

SQUIB: COACHING NOTES

INTRODUCTION

Variations in how Squibs have been made and the unusual rig style have led to a slightly different approach to setting up the mast and rigging to create a reliable starting point for boat tuning. Even among Squibs that comply fully with the Class rules mast steps can be at different heights, the mast hole in the deck can be in slightly different places, the amount of topmast above the top band can vary appreciably etc etc.

Whilst this might seem to complicate the issue it's important to have a tuning routine that sidesteps the inconsistencies and can be relied upon to reproduce the key boatspeed factors. In very basic terms this means:

1. Mast rake: so the hounds are in the right place for the jib leech to set correctly
2. Mast rake: so the mainsail leech gives the boat the correct balance and pointing potential.
3. Standing rigging: set to give fast upwind balance and sail shape but still permitting rig re-adjustment for downwind speed
4. Jib sheeting (barber haulers etc) positions: for the best jib shape in conjunction with 1. above.

A. SETTING UP THE MAST.

For these measurements, which are taken from the Upper Mast Band, you will need a 10.00 metre tape measure.. Hoist the tape up the aft face of the mast and make off the halyard when the measurement down to the black band at the gooseneck is 6325mm. The tape is at the top band ready to take the key measurements.

Top Tip: If your tape is getting old hoist alongside it a strong thin line tied to the halyard shackle. If the tape breaks you can get your halyard back!

1. THE MAST STEP

- a) Sit the mast in its step leaning gently on the aft face of the deck hole. The shrouds are slack or not attached to the chain plates
- b) Adjust the mast heel fore/aft so the measurement from the Upper Band to the deck centre at the transom is as close to 7470mm as possible

2. MAIN SHROUD LENGTH

- a) With the cap shrouds attached to the chain plates and the lower shrouds either slack or not attached, pull the mast forward and adjust the shrouds so the measurement from the upper band to the middle of the deck at the transom is 7570mm.
- b) A temporary light lashing forward to the mooring cleat helps if you're doing this single-handed.

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- c) Is the masthead on the centreline? Check to be sure it measures the same to each transom corner.

3. LOWER SHROUD LENGTH

- a) Keep the mast pulled forward so the shrouds are tight, but do not put any bend the mast.
- b) Adjust the lower shroud to also be a firm tension.
- c) If using pin-racks and have to choose a bit tighter or a bit slacker, go for the tighter option

4. JIB HALYARD

- a) Hoist a jib and attach the backstay so you can keep the mast gently pulled aft.
- b) Adjust the jib halyard so the distance from the Upper Band to the back of the boat is 7440 and mark this setting.
- c) On some Squibs this means the mast will be bearing on the back of the mast hole. This is normal and rarely occurs when sailing because there will be at least a small amount of mast bend with the mainsail hoisted.
- d) Slacken the jib halyard so the Upper Band to stern deck measurement is 7415mm . Mark the system clearly. This is for very light and very heavy conditions

5. FORESTAY

- a) Keep the jib halyard set as in 3(c)
- b) Adjust forestay to have approximately 30mm of slack. It should take no strain when the jib halyard is on its more raked setting.

B. SETTINGS AND SAIL TRIM

These notes are specifically based on our personal experience and that of many successful owners of BATT Squib sails.

THE BOATSPEED RECIPE

Basic rig and sail settings are just part of the boatspeed recipe for any sailboat.

Other ingredients include boat handling, sail trim and response to changing apparent wind speed and direction so for this reason these notes refer in part to them, as well as tuning and sail adjustment.

OUTHAUL

Upwind -

Particularly when you set the boom on or very near the centreline, the foot of the sail should be stretched tight using the outhaul. In particular the clew should be out to the measurement band for extreme light winds and when you are overpowered in strong winds.

Racing on flat water have the outhaul tight. It can pay to ease the mainsail clew 20mm - 40mm in from the measurement band for extra drive when sailing upwind in choppy conditions.

Offwind -

- a) In light or moderate winds. On a beam or broad reach the outhaul can be eased up to 75mm for extra sail fullness and power, particularly effective when surfing conditions exist. On a dead run this makes little or no difference to boat speed
- b) In VERY strong winds it makes less difference so ease the outhaul offwind if you can easily reach the string. You will have other priorities!

