



## Megabyte Tuning Guide – Mark II Rig

While many of the traditional dinghy classes rely on the Vang to induce and maintain mast bend and a flat sail, the Megabyte Mark II does not. This makes the boat unique in terms of tuning and sail trim compared to the traditional dinghy classes. The following information is derived from coaching information for the Byte CII. This information can be readily applied to tuning the Megabyte with the Mark II rig. A number of coaching videos by Ian Bruce, on the Byte CII, are available via: <http://www.bytecii.com/byte-coaching-manual/>. This coaching information is readily transferable to the Mark II Rig of the Megabyte.

The Megabyte was specifically designed by Ian Bruce to fit a weight range, as opposed to an age group or gender. Furthermore, the design is conducive to a large weight range (110 lb – 160 lb (50 - 73 Kg) or more). The Mark II sail is made of Mylar, instead of Dacron, and is fully battened. When coupled with a more tapered, carbon fiber mast, the Cunningham carries the load effortlessly to the top of the sail, allowing you to bend the mast and flatten the sail. What this means to sailors coming from other traditional dinghy classes, is that you never use the Vang upwind, because doing so will add unnecessary tension to the leech. Other traditional dinghies require this tension, as the Vang is the only control that allows you to bend the mast and flatten the sail effectively. This is not the case with the Byte CII.

The golden rule, for tuning a Megabyte upwind, is to achieve the desired sail shape while keeping the boom over the back corner of the boat. When applying Cunningham, the mast will bend, and the boom will move outboard. When easing Cunningham, the mast will stiffen, and the boom will move inboard. To counter the boom's movement from the back corner of the boat, you may use either the mainsheet or the traveler, depending on the wind conditions.

The traveler is the second large game changer from the traditional dinghies. The traveler's role in the Megabyte is to allow you to effectively position the boom over the back corner of the boat with the ideal sail shape for the conditions. In other words, it allows you to effectively control your leech tension for different conditions, via the mainsheet, while keeping your boom in the ideal place for speed and pointing (the leeward rear corner of the boat).

Thus, in the extreme conditions (light and heavy air), where you generally ease the sheet out, you will pull the traveler to windward, pulling the boom back over the corner to maintain your pointing. Thus, the sheet is allowing you to control your leech tension, while the traveler controls the sail's angle to the wind. In medium air, when you need more power in the sail, and generally would pull tighter on the sail, the traveler drops as far as the centerline of the boat, allowing you to apply just enough tension on the sail to prevent you from spilling much wanted power out of the top.

Because the Megabyte is designed for such a broad weight range, it is important to look at the suggestions below as general guidelines for your level of control upwind. What a 110 lb (50 kg) sailor does in 15 knots will vary significantly from what a 160 lb (73 kg) person will do in 15 knots.

### **Light Air**

You will sail with no Cunningham (or just enough to pull the horizontal creases out of the sail), will pull the traveler far to windward, and will ease the sheet to the corner of the boat. Your sail will look relatively full, and pulling the traveler to windward will give you more room to ease the sheet to the corner and open the leech. The tell-tale on your top batten should look like it is trying to go forward 50% of the time, and should fly straight back the other 50% of the time (50/50 rule).

### **Medium Air**

As you are fully powered up and under control (butt over the rail or light hiking), you should set the traveler more towards the center of the boat. You will pull the Cunningham just to the point where you have no creases in the sail. This will move the boom outboard, and you will compensate by trimming the sail to the corner of the boat. The 50/50 rule applies here as well.

### **Medium-Heavy Air**

As the Megabyte is a small and physical boat, there is a wind range, where if you hike hard enough, you may want to continue to keep some power in the sail. For the stronger and heavier sailors, I find this may go as high 15 knots or so. In this wind range, you will have the Cunningham maxed out, the traveler center lined, and the main trimmed to the corner. If the boat is flat, and you have no helm, this setup will give you tremendous height and power. This will ONLY work if you are hiking hard, and have no helm. The instant you are no longer able to maintain a neutral helm, you should start moving to the heavy air setup. This will happen much earlier if you are sailing in waves and later in flat water.

### **Heavy Air**

As you get to the point where hiking is no longer enough, the Megabyte gives you another setup to keep the lightweights in the game. Once the Cunningham is maxed out, and you start dumping the sail to keep the boat flat, start to move the traveler back up to windward. This allows you to dump the sail to the point where you are under control, while keeping the sail in the corner of the boat to maintain your pointing. Without having to use the Vang, you are able to do this without applying any tension to your leech, making depowering easy and effective.

### **Summary:**

**Light Air:** Traveler up (windward of midline); sail out; Cunningham off or variable

**Medium Air:** Traveler down (leeward of midline); sail in; Cunningham variable

**Medium-Heavy Air:** Traveler down; sail in; Cunningham strapped down

**Heavy Air:** Traveler up (windward of midline); sail out; Cunningham strapped down