

**“THE PESSIMIST COMPLAINS ABOUT THE WIND;
THE OPTIMIST EXPECTS IT TO CHANGE;
THE REALIST ADJUSTS THE SAILS.”**

WILLIAM A.WARD



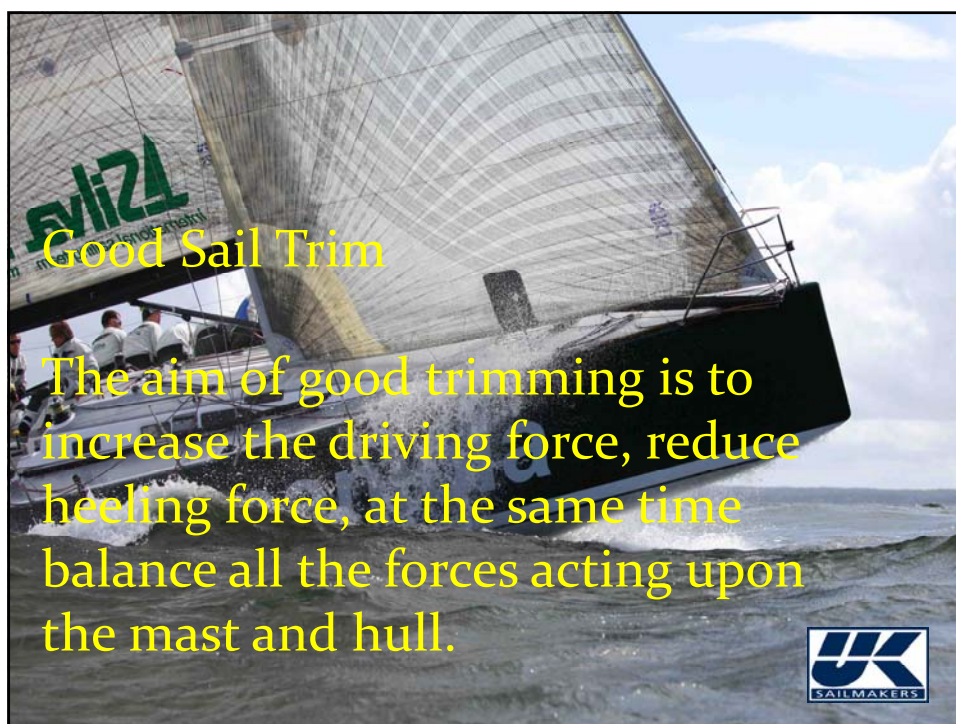
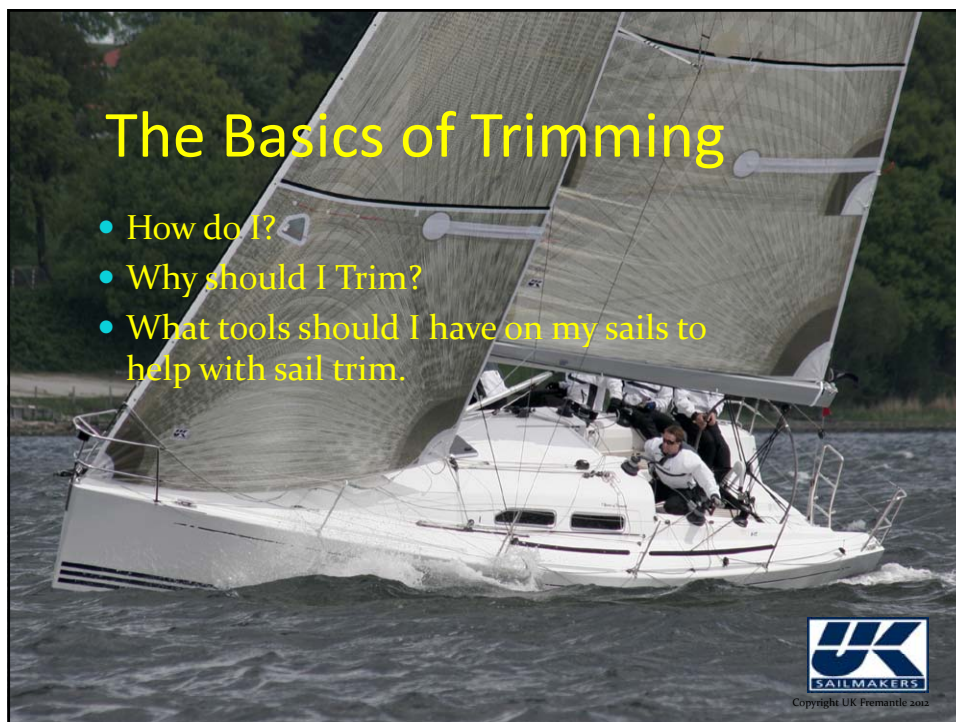
Geoff Bishop

