# GROUND CONTROL

*Words* GUY CRIBB *Photos* GUY CRIBB INTUITION GUESTS INCLUDING OPENING SHOT BY LEVI TATHAM

**TUNING** – *part3*

Have you ever been on the water and found the wind picked up too much, or the water became too rough to stay in control? If so, this is another INtuition feature for you. On my courses when guests encounter these conditions, I've been known to set up a 'me barricade' on the beach preventing them from changing down a sail or board size until they have re-tuned their gear and tried again, developing their technique, tactics and tweaking in a real situation, rather than just reading about it in the magazine...

This INtuition Tuning series aims to provide you with the info you need to have the confidence to adopt a similar self-discipline before opting for the easy road out of changing down. Re-tuning is easier, faster and far more effective than you may of previously thought, and if you've been following this series, or my work in the last few years, you'll know if you are a freerider changing down, really it should be by about a minimum of a square metre – i.e., a 6.7m down to a 5.3m, not a 6.7m down to a 5.9m.

In the last couple of issues we've looked at correct downhaul settings *(Control Freak, August '12 edition)* and then boom height and outhaul relativity *(Double Shot, September '12 edition.)* This month we're going through mast track positions, relevant for everyone from beginners to experts, providing you with the confidence and a rough guide to make successful decisions.

Mast tracks are normally about 16cm long, however the range of position that the board is optimised for on any particular day is only around 6cm for intermediate to expert. So which 6cm is it, what will it effect, how the heck am I supposed to know, and why have they given me 16cm to play with if I only needed 6cm!? Part three of Guy Cribb INtuition's Tuning series reveals more surprising Pro tuning secrets.

# GUY CRIBB INTUITION

## MAST TRACK ADJUSTMENT

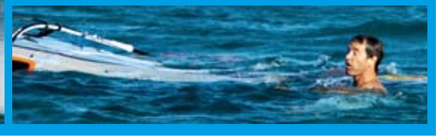
In windsurfing, two opposite ends of the board sensation spectrum are **liveliness** and **control**.

The **positive effects of liveliness** would be the freeride or race sensation when the whole board hovers above the surface like a flying machine riding predominantly on the fin. Or in freestyle or bump and jump, when the board is quick to take-off or turn sharply. In wave sailing it's when the board is 'snappy.'

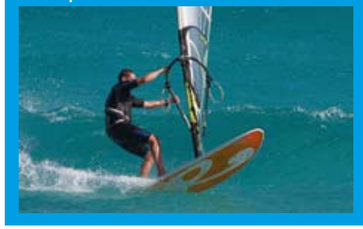
The **negative effects of liveliness** are when the nose of your board suddenly points to the clouds and you're experiencing impromptu colonic irrigation.

The positive effects of a board with more control are smoother turns – wave riding or gybing – and a softer sensation during the ride because the board is cutting through the water rather than bouncing over the surface.

Simon Chippa was brave enough to take my slalom gear for a blast in Prasonisi last year, but when he backed-off for a split second, the extremely lively board, set for speed in flat water, suddenly had a mind of its own and leapt into the sky ejecting Si to oblivion.



**Nose up...**



**Nose down...**

To improve your gybe or bottom turn, one tuning feature is to move your mast foot forwards, improving control and therefore the confidence to lean forwards into the turn.

But there are three further effects that adjusting the mast track position gives us –

## DIRECTIONAL STABILITY, BOOM HEIGHT & RIG RAKE

**Directional stability** (your board travelling in a straighter line) is better with the mast track further forwards and worse with it back.

The popular belief of moving the mast track further forwards to improve early planing is most relevant to freeride boards and freeride windsurfers (not experts on dedicated boards like wave or slalom who have alternative options to consider.) If free riding then if the board can go in a straighter line for longer, there is more chance it will start planing, rather than sinking the tail and swerving upwind.

If the board has too little directional stability it is likely to result in a catapult, which happens when the board suddenly changes speed or direction - this is usually initiated by a loss of rig control, but technically it is the change of board direction that causes the crash.

So, the less experienced you are the more Directional Stability you want - moving the mast track forwards.

**Boom Height** is affected by mast track position. Consider this: you are in a fixed place on your board in the footstraps. The boom is in your hands at an angle sloping downwards from mast end to clew end. If the mast track is moved forwards the boom becomes relatively lower in your hands.

The lower boom is better for control because it lowers the rider's body, increasing counterweight against the rig. The lower boom increases body weight onto your front foot too, that is closest to the rail, digging in the windward rail causing the board to slice through the water rather than scuttle over the top- providing a smoother but slower ride (slicing through chop on the rail is smoother than bouncing over the top.)

Furthermore if you angle the board on its windward side the wind will be blowing onto the deck, blowing the board down onto the surface, improving control rather than running the risk of wind getting under it and blowing it off course, potentially into a catapult...

So moving the mast track forwards lowers the boom which improves control especially in choppy water or overpowered winds. A lower boom does not improve early planing though.

So here we have the situation where on the one hand moving the track forwards improves directional stability and therefore early planing, but on the other it lowers the boom, ruining early planing. **In this respect, if you are moving the mast track forwards to improve early planing, you must firstly raise your boom height.**

If moving the mast track forwards for more control, do not adjust your boom height – it will automatically become lower furthering your control.

**Rig rake** is the angle that the rig rakes backwards. When you move the bottom of the mast (mast foot) further forwards, then the top of the sail naturally rakes back more. When you move the mast foot back the rig becomes more upright.

The further back the rig rakes the less mast foot pressure you have. The more vertical the mast is, the more natural mast foot pressure you have, which improves early planing.

