

Setting up and Tuning an IOM

By Jeff Byerley

Setting up the rig of an International One Meter (IOM) is much the same as any other Class and while some things are basic settings others are peculiar to the IOM Class.

Taking it in order I would start like this:

Mast Pre-bend:

If the mast is conventional 11.1 mm diameter pre-bend the mast (tip forward) around 25 mm with the bend centered around about 200 mm below jib attachment point, and achieved by carefully bending around a soft item (cardboard roll or car tire etc), of approximately 600 mm dia. This pre--bending is to allow increased fore-stay tension when the backstay is applied without excessive mast bend.

Mast Rake:

Most designers/builders supply a rake measurement, usually taken from a point on the transom to the middle mast band. This measurement is decided on by trial and error to suit the rig in question. (Normally the smaller the rig the greater the rake). Adjust the rake either by adjusting the bowsie at the top of the forestay or an adjustment on the jib boom deck attachment.

Rig Tension:

Once the rake has been set the backstay is then tensioned so that the mast is shaped to match the luff curve of the mainsail. This is judged when the sail sets without any distortion and appears to be setting as the Sailmaker has shaped the sail.

At this stage the side stays can be set as they have an effect on the sail shape. Tension wise they should be set so that they are reasonably tight, but not so that Jimmy Hendrix could play a tune on them.

A check should then be made to ensure the mast is vertical in the boat by measuring from each eye bolt to the top of the mast.

You then check the angle made by the spreaders. These can be set, by bending the joining shaft, to achieve an effect on the mainsail shape. Normally these are

angled back about 10mm, but this depends on the eve bolt position and sail shape.

The mast ram should then be adjusted so that mast is held in position against vang adjustment loading. Readjust backstay tension if necessary to achieve desired sail depth.

Mainsail Adjustment:

The final adjustment to mainsail shape is made by adjusting foot round (slide adjuster) to about 25 mm, then leech twist and finally downhaul tension (Cunningham). This is done by bringing the main boom to the centre and adjusting the vang to achieve a curve in the leech with a maximum depth of about 30 to 35 mm, measured from the backstay. This depth is finally decided on by the boat "feel" when sailing. Adjust the downhaul to remove any wrinkles in the luff.

Jib Adjustment:

Adjust the leech line to achieve a twist in the leech of about 35 mm, for the No 1 rig, and then adjust the foot round (slide adjuster) to approximately 35 mm followed by the downhaul adjustment to remove wrinkles in the luff.

Boom Angles:

You can now adjust boom angles. Start by setting the radio control to pull the sheets fully in (lever down and trim fully in).

The main boom is set about 5 to 10 mm off the sheet post and then the jib boom to between 55 to 60 mm from the center of the mast.

These settings for the mid range of the rig (3-8 knots) of wind and eased out by stick adjustment or trim for very light or heavy conditions. These are the basic settings for the No 1 rig and may be adjusted to suit boat characteristics or wind/sea conditions. For the No 2 rig they are similar with perhaps an easing of the sheets. The No 3 rig is slightly different by a need to achieve steering balance by increasing the twist and boom angle of the jib.

Boat Feel:

Boat feel, as in weather helm, is usually adjusted to achieve a characteristic by having the boat sail on the wind to windward with slight weather helm, as in the

boat wants to head slowly into the wind when the rudder is straight ahead. This can be achieved by tweaking the jib twist or boom setting either out to have more rudder feel or in to have less.

Boom Angle when Reaching:

Another important setting is the correct boom angle when reaching. This is achieved by the difference in sheet take off points on the jib and main. Normally the distance between the jib boom to deck -attachment and the jib sheet boom hanger is approximately 40 mm longer than the distance between the mast and main boom sheet hanger.

This can be checked by holding the boat at a 100 deg angle to the wind and the booms about 45 deg to the centre line of the hull and checking that the mainsail luffs slightly sooner than the jib when the boat is turned into the wind.

Temporary adjustments can be made using a cable tie around the sheet and boom to move the sheet attachment position on either the jib or main boom to achieve the desired effect.

Usually the designers/builders settings are correct but some adjustment may be necessary.

These comments are in general terms and would suit most IOM's, but use them as a starting point and alter the numbers if you find a setting that suits your boat better.