forward and bending the mast in that area

- Etchells - don't tend to play the main / vang that much, but its something to try
File: Horton Clinic 2009-05-26.lwp

- However: be careful to let it off before going downwind (especially when you drop the mast forward!) - can break the boom
- Accelerating off the line
- Don't tack too close to start!
- E.g. 10 knots of breeze, shouldn't take within 30-35 seconds of the start
- It takes a long time to build to full speed!
- Start with traveler down
- Sail with deep angle upwind; "leaning on it"
- If do tack within 20 seconds, need to sail lower to get to speed faster
- 90% of it is getting right timing and angle to the start
- Practice timing - do 2 or three runs past the committee boat or the pin - guess how far you are - work on time and distance
- Goal is to be full speed or faster (faster than normal upwind speed) at the start (even more important than being right on the line)

File: Horton Clinic 2009-05-26.lwp