Also, the more rake you put into any foil (sail/fin/seagull's wing/paper aeroplane) the less power it has, so raking a sail back lessens the power. In the good old days of long boarding we had mast tracks with a 60cm range of movement! If we put the track right forwards the sail would be so raked back and our directional stability would be so increased, we would never get overpowered. We therefore had a massive wind range for our boards and rigs.

So in theory a more vertical mast gives the sail more power than a raked back mast. So for early planing a more vertical mast is better... Which is why experts (who don't need to worry about directional stability) often bring their mast tracks back to improve power in the sail, making the board feel lively and therefore improve early planing. This is not the case for an intermediate where directional stability is of utmost importance. Which is one of the reasons why it is not possible to simply say 'putting the mast track forwards improves early planing'.

To simplify all this data and dilemmas, here's a rough guide for windsurfing gear manufactured since 2005.

*All mast track measurements below are from the centre of the mast track.*

**BEGINNER/INTERMEDIATE**
If you are learning how to use footstraps –
**Mast track:** forwards 5cm
= board goes in a straighter line.
**Boom height:** higher + 5cm
= earlier planing and making it easier to reach back to the footstraps.

**INTERMEDIATE**
If you are using footstraps and beginning to learn how to gybe –
**Mast track:** forwards 3cm
= more control, smoother turns.
**Boom height:** +3cm
= earlier planing.

**ADVANCED**
If you are getting a few gybes but losing control sometimes on entry –
**Mast track:** central or forwards 1cm
= more control
**Boom height:** no change

**EXPERT**
If you are an expert already gybing looking for more speed and thrills –
**Mast track:** back 3cm
= livelier board and potentially faster
**Boom height:** no change

**PROFESSIONAL**
Uber experts or pro's move the mast foot in 5mm adjustments and feel the effect.

## SEA STATE

All the tuning points I've said so far are applicable and cover a range of about 6cm of movement between intermediate to expert windsurfer, BUT the biggest influence on mast foot position is the sea state. In rougher water the mast foot needs to move forwards, in smoother water, it should move back. This is its primary function and why mast tracks are around 16cm long, not 6cm.

- In flat water, using INtuition's rough guide move your starting point 3cm further back than the middle of the mast track.
- In normal water*, use INtuition's rough guide with the mast foot in the middle.
- In rough water**, using INtuition's rough guide move your starting point 3cm further forwards of the middle.

**Normal water is open water (not a confined space) with a standard size chop- standard chop not affected by wind-against-tide, currents, refraction, reflection, waves or wakes – just bog-standard wind-blown chop rolling in from the same direction of the wind.*
***Rough water is choppy water, where your board is hitting the chop rather than riding along the grooves in between it. Rough water is caused with stronger winds or local effects like wind-against-tide or wave refraction.*

## MAST TRACK POSITIONS – THE ROUGH AND THE SMOOTH.

Slalom blasting in the perfect flat water of Prasonisi my mast track was right back so my board could literally ride on the fin with minimal friction for maximum speed.

Two weeks later I was sailing exactly the same equipment in the same wind speed racing against the Extreme 40s in the terribly choppy water of the Solent, and my mast track needed to be near the front – a 6cm change purely due to the sea state.

## DECISION TIME

There's loads of tuning tips like boom height and outhaul that need to be regularly tweaked throughout your windsurfing session, but as a general rule once the Pro has set their mast foot position after a few blasts it will stay there unless the sea state changes, for example if the wind gets up or the tide turns, which may not happen in your windsurfing session.

As I'm rigging up in the car park I'm already checking out the conditions and one of the decisions I will get 90% right before I hit the water is where my mast track should be. Then a couple of 5mm adjustments once I'm out there and I should be all set for a lively, yet controlled day on the water.

- If I'm slalom blasting I will pull the track back until I am riding on the very edge of control.
- If I'm wave riding I will edge it forwards for ultimate smoothness bottom turning (if it's mast high or gnarly it'll be going even further forwards!)
- If I'm free styling or jumping I'll edge it back for more pop.
- If it's mushy small onshore surf and I need to make snappier turns I'd bring it back, but if it got bigger or choppier so I was able to carry my speed through the turns, I'd move it forwards.

## BATTLE OF THE BULGE

The 'rocker line' is the banana shape of the board - the back half is basically flat then somewhere between the front footstraps and the mast track it curves upwards to the nose. The reason why seemingly small adjustments of the mast foot have massive effects on the board's behaviour is because the mast track is positioned directly over the part of the board where the flat rocker line becomes a curved rocker. So any adjustment will push more or less of the curved part of the board into the water. Curves cause drag, flat sections create speed - so when you're shifting from one to the other, there's a very noticeable change in the board's behaviour.

All boards have different rocker lines and I am not going to open this can of worms, suffice to say that you must experiment with your mast foot position.

The reason why I do not use a tape measure to help guests position their mast foot is because all boards are different, not just in length and their wide points, but in their rocker line and after a few decades of amazing R&D the manufacturers do place their mast tracks in the right place.

## SUMMARY

Next time you're rigging-up, check out the sea state: is it flat, normal or rough? This establishes your starting position - back, middle or forwards respectively. Then experiment with the rough guide to accurately position your mast foot for your requirements. Once in this ball park zone please adjust it as conditions change, the most relevant of which is if you become overpowered move it significantly forwards and realise you do not actually need to change down a sail after all. Any questions please email me guy@guycribb.com

*For a complete tuning guide please check out the Cribb Sheets at guycribb.com*

**Guy Cribb INtuition**
Windsurf Magazine's Technique Guru Guy Cribb is the world's leading windsurfing coach, multiple British Windsurfing Champ, runner-up in 5 world champs, former British Racing and Youth Coach and all round uber Pro. He runs windsurfing courses all over the world for your most radical development – please check out www.guycribb.com

*"Table for fifty please." INtuition's last night with all the staff in Prasonisi – the best restaurant in Rhodes, July 2012*