

The OLD FART's Thoughts on Tuning ...and Handy Checklist



Tune in
Tune up
Stay Tuned
Don't tune out!

Disclaimer: There is no magic solution to tuning! There are way too many variables. However, this should give you some starting points and ideas of things to try. Watch the best sailors - they are constantly tweaking!

TUNING GOALS

- ☐ Steering balance
Be able to sail upwind with minimal rudder adjustments.
- ☐ Pointing ability.
Be able to point with the boats around you.
- ☐ Boat speed

SETUP

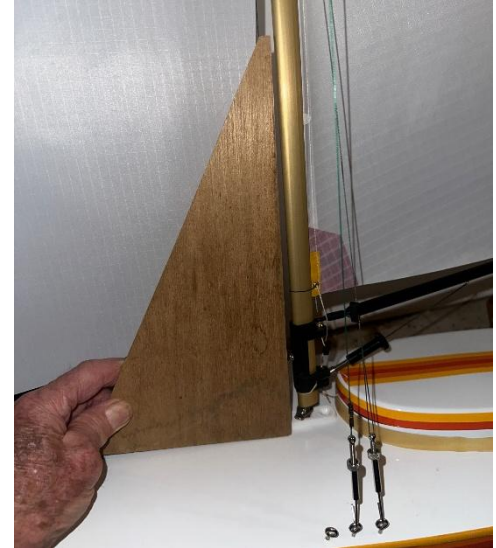
Mast

- ☐ Centered
Use tape measure or "scissors gauge". Adjust upper shrouds until top is centered.
- ☐ Straight.
Sight up mast while horizontal. Adjust lower shrouds both sides.
- ☐ Raked OK
Start with mast vertical. Supposedly $48\frac{3}{4}$ " from the stem to the top of your jib stay. However, this will vary from boat to boat so set up a reference measurement for your boat.



I prefer to place a square on the deck to look at “verticality.” I find this method easy to use as a relative measure. See comments later on about adjusting rake for conditions.

- ☐ Mast step in middle or aft hole
Use middle hole as a starting point. Moving to back hole will increase weather helm.



Rudder

- ☐ Centered
Check visually. Check that boat will glide in a straight line without sails trimmed.

Fore and aft trim

- ☐ Transom just kisses the water.
Very important. Easiest adjustment is battery position. You do not want your stern to drag!

Bottom

- ☐ Smooth
Smooth is fast! Wet sand with 600 grit. Or higher. (There are many opinions on this!)

RACE DAY

Skipper

- ☐ Observant
There is so much to be learned from watching what is going on around you. Also, work on your concentration. My concentration gets steadily worse through the afternoon. I am trying hard to work on that.

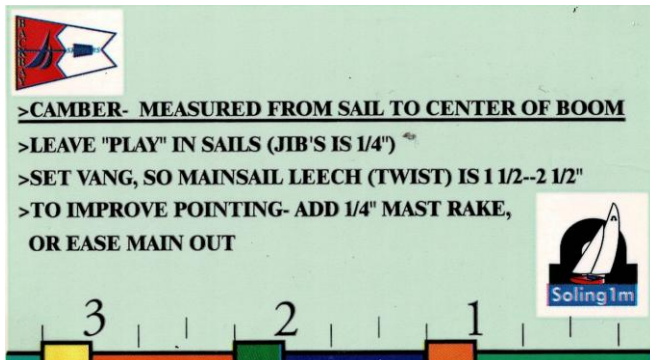
Today's Conditions

- ☐ Think hard about what kind of day it is.
Most of your settings will depend on whether today will feature strong and gusty winds, moderate winds, or be a drifter! If you're not sure, talk to other skippers on shore. More to follow on this important topic.

Outhauls

☐ **Set for today's conditions**

*The main and jib outhaul adjustments control the sails' depth. Generally speaking, in lighter winds you want more depth. Use the chart below as a starting point only. Tweak your settings from there. **The best thing you can do is to talk with other skippers on shore and look at their settings before setting out.***



SOLING>>>>>>>>>>>>>>>>>QUICK TUNING GUIDE

Start with vertical mast (normally*), in middle slot

WINDS.....	LIGHT.....	MED.....	HIGH
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JIB FORSTAY..... *48 3/4" *48 3/4" 48 1/2"

BACK STAY..... Loose..... (Barely) snug..... Snug

MAIN CAMBER..... 2" 1 1/2-2" 1 1/4"

MN BOOM PTS TO> TR.CNR..... TR.CNR..... 1/2-1" OUTSIDE

JIB CAMBER..... 1 3/4" 1 1/2" 1"

JIB BOOM PTS TO> SIDE STAY..... SIDE STAY..... INSIDE 1/2"

Sheets (starting point)

- ☐ Jib boom aimed at shroud.
- ☐ Main boom aimed at corner of transom.