CUNNINGHAM

Upwind - a) In light and medium conditions: Pull it on to almost eliminate horizontal creases near the luff. A few creases do not matter. Set like this the sail will develop its maximum power.

b) For stronger wind: Extra tension on the cunningham straightens and flattens the upper part of the leech, helping it twist spill unwanted power. The more cunningham tension you apply, the more easily the sail will respond to changes and gusts.

REMEMBER: More luff tension = less power. Less luff tension = more power.

Offwind - In all wind conditions - Release the cunningham completely.

MAINSHEET TRAVELLER

Make sure you can easily set the traveller at the windward end of its track. This makes it possible to set the boom on the centreline at will. If the boom is centred in light/moderate conditions more sail twist is needed to keep the upper leech telltails flying. This is essential.

In very gusty conditions, dumping the traveller to leeward momentarily takes the 'bite' out of a gust. The traveller can almost immediately be hauled back. The boat accelerates into the gust instead of heeling and stalling. Similarly it can pay handsomely to exit a tack with the traveller 'down', to encourage acceleration.

BACKSTAY

For very light winds prebend the mast 40mm with the backstay.

This prebend is overridden by natural mast bend in any normal sailing breeze, and the backstay should be left slack. In the strongest winds only use backstay sparingly and as a final resort to depower the mainsail. Too much too soon and pointing ability suffers dramatically because the mainsail leech is too 'open'.

Offwind ease it completely.

MAINSHEET

Beating

a) Light to moderate winds:

Allow just enough sail twist for the tell tails on the upper leach to fly nicely.

With too much sail twist the tell tails will stream too easily. You are losing drive and/or pointing potential.

With too little sail twist, the tell tails will be sucked out of sight behind the sail. You are creating unwanted drag. Ease the mainsheet until the top tell-tail just reappears.

b) Strong winds

You are overpowered. Forget the leach tell tails and just worry about flattening and twisting the sail (increasingly tighter mainsheet, tight outhaul, tight cunningham, perhaps some backstay) to control the power. A flatter sail is not only less powerful, it will respond better. With careful helming and with practice a Squib copes well with the boom kept close to the centerline in quite strong conditions. The bonus is in pointing ability.

VANG (Kicking Strap)

In very light winds you must have almost no tension on the vang, or the leech will not be free to twist a little. The sail will be 'constipated' and the boat will feel dead and unresponsive. The mainsail needs to twist a certain amount to allow air to flow freely off the leech, encouraging an efficient airflow across the whole sail.

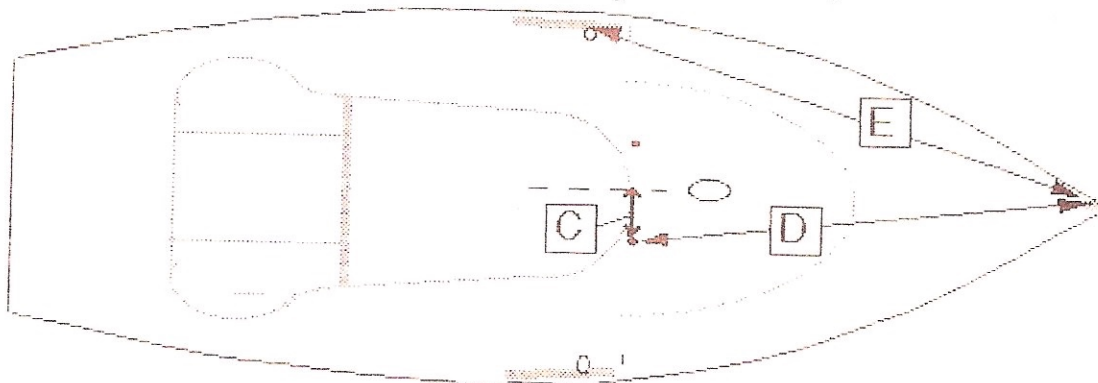
Reaching and running. A sail with some twist is fast, but tends to make for less stability, particularly running. If the boat rolls unacceptably, use extra vang to reduce twist, and/or sheet the boom closer in. It is faster to sail unsteadily with a twisting sail than it is to overtrim

JIB SHEETING

A good starting point for the fairlead position is shown in the diagram. In light to moderate winds have the barber hauler pulled right into its datum position, and from here sheet tension is the principal control of jib set for different winds. With the sail setting correctly the jib foot will sit about 150mm inside the rail, level with the mooring cleat.

