

## Flying Fifteen Tuning

The following notes are aimed at getting the best from your sails. Please ring if you need further information

### **BEFORE YOU START**

**Sail Care** Avoid allowing the sails to flap unnecessarily. Roll mains and jibs being careful to shake out creases. Forcefully pulling out creases in new hard cloth can cause damage to the threads. Leave mainsail battens in place during the season and roll parallel to the battens. During prolonged periods out of use, release the batten ends to allow the elastics to relax. Washing salt from sails prior to storage is advisable.

### **Rig Settings**

The following measurements should be checked against our recommended settings. Mast foot position The mast must be correctly positioned in the boat so that the gate may be sufficiently adjusted to give the correct range of adjustment. This is coupled with our recommended rake and spreader settings Measure mast foot position around outside of hull from transom to the forward keel bolt, then inside boat back from keel bolt to front mast bolt.

### **Spreader Settings**

Measure spreader length from mast wall to shroud wire. Measure aft deflection from a straight edge across the shrouds to the nearest point on the luff groove.

### **Setting Spreaders Evenly**

To set up the rig correctly it is important to set the spreaders evenly. Stretch a string between spreader tips. Stretch a string across shroud base - pull on some rig tension and lie in bottom of boat. Sight parallel strings and adjust spreaders accordingly.

### **Mast Rake**

Attach a tape measure to main halyard pull up to black band and measure to top of transom with the rig tension set. The mast ram should be free during this measurement.

### **Shroud Tension**

Rig gauges are often poorly calibrated and should be used as a guide. We quote actual readings and not load conversions for this reason.

Be aware of the following:-

- Our settings are taken on 3mm Dyform wire.
- Tensions do not measure exactly the same as 3mm 1 x 19 standard wire or some of the earlier 3.2mm Dyform rigging which is in use.
- Check shroud diameters and wire types prior to setting up. (We hold tension conversions.)

### **Mast side chocking**

The mast should be firmly chocked sideways centrally in the mast gate. Check for sideways bend. This may be because shrouds are uneven lengths.

### **Mast Heel Fitment**

The mast heel should be firmly fitting so that rotation of the mast does not spoil spreader settings.

### **Shroud base width**

Most current boats utilize shroud anchorages through the gunwales. Check width of shroud base against our figures. If there is a significant difference please ring for advice on spreader length adjustment required. Boats using shroud plates bolted thro' the skin will be narrower and therefore require shorter spreaders to maintain the same deflection.

### **Jib Sheet anchorages**

We recommend two jib sheeting widths, the narrow being for light winds only.

**IMPORTANT** If it is only possible to fit one set of tracks, fit the outer set only.

This is a reasonably critical adjustment measured to the bearing points of the jib cars in their working position. Do not be tempted to sheet too far inboard.

### **Mast Ram / Puller**

We recommend the use of a mast ram and puller which is easily adjustable on the water. The under deck lever type is very efficient.

### **Mainsheeting**

We recommend aft main sheeting leading to a 2:1 purchase in the centre of the boom. The mainsheet tails should be long enough to lead directly into the boom end block allowing centralizing of boom.

## **SAIL SETTING**

Genoa Sheeting positions are given in the tuning sheet. The genoa leech tell tails should be used to check for stall, in light winds the three luff tell tails should lift together.

By adjustment of sheet tension this can be achieved by:-

- moving the track forward with the sheet eased. This will make the boat foot but point lower.
- moving the track back, will require the sheet to be hardened to make the tell tails draw correctly. The boat will point higher but move slower. In stronger breezes the genoa is de-powered by tracking back and hard sheeting. The weight of wind in the sail will automatically open the top of the sail but the base is flattened by sheet tension. Remember that as the mast rake is increased the genoa will arc back lowering the clew and opening the leech. Sheet lead position must be adjusted.

In sheeting the genoa it is most important to look at the leech of the sail through the mainsail luff window. Sheeting harder will close the slot and tend to make the leech tell tail stall. For maximum pointing, sailing on the edge of stall will give best results. As the breeze increases the head of the jib will tend to deepen and close into the mainsail.. As you develop an eye for the sail it will be apparent when to ease back on the rig to open up the top of the sail - this should coincide with being constantly overpowered. Remember In light to moderate winds high pointing is due to a narrow slot and closed leech on the mainsail. However, as you become overpowered high pointing is nearly always achieved by minimisation of drag and leeway by flattening the rig and increasing twist.