Sailmaking for 30 years

Races Sailed

- All Western Australian Offshore Races
- Italian IOR circuit's 1988-1989
- Southern Cross Cups
- 1989 Admirals Cup including The Fastnet race.
- 10 Sydney to Hobart's, including the 1998 race.
- Giro de Italia
- International Match Racing
- Many Raja Muda Series Malaysia
- Many Kings Cups Thailand
- Transpac (LA to Hawaii)
- 2 x Sydney to Southport
- Hamilton Island Race Week
- Key West Race week
- Block Island Race week





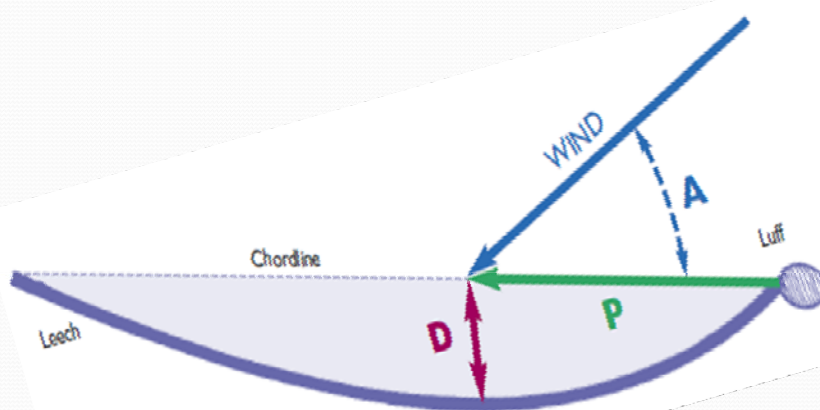
Why?

- Wind speed and angle is always varying
- Waves or current varies
- Mast and rig may be different from tack to tack
- Helmsperson may have changed.
- Because we want to sail fast and comfortably

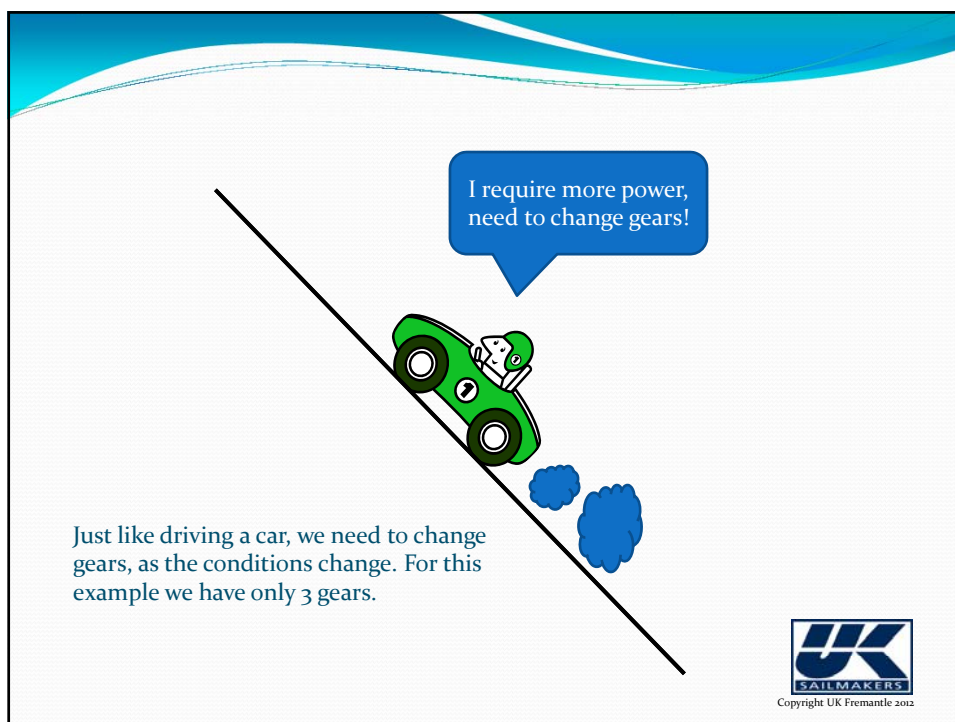


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What is he talking about....




