ENTERPRISE TUNING GUIDE.

TUNING IS KEY TO PERFORMANCE – P&B TUNING GUIDES ARE CREATED, TRIED AND TESTED BY OUR SAILORS AND BRAND AMBASSADORS.

WIND SPEED	LIGHT	MEDIUM	HEAVY
MAST RAKE	6490mm	6490mm	6445mm
RIG TENSION	400lbs	400lbs	450lbs
UPWIND	Tight	Ease 18mm	Tight
OUTHAUL REACHING / OFF WIND	Ease 12mm	Ease 90-115mm	Ease 50-75mm
RUNNING	Tight	Tight	Tight
CUNNINGHAM UP WIND	Off	Up to 12mm	Up to 75mm
REACHING OFF WIND	Off	Off	Off

CROSS SECTION VIEW OF MAST + SPREADERS



MAST: SUPER SPAR
A = 160-165mm
B = 410mm

MAST: SELDEN
A = 160mm
B = 413mm

Take measurement A by intersecting a line between spreader ends with a perpendicular line from the mast track. Measurement B is taken from the side wall of the mast section to the spreader end.

Enterprises are straightforward enough to sail but really hard to sail fast. Unlike high-performance dinghies, they are all very similar in speed and so the differences are likely to be small. It is therefore critical to concentrate on rig-set up, tactics, practising sailing techniques and kinetics between helm and crew. Here are just a few of the fine points, which make an Enterprise fast.

HULL

The hull should be down to minimum weight 94kg. Weighed without centreboard and control lines (but including centreboard bolt) The slot gasket should over lap by ¼" (6mm) and put on under tension. Keel band needs to be fair so fill in screw holes in your keel band. The centreboard bolt should be as far aft as class rules allow. This is measured from the aft face of transom to foreside of the bearing point of the centreboard bolt.
This measurement is 2216mm.

FOILS

Differences in boat speed are small so your foils need to be fair and stiff. Centreboards should be close to maximum depth. This measurement is the extension below keel, (excluding keel band) when fully lowered at right angles to the keel 826mm is the max. Aluminium stocks and tillers are favoured for firm, precise steering (critical in windy conditions at gybe marks!)

MAST POSITION

Two mast sections that are currently being used are the Selden D+ and a Super Spar M2 with a lower sleeve. The mast foot needs to be positioned as far forwards as class rules allow 2689mm from aft of mast at deck to aft of transom. A high-density plastic mast step should be used: this eliminates compression and ensures consistency in the mast set-up (sideways bend) Spreader deflection, rig tension and mast rake

Remember these measurements are a guide only and may vary from boat to boat.

Ensure your spreaders are set correctly (see diagram for both Selden & Super Spar mast). Rig tension is measured on the shrouds using a Super Spar rig gauge (rig gauges wear out so please check).

Enterprises shrouds must be 3mm 1x19 wire. With the rig tension still on, check the straightness of the mast. It should be straight fore & aft and side-to-side. Do this by looking up the luff-groove of the mast from the gooseneck. If the mast is bending to one side at the spreaders, this could be due to a worn mast step. If this is the case then either replace or pack the mast step with a piece of Mylar under the mast heel. IE. if the mast is bending to port at spreaders, place a piece of Mylar or plastic the heel on the port side to straighten the mast.

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This incidentally is the single biggest fault in slow Enterprises and the easiest to rectify, as the rig just doesn't work properly when the luff-groove is anything but straight.

Once you have the correct rig tension, measure your rake. Rake is measured by pulling the tape measure up to the mast (don't forget to cleat the main halyard). Pull the tape measure taut and measure to the top of the gooseneck band. You should read 18'6" (5640mm). Once you have this measurement, swing your tape measure to the top of the transom and measure on the centreline your rake.

MAST RAKE RIG TENSION

P&B Rondar mast steps are 25mm high. A lower mast step decreases rake.

FAIRLEADS

Enterprises fairleads are measured from the outside edge of the fairlead hence the narrow bars of stainless steel. The measurements must be close to the minimum 595 from C/L using 6mm or 8mm jib sheets.

JIB SHEETING

With the jib pulled in tight, the extension of the jib sheet should meet the luff wire 1680mm from the tack.

- In medium airs, pull the jib in tight until a hard crease appears along the foot.
- In light conditions when the crew is thinking of sitting in, ease the jib slightly ¼" (6mm) so it is smooth in the foot
- In heavy airs pull the jib sheet as hard as possible so the hard crease appears along the foot. Often the helm needs to lend a hand enabling the crew to pull it in hard enough.

MAIN SHEET AND TRAVELLER

Mainsheet block to be secured C/L no need to use traveller length. I personally don't use or recommend ratchet blocks. "Enterprise must be sailed flat at all times". Ratchets block slows your response rate to mainsheet trim increasing heeling moment. Slow!

KICKER

For mainsail leach control a 16-1 cascade kicker system is used. The kicker point should be 21" (530mm) from the inboard end of the boom. Except in windy conditions this position can be moved aft up to 3" (75mm), inducing lower mast bend. Ensure boom slide is secured and does not slide forward. If necessary drill a small hole in the underside of the boom, locating a self-taper in it. In light to medium conditions use kicker so the top telltale stalls 70% of the time. In heavier airs, use loads of kicker just until creases appear from the spreaders to the clew of the mainsail.

OUTHAUL & CUNNINGHAM

The other two main controls influencing the mainsail shape are a 4-1outhaul and Cunningham hole. If you have a competent crew, have the outhaul system on the boom. And use a stopper knot for maximum setting e.g. 4½" (115mm). The Cunningham is not quite so important. Either led to the crew or helm.

JIB STICKS

We now use 2 jib sticks, one maximum length and one minimum length. The longer jib stick is used for goose winging to windward i.e. dead running. The shorter one is used on those broad reaches holding the jib out to leeward, with the jib sheet pulled in tight enabling maximum projected areas to be achieved. This has certainly been proven quicker in light to medium airs. In heavy air and in wavy conditions it restricts your steering and ability to pump the sails to promote planning.

RIG FAULTS AND THEIR REMEDIES

MAINSAIL

If the mast is bending too much for the luff round of the sail there will be creases coming from the mast running down towards the clew. These are not to be confused with the horizontal wrinkles caused by insufficient luff tension. Sail entry will be flat and there will be an abrupt angular maximum draft point. Firstly check rig tension. If this does not rectify matters, the spreaders will need to be angled further forward. If the mast is inverted or too straight there will be an excess of cloth near the mast. Too little mast bend may manifest itself in the jib back winding the mainsail near the mast. The solution to this problem would be to ease the Cunningham hole. If these measures do not rectify the problem then the spreaders should be swept further aft.

JIB

The jib reflects similar symptoms to that of the main, the difference being that a main features mast bend and a jib features luff sag. The jib is cut with a certain amount of negative luff curve to allow for sag and also with some tension on the sail relative to the wire. Too much tension means the draft is further aft and the sail is flatter (desirable in flatter water). Too little tension results in a fuller sail with a full entry desirable in choppy water. The leach tension on the jib is very important. If the leach is too tight, tell-tales will help to show this up and the main will be back winding.