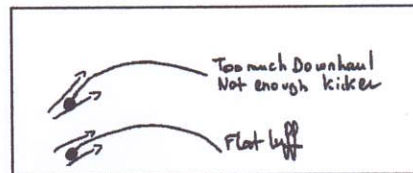


RCYC laser debrief (October double bill Thomas Chaix)

Techniques Light air (weekend 1, races...) : Key points

- Be smooth and gentle adjusting controls or changing direction (tack, Jibe...). Elephants are not fast!
- Flat sail are more efficient upwind than “spinnaker bags”. How to flatten a sail? Tight-ish outhaul, a slight amount of kicker.

- A flat luff to allow the wind to enter the sail easier. How to get a flat luff? Almost no Downhaul. You can accept a few horizontal creases.



- Tacking: be SLOW minimizing as much as you can the tiller movement. Remember that you are actually gaining very valuable ground to windward while you are tacking.



procedure. Get your shoulders out to heel the boat towards you (forget your topper-opy habits to heel to leeward first!) while you push the tiller to the corner of the cockpit at first. When the movement is induced, push the tiller slightly further (sometimes it is not even necessary) while you ease about 20-30 cm of mainsheet. When your bum is about to touch the water (when the gunwale is just about under

water), the boat should be tacked and it is time to give the boat a roll and put the tiller back to the centre in a gentle movement to avoid perturbation in the wake. The movement should be in one go!

Common mistakes seen: 1. sliding bum back which slows down the boat at a very early stage of the tack. 2. too much tiller movement inducing turbulences in the water and a “too fast tack”. 3. hanging on the leeward side on the new tack before giving the roll slowing the boat down before the actual acceleration.

- Position in the boat upwind should be comfortable enough as you have to keep still, be able to check your wind indicators and check what is happening around you. Body should be forward to avoid too much Drag.



You can accept a slight heel to leeward to keep pressure on centreboard and rudder, but NOT TOO MUCH. Try to steer with tiller extension on deck to avoid unnecessary tiller movement (more precise).

- Jybing : pull Loads of mainsheet on before going into the jybe. If it is light enough it is faster to do it from the boom block, then put a gentle flick as the boom comes to ensure that the sheet wont catch the stern of the boat. finally use a body pump to flatten the boat out with the tiller straight in the water.

Common mistakes seen: 1. Steering the boat too much through the jybe loosing ground to leeward and disturbing the water flow under the boat. 2. Not pulling enough sail in and getting it caught at the back. 3. Not rolling the boat enough missing the opportunity to pump the sail off the jybe (and getting it caught at the back)

- downwind (running) : The trick is to sail these "laser angles". Obviously waves are not the objective, speed is! Sailing by the lee is the key in lasers. Controls needs to be as loose as possible, heel the boat to windward and sit as far forward as possible. In the lull go more by the lee, in the gust make your way more towards the mark.

Common mistakes seen : 1. boom too far forward. 2. too far by the lee wasting ground. 3. sitting too far back.

Techniques breeze & waves (Monday Oct 23rd) : Key points

- Upwind, try to trim the boat with body weight and rudder so that the bow of the boat makes the least up and down movements though the waves, i.e. to reduce the pitching and slapping. It involves an investigation of hiking style, which links to trim with an analysis of the rudder and how it acts as a lifter or sinker of the bow.

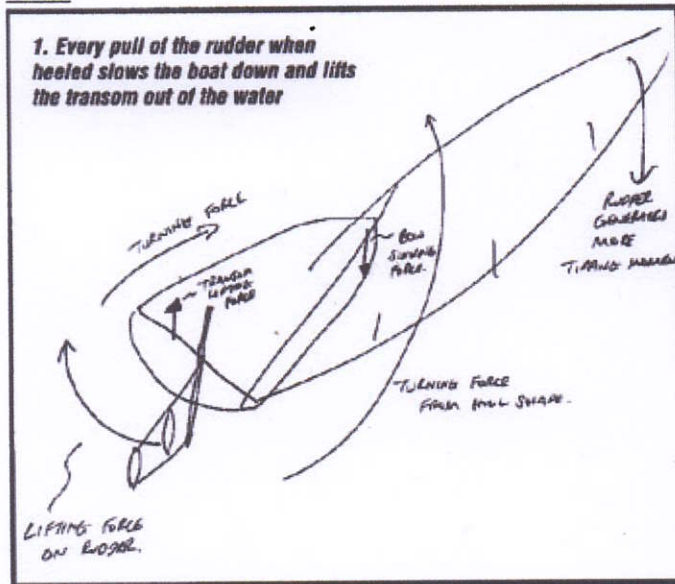


Hiking style

It might be worth a little read on hiking style (see Ben Ainslie or Paul Goodisson's books), but in brief it discussed the advantage of straighter leg hiking from the perspective of knee damage and hiking stamina. It argues that straight leg hiking reduces the load on the knee and that pointed toe hiking helped keep the knee straight. What it did not say is that it also increases the grip of the sailor on the deck of the boat and combined with tighter toes strap, it gives a good contact area with the boat, leading to good transmission of kinetics to the hull. That said,

perhaps a more important aspect that straight leg hiking improves is trim.