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I require more power,
need to change gears!

Just like driving a car, we need to change gears, as the conditions change. For this example we have only 3 gears.




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1st gear

For light airs (under powered)

- Deeper sail plan. Fuller entry. Especially in chop.
- More twist
- Prioritise speed above height
- Release Backstay
- Set boom on or just below centre line
- Try to heel the boat a little
- Keep crew movement down and move slowly
- All leech tell tales should be flowing (Not hiding)
- Usually less than 8 knots.



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2nd gear

Moderate wind (full power)

- Keep Boat flat, crew weight.
- Tight leech
- Boom in Middle
- Top leech tell tales, hiding half the time
- Max Speed, with height trim (Jib tell tales 45 degrees up)
- Flatter sail plan
- Wind speed between 8 to 15 Knots.



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3rd gear

Heavy wind (over powered)

- Reduce heel
- Flatten Sails (backstay, sheet tension, car position)
- Twist sails
- Sail to the conditions, keep helm balanced
- Helmsman sail to telltales & keep constant heel angle
- Trim to what feels fast.
- In waves, sail to a slightly larger wind angle
- Wind speed above 15knots.



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Mainsail trim


What are our telltales, telling us?




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Sail trim for Speed, all telltales streaming!

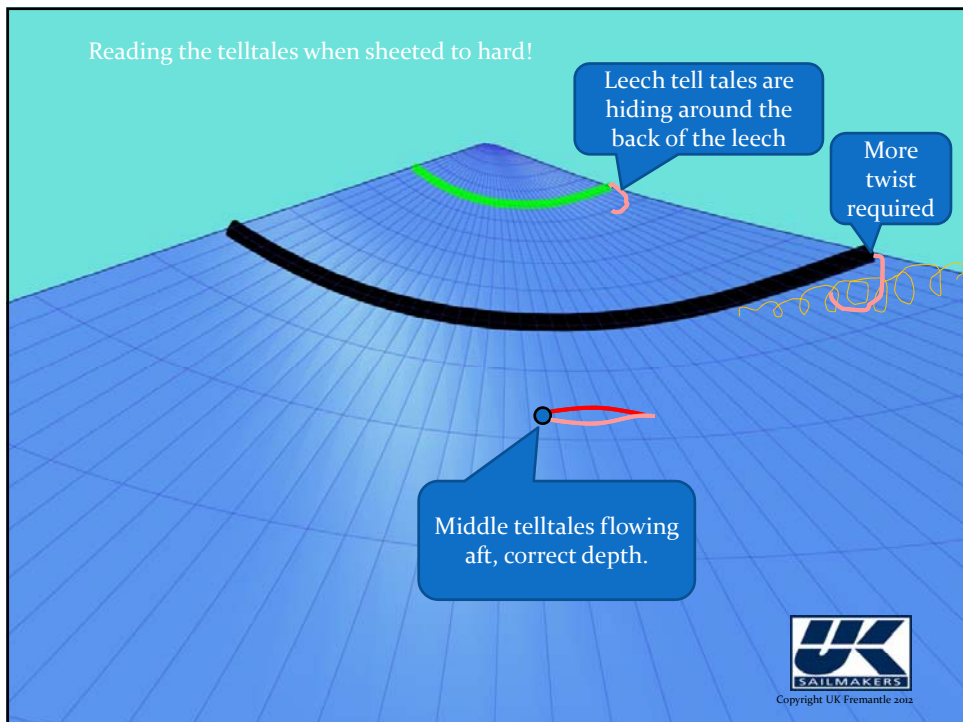
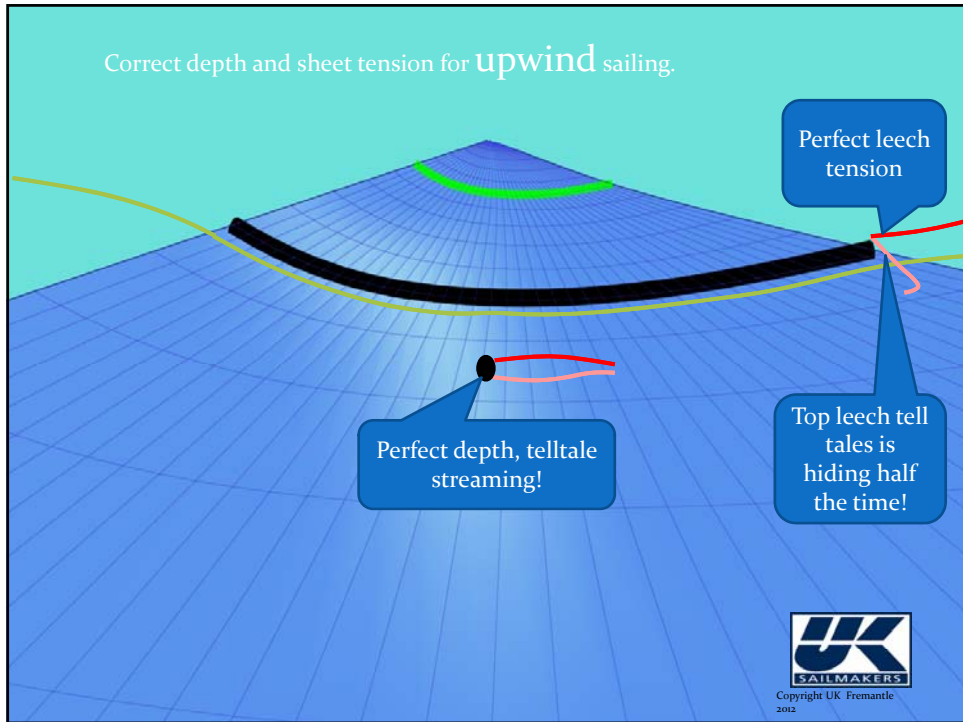
Good Laminar flow = Good speed

