

Technical – bow down & send it

By Ian Dobson

A series of articles focussing on the technical aspects of the Fireball. This time round our current National and World Champion Ian Dobson explains the mystical ‘fast mode’...

Bow down and send it!

What does that even mean?!

Often referred to by many in the bar after a big day on the water, but frequently overused, misused or abused. So let's discuss in more detail about generating a fast [and high] mode sailing in a straight line upwind in more than, say, 14knts of wind. For simplicity, let's not focus on wind speeds of more than 22knts.

Firstly, the ‘Fast Mode’ is about improving velocity made good (VMG) not about reaching off to the cliffs. This comes from constantly playing between height and speed. One of the key aims could be to promote planing, which is what the knife edge terminology alludes to. In reality a Fireball sails in a ‘semi-planing mode’ and the aim is simply to increase boat speed through the water and reduce displacement drag without giving away too much height. The term “Bow Down” is too coarse a measure, and I would refrain from using it. Instead I like to say ‘leaning on the jib’ as I feel this communicates the level of subtlety and precision that is required. A measure for this could be instead of sailing with your lowest windward jib telltale lifting at an angle of 20 degrees to the horizontal, perhaps they might be between 10 degrees and horizontal. Generally speaking, a ‘horizontal telltale mode’ is only used to accelerate the boat, and therefore should only be maintained for a few seconds until a new steady velocity is achieved, from there we need to refocus our efforts on not giving away distance to windward. Do this by pulling the main sheet in, using the leach to arc the boat back upwind. When the boat is really trucking, this arc can be stretched out. We lean on the jib again at the point at which the boat starts to decelerate.

Next, ‘leaning on the jib’ is actually not high on the priority list. In fact, it is probably quite low down, as it is merely a tool to accelerate the boat. The priority is ALWAYS on sailing the boat flat, sailing the boat precisely and consistently on the wind, and maximising our leverage to enable us to maximise our power conversion (trapezing flat, hiking hard).

Boat set-up is crucial to achieving a flat and stable platform for the helm to achieve the above. The narrow rig base makes the Fireball mast quite bendy. Combined with a large mainsail it is almost impossible to use too much kicker [in breezy conditions, notwithstanding lull response]. Kicker pushes the bow upwind and makes us point higher as well as flattening the mainsail to reduce drag. For information, I cannot physically pull more kicker on upwind in more than 20knts. There probably is a mode to be had by easing the kicker (and strut) but I can't say I have found it. The jib slot should match the mainsail, but often this is controlled by mast rake rather than jib bars, lift the bars to fine tune or if you are caught on the wrong mast rake. Easing the jib to help accelerate the boat is sometimes ok - but note that 10mm out on sheet is the correct sort of range. Do squeeze it back in when the boat is moving fast.



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What does it feel like? Easy - Like warm apple pie!

A fireball is a lovely boat to sail upwind in breezy conditions. Sailed well, a fireball is able to generate speed and height. Fireballs are fortunate to have an efficient centreboard section, which, once higher water flow velocities are achieved, generates a high lift to drag ratio. Lifting the centreboard increases the chord length and reduces the camber to chord length ratio, which, at higher Reynolds numbers (faster speeds), produces a more efficient section. It also keeps you more steady in a straight line. What does that mean? Once you are going quick, you can also go high. Lifting the C/B also has a second effect - it frees the bow. This is to say that moving the centre or resistance (lift) backwards reduces weather helm (tiller tug) and naturally makes us lean on the jib. This is another reason why you should not [over]actively put the bow down! Lift the C/B too far and you will lose the bow and generate lee helm. Aim for very small amounts of weather helm. Typically the centreboard will go from vertical up to 1-2 inches up as we start to free to bow. Reserve the numbers 3-4 for when its really blowing and never [save for survival] go more than 5 inches up. The fireball really starts to sing when you generate speed and turn it in to height, it becomes easy to sail, the rudder is balanced and light and mainsheet movements become smaller as you use the main leach to generate height. It will practically sail itself!

Key points - Keep the range of steering angles narrow and don't give away too much height. Balance the boat and let it sail the angle - using loads of kicker, sneaking the board up to neutralise the load in the tiller and always sailing flat. Work hard to accelerate the boat, using a short sharp mainsail ease to 'lean on the jib', use the main leach to drive the height again and then chill out at Mach 10 and let the good times roll!



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