

# El Toro Tuning Tips by Hank Jotz

[www.jotzsails.com](http://www.jotzsails.com)

## **Mast Bend**

My sails work best on a stiff mast one that bends less than 1.25 in. in all directions. To measure your mast bend, hang 50 pounds midway between the bands with the sail slot up and the mast supported at both bands. Stretch a tight string between the bands and measure the gap at the center. Alternatively, measure up from the ground at the center before and after the weight is applied.

## **Mast Rake**

Setting your mast rake properly is the next step. An average height mast measures 12 ft 11 in. from halyard shackle to the top deck. The ideal mast rake is 13 ft 7 in. from the halyard shackle to the top center or the transom, based on a 13.5 inch high transom at its center. To measure your mast rake, attach a tape measure to the halyard shackle and then measure to the top center of the transom.

The ideal mast rake of 13 ft 7 in. assumes a distance of 30 to 32 inches between the aft face of the mast at the step to the front of the daggerboard. If this distance is less than 30 inches, then the mast will have to be more vertical. For example, a 28 in. mast to board distance might need a 13 ft 9 in. rake measurement.

## **Sail Adjustment - General**

**Downhaul:** In really light air, downhaul tension should allow some wrinkles at the luff. In breezes over 5 mph, apply just enough tension to remove the wrinkles. On reaches and runs, ease the downhaul to show some wrinkles.

**Vang:** Off the wind, add enough vang tension to make the leech a little firmer than it was going upwind. You should see very little twist at the top batten. Over tightening the vang may create a large vertical wrinkle from the head to the clew in front of the batten section of the sail.

**Leech:** The mainsheet, along with the traveler, controls leech tension, mast bend, and sail trim. With the right amount of leech tension, the top batten section should twist off slightly from the rest of the sail and the top batten should be approximately parallel to the centerline of the boat. Never cleat the mainsheet going upwind.

**Traveler:** Set the traveler so the end of the boom is over the transom corner. A simple rope traveler

should be down to the point of almost touching the tiller.

**Outhaul:** Set the outhaul to the band and leave it there.

### **Sail Adjustment - Upwind Detail**

**Vang:** Adjust the vang tight enough so that the boom tip rises only an inch or two when the mainsheet is let off in a puff or when hitting the next big wave.

**Centerboard:** When the wind is 15 mph and above, raise the centerboard an inch or two to significantly increase your upwind speed. Pulling the centerboard up provides several added benefits. Weather helm is reduced making it easier to steer the boat. Rounding up and getting in irons is also reduced. Also, the boat is likely to point higher as the faster speed keeps the boat from sliding sideways as much. For skippers under a 100 pounds, when the wind is 15 mph and above, it may be necessary to raise the centerboard 2 to 4 inches while going to weather.