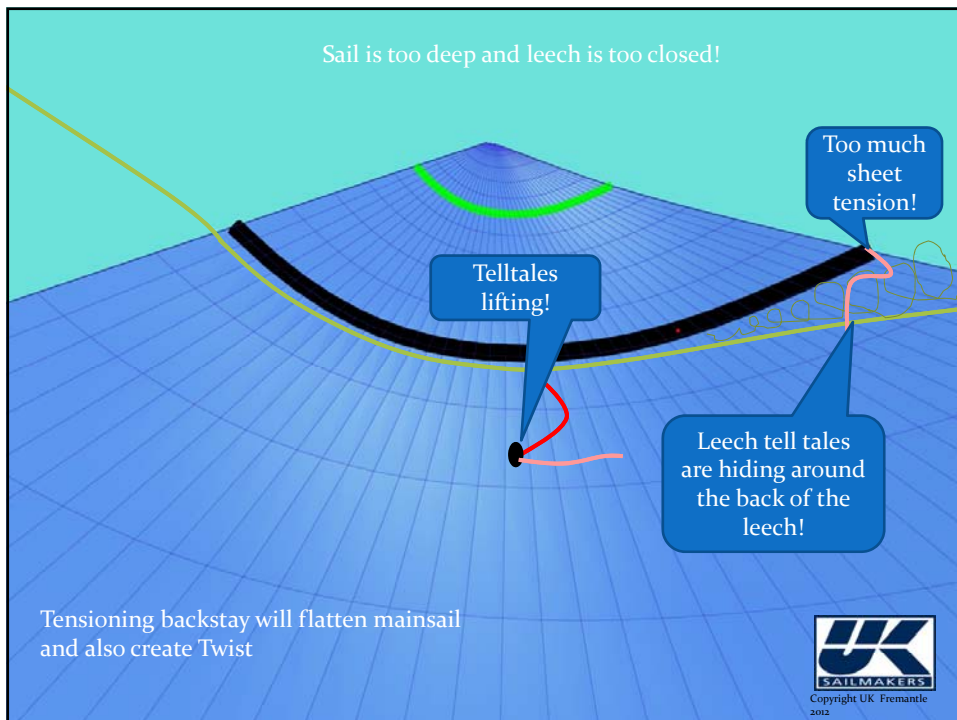
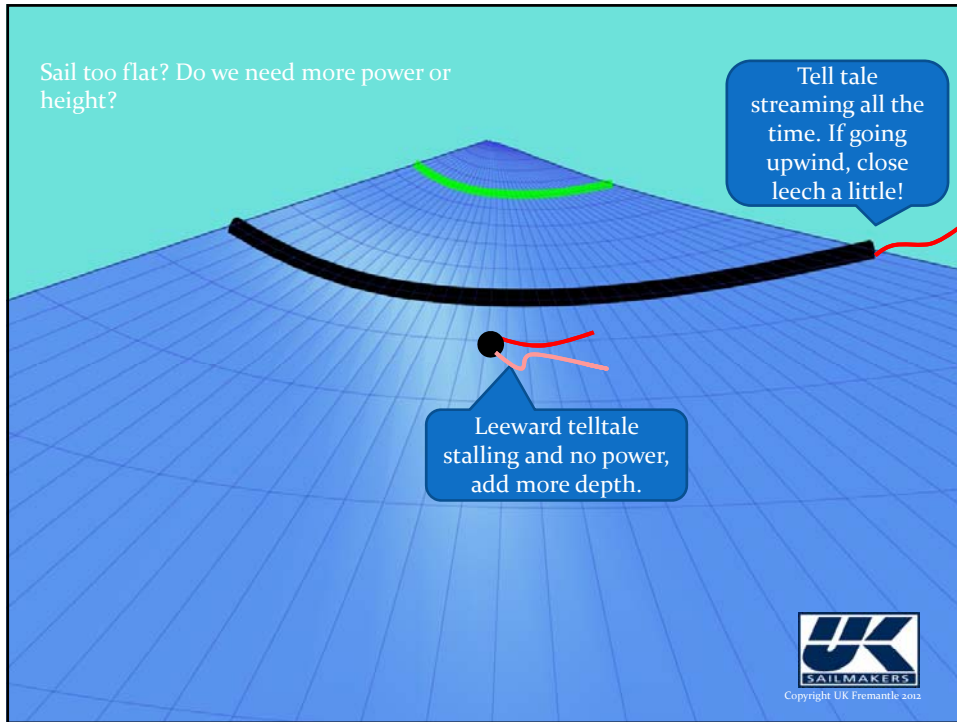