### **Mainsail**

The bottom of the Flying Fifteen main should be held close to the centre line in light winds. In light conditions the kicker should be slack and mainsheet set so that top batten tell tail flows. With helm and crew on the deck the mainsheet can be squeezed in so that the to teel tail only partially flows. When crew and helm start to sit out, pull on a little kicker. Boom may be allowed an inch or two off centreline if there is a chop without excessive twist. As you become more overpowered first firm up on the kicker. Let the boom off the centreline to keep the boat on its feet. In flat water the boom should normally only go out half way to the quarter and in choppy water all the way to the quarter. If these measures are insufficient to keep the boat on its feet then it is necessary to increase mast bend.

### **Mast Bend**

Prebend is applied with the crew in the centre of the boat or to leeward. Above this point, ram the mast straight until overpowered. (This hardens the mainsail leech for max power and pointing.) When intermittent overpowering occurs, ease the ram and apply kicker gradually. When constantly overpowered ease back the rig tension by as explained under genoa sheeting) and adjust ram to regulate power. The rig will feel considerably more springy and easier to sail with the tension reduced. Remember to tension up again if the wind drops as otherwise power and pointing will suffer.

### **Mast Rake**

We recommend one single mast rake setting. Downwind speed is sacrificed with excessive rake.

### **Downwind Sailing**

- Helm keep the boat upright and don't trail the transom in light winds. Watch out for turbulence in the wake.
- Steering is slow, try to coax the boat into the required direction by gentle tiller and heel.
- Don't forget to keep trimming the genoa - don't stall it.
- Furl genoa downwind when leech closes down onto mainsail.
- Crew trim pole height for an even curl and keep it curling! A luff which isn't is almost certainly over trimmed
- Keep that pole trimmed as far to windward as possible without distortion of the sail.

Down wind in general max upright mast rake is fastest. Increase mainsail camber with outhaul avoiding excessive spinnaker backwinding. On overpowered reaches de-power main to keep centre of effort forward. Pull on outhaul, kicker off and prebend on. The crew and helm should sit right aft to keep the rudder in the water.

<b>Settings</b>					
<b>Wind Strength</b>	<b>Ghosting - crew to leeward</b>	<b>Helm on deck, crew in centre</b>	<b>Helm &amp; crew on deck to windward</b>	<b>Helm &amp; crew sitting out &amp; intermittently overpowered</b>	<b>Constantly overpowered</b>
<b>Rig Tension</b>	Slacken to allow luff to sag into shape	28.5	28.5	28.5	Slacken by 0.5"
<b>Kicker</b>	OFF	OFF	OFF	Increase as ram is released	Increase as required
<b>Jibsheet</b>	Slack Inboard	Inboard	Outboard sheet until leech tell tail only just flows	Outboard, sheet until leech tell tail only just flows	Sheet hard
<b>Mainsheet</b>	Slack	Keep telltails flowing	Keep tell tails flowing	Boom 4" - 5" off C/L	Boom 6" - 8" off C/L
<b>Prebend</b>	Hard forward	Ram off by 0.5" - 1"	Ram on mast straight	Ease ram as required	Ease ram as required
<b>Outhaul</b>	ON	ON	ON	ON	ON
<b>Cunningham</b>					Pull on as a last resort

<b>Flying Fifteen Settings OVINGTON MK 9</b>	
C/L front bolt to transom	3880 mm
Front of flange to transom	3935 mm
Front face of mast (at step) to transom	3880 mm
Mast gate to transom	3750 - 3840 mm
Shroud base to transom	3242 mm
Width of shroud base	1595 mm
Spreader length to mast wall	430 mm
Jib tracks to transom	2740 - 3115 mm
Jib tracks athwartships spacing	868 mm
Measured to bearing points/ prebend released.	788 mm

<b>Spreader Settings</b>			
<b>Mast</b>	<b>Mast Mast foot to transom</b>	<b>Mast wall to shroud</b>	<b>Spreader tips</b>
<b>Epsilon</b>	3860 mm	430 mm	165 mm
<b>M2</b>	3860 mm	430 mm	180 mm
<b>Nimbus</b>	3860 mm	430 mm	180 mm

<b>Shroud Tension</b>	tight setting 28.5 measured on Superspar gauge on 3mm dyform wire (Loos gauge 34)
<b>Mast Rake</b>	Measured to bearing points Inner tracks 788 mm 7583 mm black band to transom measured with ram / prebend released