Tip the boat or fill the sails to make these settings. Controller should be in the normal “in” position.

Consider modifying your cradle so the boat will stay in a heeled position for these adjustments. Remember, these positions will change with wind pressure on the sails.



Downhauls

- ❑ Main and jib. Not over-tightened.

As loose as possible without wrinkles. (In light to moderate conditions I like a few wrinkles.) Tighter when the wind picks up.

Backstay

- ☐ Look at your jib slot. **Important!**

*Tightening the backstay pulls the mast tip **back**, which pulls the front of the jib boom **up**, which forces the back of the jib boom **down**, which **tightens** the leech of the jib, which **reduces twist** and **closes up** the jib slot!! You're looking for a nice uniform curve on the leech of the jib, from top to bottom, that is parallel to the mainsail at its deepest point. Another good way to think of this is to make sure the twist in both sails matches; set the mainsail up first, and then match the jib's twist to it.*

You can set this initially with your boat heeled on the cradle, but you should observe it under sail. With the boat sailing away from you, if the top of the jib flares outward when sailing upwind, you should pull it in by tightening the backstay.

Boom vang

- ☐ Look at mainsail **twist**.

***Twist** means that the top of the mainsail is more eased than the bottom of it at the boom. As you tighten the boom vang, you will pull the boom down and reduce twist at the top of the sail.*

***Too much** twist and you will lose power at the top, and also pointing ability. **Too little** twist (a very tight leech) and the sail will be too flat and will "choke." The goal is for the top batten to be approximately parallel to the boom. The best way to observe twist is on a reach, with the sail about one third to half way out.*

FINE POINTS

Balance

Boat heads up

- ☐ Main too tight?

Make sure that in the normal "trimmed in" position the boom is not inside the corner of the transom.

- ☐ Jib too loose?

This means too loose relative to the main. If the main is trimmed properly, make sure the jib is not too far out.

- ☐ Mast raked too far back?

Raking the mast moves the center of effort aft, and causes the boat to head up. While it is a matter of personal trial and error, typically it should be slightly raked for moderate and light conditions, and raked further forward for gusty conditions where the boat often tends to round up.

- ☐ Mast step too far back?

Another variable! If you have excessive weather helm, make sure the mast is not stepped in the aftermost hole. Use the middle hole. The forward hole is rarely used.

Boat falls off

Do exactly the opposite of each point above! It will likely take you a number of tries to achieve the balance that you want.

Pointing

Can't point high enough

- ☐ Sails not trimmed enough?

Make sure both sails are trimmed correctly when the controller is in the "in" position. See earlier discussion of sheet setup. You can use your fine tune to "over trim" the sails when you need to pinch up momentarily.

- ☐ Sails not trimmed together?

This means that when one sail is trimmed correctly, the other is too far in or out. Bring the boat ashore and tweak the sheet set up.

- ☐ Jib slot OK?

This is important to keep an eye on. See jib slot discussion under backstay.

Speed

- ☐ Over-trimmed?
- ☐ Under-trimmed?
- ☐ Watch nearby boats!
- ☐ Watch telltales on your sails

Once you are comfortable with your set up, you must constantly tweak your trim. Watch other boats. Watch your telltales. Look for wind patches on the water. Experiment. Concentrate!

WIPEOUTS !!

- ❑ Wiping out after a tack?

Wiping out generally consists of rounding up sharply when you have other plans! In strong winds, practice easing the sheets as you come out of a tack, and sheeting in carefully once you are established on the new tack.

- ❑ Wiping out after a Jibe?

This unplanned maneuver can be pretty ugly in strong winds! When the boat jibes, the center of effort of the sails shifts abruptly from one side of the boat to the other, often causing the boat to round up sharply after the jibe. The best thing to do is to steer down momentarily as the sails cross over, to anticipate that. Careful steering and practice required!



- ❑ Wiping out randomly?

Another unplanned maneuver! Especially going downwind! There are three things worth considering: first, if you have a FlySky transmitter, program it to desensitize the rudder movement at the low end of the steering range. That will make it easier to steer in a straight line. For me, that has reduced the effect of my lack of coordination.

*Second, **concentrate, concentrate, concentrate!***

Third, make sure you have done what is necessary, as mentioned earlier, to reduce weather helm for heavy conditions.

Questions?

I hope you find these tips helpful. Please contact me anytime with your questions. alposnack@metrocast.net . Please let me know if you would like a PDF copy of this.

Also, this is a work in process, so please contact me with any suggestions you may have.

Fair winds,
Al Posnack

RESOURCES

There is a lot of good info available online. Search for “*tuning the 1 meter sailboat*”

You will find two pretty good videos on YouTube:

1. John Schwandke
2. Pat Dion