Trim

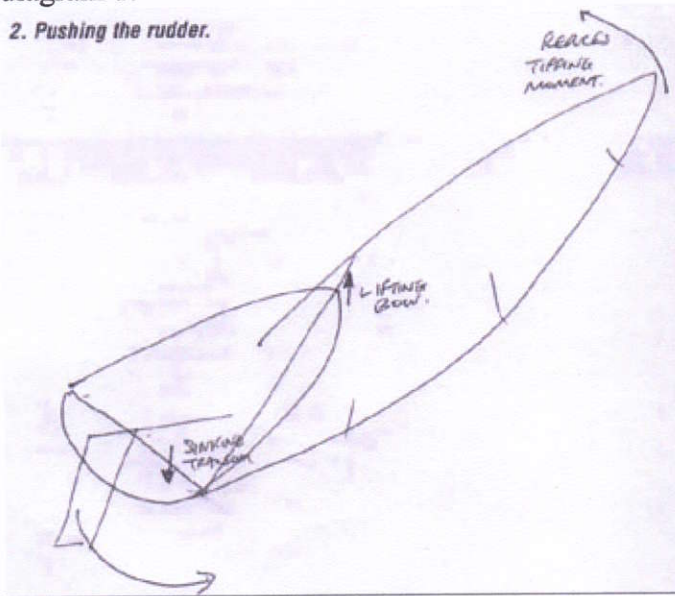


When bent leg hiking - sailors have a tendency to have to keep the boat heeled to stop their bum from hitting the water. This is done by bearing away in the lulls - when perhaps keeping the boat on the straight course might be more effective. In the gusts the boat has massive weather helm and the effort required to keep the boat from luffing is basically effort trying to stop the boat with the rudder. The more

the heel - the more the boat naturally wants to luff through the natural shape of the hull. So bum down is slow and harder work!

Every pull of the rudder when heeled slows the boat down and lifts the transom out of the water, burying the bow and making the boat heel even more - see the diagram 1.

2. Pushing the rudder.



Every push of the rudder will lift the bow/sink the transom and drive the back of the boat flat, relieving the pressure of the weather helm and reducing the conflict of the forces = speed and height (diagram 2). Obviously the hiking style becomes important again as if the sailor is drooped over the side, he will hit the water far too soon and reduce the tendency to want to push the rudder at all.

One important thing to take from this explanation is the effect of the rudder when heeled on the weight of the bow, pushing the rudder makes it lighter and pulling makes it heavier. Too droopy a bum and the push becomes unusable as the sailor hits the water.



The sailor tries to reduce the pitching moment of the bow by moving his/her weight back and forwards over the waves to remove their own weight from the pitching weight of the boat. The more active approach is that the sailor uses his/her weight to push the bow of the boat down or lift it up. In this case it is the stopping of the forward movement that throws the boat down and the stopping of the movement back that lifts the bow up. Again the hiking style makes a big difference to the amount of bow lifting or sinking possible. If the toe straps are loose, then I find that when I am trying to transmit to movement to the boat my legs only float around the cockpit rather

than transmit the movements to the boat.

- Downwind, the key is to keep the bow off the water. To achieve this, move back as the boat starts to plane and forwards the moment it starts to stop as well as finding angles.

Waves principle (debriefed after sailing) : Sailing downwind in waves is like skiing, it is faster downhill! It just means you don't want to be climbing the waves in front of you.

To be able to achieve going downhill all the time you need to understand the concepts of gaps within the crest of the waves in front of you, the concept of higher crest

(where you want to be surfing) and transition (going from one surf to another minimizing "slow time")

The main wave crest meets a secondary wave crest : it is a HIGHER CREST

The main wave crest meets a secondary wave trough : it is a GAP

The idea here is to maximise surfing, avoid ploughing into the next wave (higher crest) and use the gaps to move from a surf to another. To achieve this you will need to change direction making transitions from sailing by the lee to broad reaching. The faster you go, the more you can scout for gaps and find the bigger surfs.

Training advice:

1. look for the waves pattern and try to recognize the crest and gaps
2. practice transition by changing direction from sailing by the lee to a broad reach and vice versa... try to use your sail and your body weight instead of your rudder
3. combine both to execute transition in the gaps in order to maximize your speed downwind.

This debrief is highlighting points covered at debrief and sailing done on the water with the sailors that were in my group (especially on the breezy day when only my group actually experienced the waves)

Thomas Chaix
November 2010