The optimum draft position for a mainsail is approx 45- 50% aft.



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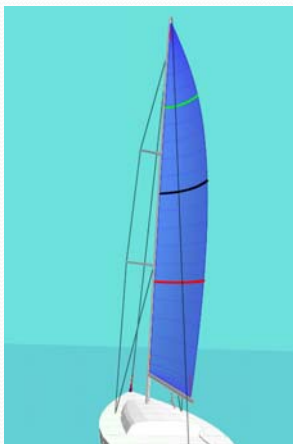




Alot of Twist

Open Leech

The mainsheet too eased, all leech ribbons are flowing or hooking to weather.
With an open leech the draft is removed from the back sail, therefore power is reduced.



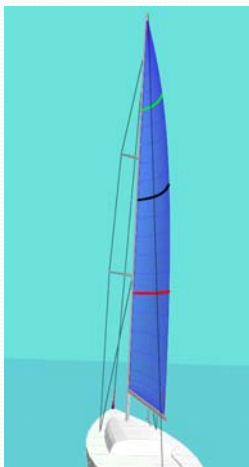
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Moderate twist

Good leech trim.

Top telltale should be stalled 50% of the time, the other 3 lower telltales streaming aft.

Note: Normally the top batten will be parallel with the boom when sheeted like this.

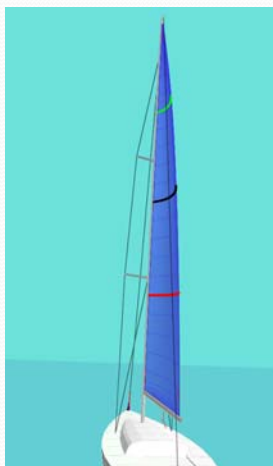


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Very little twist

Closed leech.

Leech telltales stalling (hooking to weather) 75% - 100% of the time.
Lots of heel and very draft aft.