C = 250 mm
D = 2585 mm
E = 3015 mm

Barber-hauler hole from C/L
Barber-hauler hole from jib tack anchor point
Jib fairlead block from jib tack anchor point



If the fairlead is too far aft the sail foot will crease and flap. No fairlead adjustment is needed for different wind strengths once the right position has been established.

However, if for stronger winds and / or in choppy water the boom is set further out, you should also consider easing the jib barber haulers .

Offwind the-barber haulers should always be eased almost to the shroud. If their control lines are linked together they will both easily adjust 'as one' at mark roundings.

JIB HALYARD ON A BEAT

The jib luff wire take the strain at all times. The forestay is slack In light winds (crew not sitting out) have the Use more jib halyard tension in medium wind, less in light winds and have a jib halyard system you can mark to easily repeat the settings you trust.

With the rig properly set up, leave the jib halyard at the same setting in all conditions (position 1) except the very lighest and most extreme windspeeds, when the halyard is eased to position 2.

In super-strong winds some Squibbers get very good speed by easing the jib halyard considerably to get more mast rake and trusting mainsheet tension to control jib luff sag. This does not suit all sailors.

Some jib luff sag is normal and the sails are designed to cope with this.

JIB HALYARD OFFWIND

On a run in any conditions and on some broad reaches , release the backstay and pull the mast forward as far as possible by tightening the jib halyard. This stops the rig slapping

about and can be trusted as a faster setting. The mast should sit at or near the front of the mast hole.

.....and finally:

Conditions change frequently during most races. A well tuned and set-up rig will cope with much of this automatically, particularly in stronger winds.

However, being alert towards potential adjustments can reap large dividends. If you're thinking that a sail adjustment may be needed, the chances are that you should already have done it!

You can always change it back. Don't be afraid to experiment with sail settings. The principles outlined here are a good foundation to work from.

Please let us know if you have any questions arising from these notes.

C. SPINNAKER HINTS

If one part of your spinnaker luff collapses before the rest, something is wrong.

With the pole height correct the luff of a good spinnaker will 'break' (i.e. progressively collapse at the luff) the majority of its height at the same time. It will fly steady with the sheet eased out considerably more than is possible with a sail either set or cut incorrectly.

If the spinnaker will set with its sheet more eased, then so can the jib and mainsail without suffering backwinding.

Keep all the sails setting but keep them as far off the centreline as possible, and you create a rig strong on drive and acceleration, low on heeling and drag.

If the spinnaker is oversheeted, then so will be the jib and mainsail, and NOTHING will destroy your boatspeed more on a reach than oversheeting the sails .

There is a very simple rule. If the luff is not 'breaking' evenly for most of its height, the spinnaker pole's outer end should be tilted towards whichever end of the luff is collapsing first as the sheet is eased:

If the UPPER luff collapses, UP should go the pole end.

If the LOWER luff collapses, LOWER the pole end.

Set your pole height to this rule on a shy reach on a manageable day and trust this set. it will be fine for all points of sailing in most conditions. Do not worry too much about the position of the inboard end of the pole on the mast, it is the height of the outer end which really matters.

Some final points:

1. Have a slightly lower pole setting for very light airs, to keep the sail more symmetrical when the clew cannot be prevented from drooping.
2. 'Kevlar' or 'Spectra' sheets make a huge difference to setting the pole effectively near the forestay in stronger winds. The Squib spinnaker guy is very long, and even a small percentage of stretch is unacceptable.
3. Less kicking strap and loads of mainsail cunningham will help you carry the spinnaker on a windy shy reach. 'In extremis' use the backstay too.

Keep the JIB sheeted 'loose'.

4. Do not raise the pole end in strong winds. It does not help.

6. Many sailors worry a great deal about hoisting, lowering and gybing their spinnaker, but pay less attention to setting up the sail correctly for speed.

Pole height is the key.