



## Performance Setup Guide

Congratulations on your recent purchase of Bartlett Sails, an authorized Banks Sails Designer. John Bartlett has custom designed these sails based on his successful campaigns on the J/24, J/22, and J/80 circuit. With the help of Banks Sails, Bartlett Sails is able to provide fast, adjustable and reliable sails at a reasonable cost.

As this guide introduces some new techniques, any questions may be directed to Bartlett Sails at 512-266-1895 or [bartsail@austin.rr.com](mailto:bartsail@austin.rr.com).

This guide will give the user a baseline setup to quickly become competitive in the J/80 circuit.

Different production runs of J/80's will cause certain measurements to differ from boat to boat. While it becomes meaningless to compare boats with these differences, these measurements are helpful to the boat owner to make changes and try different setups and get the boat back to its original starting point.

## **Sail Design**

### **Jib**

The jib was cut with little headstay sag. If you can see headstay sag, odds are your rig is too loose.

### **Main**

The main was cut for an allowance of 1 \_" of mast prebend. This can be measured by hoisting a gauge up the mast on the main halyard. Class rules allow for a loose-footed main. A common mistake is to tighten the foot with the outhaul too much. 6" off the boom is the correct nominal setting and should produce 7% camber depth.

## **Initial Setup**

### **Headstay**

The class rules allow a headstay length of between 32' 9.5" and 33'. We recommend the maximum headstay length to provide maximum rake. A new headstay cut to the proper length is recommended for maximum performance. Alternatively, one may want to add toggle(s) to lengthen it. Adding toggles to the top will allow the sail to sit closer to the deck, while adding toggles to the bottom will make headstay removal and installation easier. Purchasing a new headstay will eliminate both of these problems. Additionally, the flexible foil is much lighter than the aluminum. However, they are no longer in production. Also, the rod is much stiffer than the dyform and provides less flex and more consistency. We are currently working on rigging a flexible foil with a rod headstay. Stay tuned for the results.

### **Mast Step**

When the mast is first stepped, with no tension on the rig, the mast butt should be forward enough so that the rear of the mast touches the backside of the partners. To attain this setting it is expected that you will need to move your mast step forward. It is common for one to have to drill new holes in the step to move it forward enough. The nominal setting for placement of the mast butt is 10" from the back of the mast to the front of the bulkhead.

## **Rake**

The rake of the mast was measured by rigging a tape measure to the main halyard and measuring the distance to the edge of the transom. This distance equals 37' 7".

## **Getting the mast in column**

There are different ways to get the mast in column. Although a properly weighted main halyard gets close, greater accuracy is needed for maximum performance.

To obtain greater accuracy one must be able to not only get the mast in column, but also have the mast, keel and rudder all in column at the same time. Again due to production variances, different size mast blocks may be needed on each side of the partners.

To do this, you will need a Laser Cross Level. Most performance sail designers will have one you can borrow and can walk you through the process. The entire operation will take roughly 5 hours and will need to be done during the darkest conditions.

After the rig is tensioned to the settings below, mark the shrouds port and starboard. Measure the distance from the edge of the upper and lower screws in the turnbuckle with a caliper. Millimeters will make a difference so be extremely accurate. Write these numbers down to insure repeatability without needing the laser.

## **Rig Tension**

While rig tension gauges differ based on style and age, these numbers were taken from an "old" style Loos gauge. Contact Bartlett Sails to calibrate your gauge.

To keep the mast in column add equal turns to each side for the different wind conditions. For waves add an additional \_ turn to the numbers on the chart. For a flexible foil headstay add an extra \_ turn to the nominal settings on all shrouds.

The following matrix provides the nominal settings and the changes for a variety of wind conditions.

Wind Speed (kts)		Uppers		Lowers		Mids	
		turns	Loos	turns	Loos	turns	Loos
Very Light	< 5	-2	28	-1.5	17	-2.5	10
Light	5-10	0	32	0	25	0	17
Moderate	10-15	+2	34	+1.5	29.5	+2.5	22
Heavy	15-20	+4	36	+3	32	+5	26
Very Heavy	> 20						

### Mast Blocks

The Mast blocks are used to position the mast in column with the keel and rudder. Due to production variances, it should not be assumed that one will need equal thickness mast blocks on each side. After performing the Laser alignment, use the correct blocks to match the distances inside the partners. The fore and aft blocks are used to induce prebend. The mast blocks should be at the 6, 12, 4 and 8 o'clock positions. Use the following chart as nominal settings for blocking the mast.

Wind Speed (kts)		Mast Block
Very Light	< 5	2x rear
Light	5-10	rear
Moderate	10-15	forward
Heavy	15-20	forward
Very Heavy	> 20	forward

## **Jib Cars**

Since track placements differ from boat to boat (as much as 3"), the settings for the jib cars should be measured from the back of the bow tang (where the forestay clevis pin attaches), to the center of the hole where the retractable pin on the jib cars secure.

The nominal setting for the jib cars is 10' 4.25" from the back of the bow tang to the center of the track pin hole. Extra holes should be drilled in between the standard holes as small adjustments make big changes in high aspect ratio jibs.

## **Jib Halyard**

If one is unable to adjust the tension on the rig (ex. during a race), adding additional halyard tension will give the driver a wider groove to steer to.

## **Jib Sheet**

Minimum diameter with a polypropylene cover will reduce the amount of friction on the line as it comes through the blocks. We recommend 2:1 sheeting not just for reduced sheet loads, but due to the high aspect ratio on the jib, one needs to be able to make fine adjustments (1/4") that are made possible with 2:1 sheeting.

## **Miscellaneous**

Tie all halyards and sheets to the sails. Shackles will come undone, spoil a race and damage equipment. Tying all halyards will also reduce weight aloft as much as possible.

Laminate the following page to have a quick reference guide onboard your boat. The last 2 matrices are for tracking the distance between the two ends of the screws in the shroud toggles measured in millimeters.

Wind Speed (kts)		Uppers		Lowers		Mids	
		turns	Loos	turns	Loos	turns	Loos
Very Light	< 5	-2	28	-1.5	17	-2.5	10
Light	5-10	0	32	0	25	0	17
Moderate	10-15	+2	34	+1.5	29.5	+2.5	22
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Very Heavy	> 20						

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Moderate	10-15	forward
Heavy	15-20	forward
Very Heavy	> 20	forward

STARBOARD	
Uppers	
Lowers	
Mids	

PORT	
Uppers	
Lowers	
Mids	