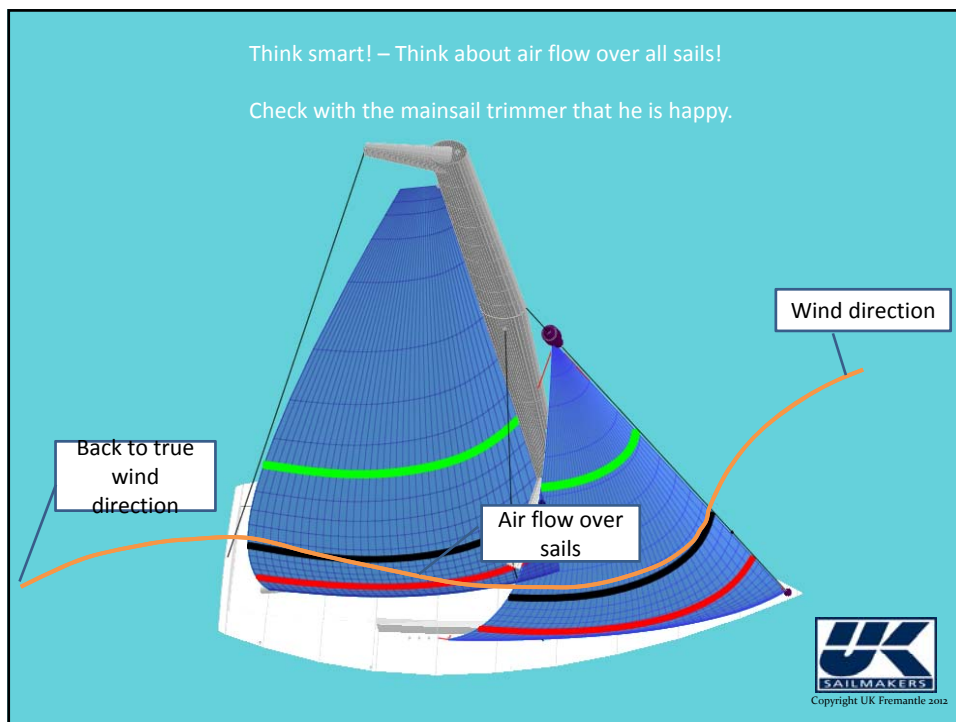


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Headsail Trim



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Jib Car Leads

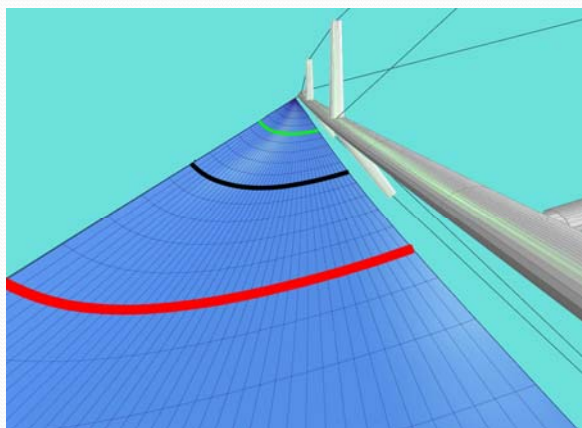
Correct sheet
 For a new sail, a good starting point for the correct car position can be found by placing the car along the deck so that the extension of the sheet intersects the luff at 50% when sheeted on the wind. All of the luff telltales should lift together.

Genoa car too far aft.
 Top telltale will lift before the bottom telltales, this indicates that the headsail has too much twist.

Genoa car too far forward.
 Bottom telltales lift first, sail is too closed, as well as the bottom of the sail being too deep, you may find the mainsail to be back winding.

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Straight Forestay.

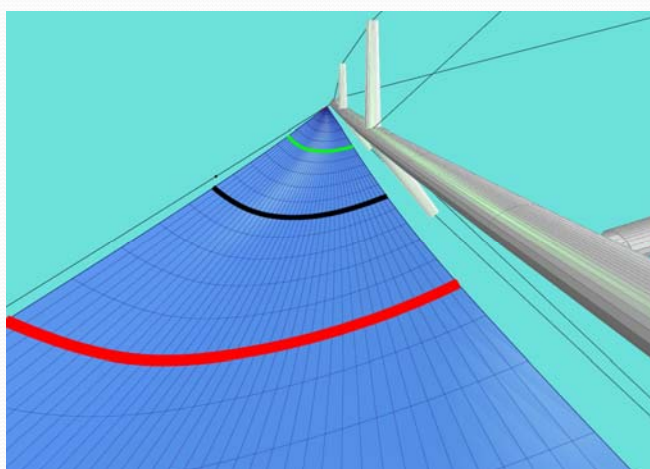


The optimum draft position in a headsail is approx 35 - 38% aft



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Headsail with forestay Sag.



