

## T37 Sail Setup Guide - Tricks and Tuning for Speed by Dan Newland, Pacific Northwest Model Yacht Club

Cardinal Rule: The boat should always steer itself.  
It should go straight when you release the helm.  
If you have to drive it all the time, that is slow.

### Main halyard:

Stitch a main halyard with needle and thread into the front of the mast sleeve at the top of the mainsail.  
This replaces your main halyard that is tied into the grommet in the head of the sail.  
This keeps the front of the sail tight against the mast and relieves forward distortion of the leach.

### Mainsail Cunningham:

The cunningham tightens the luff of a sail. I set mine from the tack then aft along the boom.  
But I almost NEVER use it.  
A soft luff has more fullness. Horizontal luff wrinkles are fast!

### Outhaul, mainsail, and jib:

The boom may be just barely long enough for the foot of the sail.  
Be certain you can get the sails pulled all the way along the main and jib booms.  
I added a spacer at the gooseneck to add about 1/8" of boom length.

### Clews MUST be close to boom:

Keep both clews close to their booms. This is important for three-dimensional clew placement control.  
I attach my clew directly to a Nylon slider on the boom. A simple tie-down can work, too.  
Too much sag up and away from the boom and your outhaul and vang do not work effectively.

### Sail Controls:

To control the various adjustments along the booms:  
I like Nylon spacers (hardware store) encircling the boom.  
1/8" SS set screws drilled into the spacers hold them in place.  
R/C fuel line clamps adjust quickly - good on main boom, but can cause sheet snags on the jib boom.  
Rubber grommets work well, if you can find the right size to grip the boom.  
Others prefer Velcro.

The most critical adjustment is jib angle relative to mainsail.  
The jib ALWAYS, ALWAYS must be out farther than the mainsail!!!!  
At least 2/3 out to the rail.

### Barney post for mainsail:

For most mainsail trim, you want the sail pulled close to centerline, but not necessarily downward.  
A barney post elevates the mainsheet lead to pull it in only sideways, rather than tighten the leech.

Mast control: Rake vs. Bend

Mast rake and mast bend are two VERY different things.

Rake is how far back the mast is angled.

Bend is how curved it is.

The luff of our sails bulges forward in the middle. It is not a straight-sided triangle.

A straight mast makes the mainsail FULL by pushing the luff curve fabric aft into the sail.

Mast BEND pulls the fabric out and can completely eliminate ANY shape. This is slow.

RAKE moves the center of effort of the sails aft. (See the yacht "America.")

Rake tends to pull the boom to center – partly by gravity.

Mast bend, don't overdo it!

A mast can be bent so much that all of the shape is removed,

sometimes called inverting the mainsail. This is slow.

Overbend wrinkles can appear in the mainsail diagonally from the clew to halfway up the mast.

Light air and lee helm:

In light wind, T37s tend to have "lee helm," meaning the bow wants to turn downwind.

This is slow.

Try flattening the jib with the outhaul and easing it out to pull less in the front.

I set the jib boom AS FAR AFT AS POSSIBLE.

If it clears the mast by the thickness of a sheet of paper, that's a good start.

Sail "twist"

Wind gets stronger as you go higher off the water, and especially so at a raised pond.

The apparent wind angle is thus farther back aloft,

so the top of the sail should be at larger angle than the bottom.

This is "twist."

More twist can help the boat accelerate, but it tends not to point as high.

Tightening the headstay tightens the leech and reduces twist, unless you have a topping lift.

Tightening the vang reduces twist in the mainsail by pulling downward on the leach.

Perfecting twist:

The entire length of the luff of the sails should break evenly.

Sail the boat close hauled and slowly head into the wind.

Does the top of the jib luff first? Tighten the headstay. (That might be by tightening the backstay.)

Does the top of the mainsail luff first? Tighten the vang.

In general, "When in doubt, let it out" applies.

Too twisty is not as slow as too tight.

Setting the jib and mainsail:

The jib should always be at a larger angle than the mainsail.

To set the angles right, luff the boat into the wind with the main boom at or very close to centerline.

Do both the jib and mainsail luff at the same time?

If the jib luffs first, sheet it in, relative to the mainsail.

If the mainsail luffs first, ease out the jib.

It is FAR better to have the jib out a bit too much than too tight.

Miscellaneous Refinements:

Add a headstay adjustment.

This allows you to separate the jib adjustments from the mast bend adjustments.

Use ceramic eyelets as fairleads, for a bit less friction.

Switch to twisted wire eyes. Use 3d nail, 19 ga. SS wire.

Sheet from the transom and use bungee to pull the sheets forward.

Switch to a lighter weight jib boom, instead of adding boom counter-weights.

Cut a vertical slot and in the mainsail where headstay screw eye penetrates.

Reinforce that slot with bits of adhesive insignia cloth.