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Forestay Sag and halyard tension

HALYARD'S EFFECT ON DRAFT LOCATION

DRAFT FORWARD
Created by greater luff tension.

DRAFT AFT
Created by minimal luff tension.

HALYARD'S EFFECT ON ENTRY ANGLE

Decreased halyard tension produces flatter entry angle, which is more likely to stall, yet allows an attentive person to point higher.

Increased halyard tension produces fuller entry angle, which is more forgiving, i.e., an unsteady helm is less apt to stall the sail.

3
Both halyard and forestay are medium tensioned. Draft position is 40%.

4
The stay is now tensioned for *optimal pointing*. The sail becomes flatter with a finer entry but the draft has moved too far aft.

5
By tensioning the *halyard* the draft is moved forward to about 45%, which will be desirable in this example.

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Headsail tell tales

Leeward telltale is stalling?
Can mean Entry is too fine, ease backstay, sail is over trimmed, ease sheet or head up.

Fine tuning

By pointing higher or lower "in the groove" you may, by using the windward telltales, fine tune for each of the above gears.

- Maximum speed
- Optimum pointing ability and speed
- Maximum pointing ability

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Draft Stripes

Not only do they:

Add colour to a boring white sail!

Help us to stick sail numbers straight.

They do make it easier to see the draft position and depth of the sail.



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LIGHT AIR
Etchells jib



Middle Draft Stripe
Draft position 34.9% aft
Depth 16.4%




MEDIUM AIR
Etchells jib

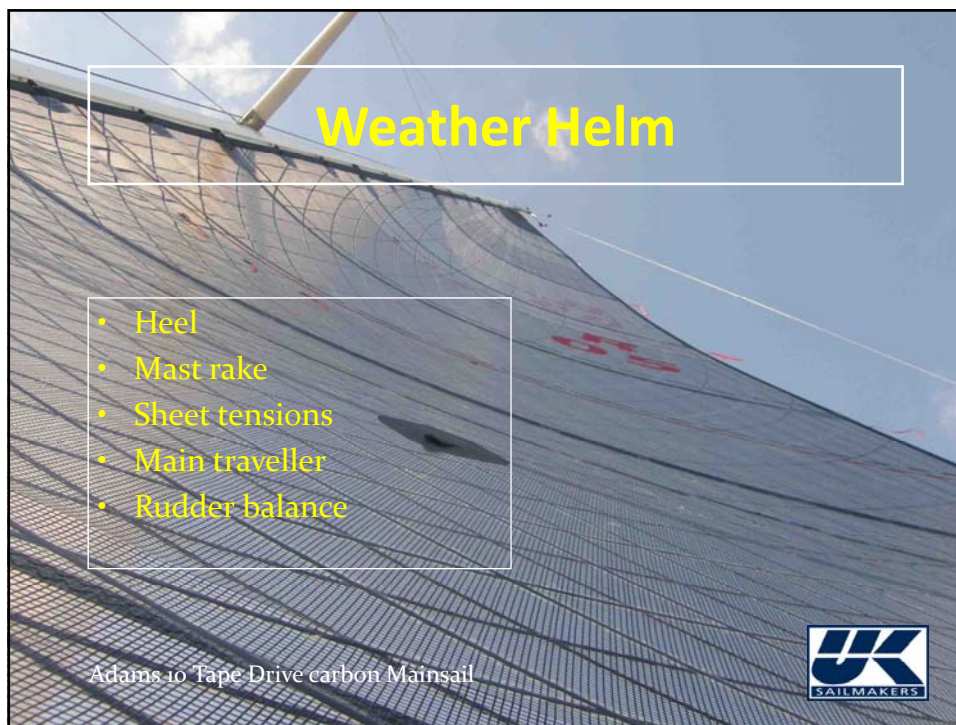
Middle Draft Stripe
Draft position 34.1% aft
Depth 15.2%

Genoa Sheeting, off the Wind



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Pole forward or aft?

The pole angle is correct when the luff of the spinnaker flies nearly straight up as it leaves the pole. Squaring the pole too far aft means the sheet will need to be over-trimmed, causing the luff to angle off to leeward. When the pole is too far forward, the sheet will be over-trimmed and the luff will angle off to windward.

Pole too far forward

Pole too far aft

Pole angle perfect

Spinnaker Trim

Good pole angle, for running, clews level, and maximum projection.

Crew training & handling is very important.



Questions?

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