

Reefing Demonstration - Wayfarer Cruising Conference 2008 N.C.S.C.

"...as a heavier squall laid us farther over Curlew began to gripe round into the wind again, despite all the effort I could make with the tiller line... Barney's face was unmoved. 'The old girl's asking us to tuck a reef in,' he remarked, and in a few moments [having reefed] ...Curlew was away still on starboard tack, but sailing less on her side and picking up speed..."

(Maurice Griffiths – Swatchways & Little Ships).

Why reef?

- To reduce sail in (or before) rising wind, in order to maintain control, reduce heel, avoid accident/damage/wear/fatigue to boat, crew & sails, or occasionally just to slow down a bit (e.g. accompanying slower boat, waiting for tide etc.).
- Not a panacea. Sub-optimal sail/boat performance – a compromise. Drag+heel : drive ratio becomes increasingly disadvantageous, at least to windward. Increasing uncomfortable awareness of wind's effect on stays, mast, hull, even self!

Balanced Sail Plan concept

- Sails, foils, hull and crew working properly together. Slight weather helm (tendency to turn to windward) is desirable ("feel", gust response & MOB), but must avoid excess - wear/fatigue/speed loss.
- Note relationship between centre of effort & centre of lateral resistance – both raising the centreboard (desirable if v. windy) and (see later) reefing the mainsail tend to create/increase lee helm (tendency to turn away from the wind) hence the following...

The Genoa (& jib)

- First response to the need to reduce sail – quickest, easiest sail to reef. Remember balanced sail plan, although, usefully, the area removed at leech of genoa is fairly central in boat.
- Furling vs. reefing:-

Some advantages of Furling system:-	Some advantages of Reefing system:-
<ul style="list-style-type: none">● Forces a conscious decision on sail plan	<ul style="list-style-type: none">● Almost infinitely variable sail plan
<ul style="list-style-type: none">● May mean spare sail is available if damage/loss occurs	<ul style="list-style-type: none">● No hazardous foredeck work to change sails
<ul style="list-style-type: none">● Separate forestay can mean simpler rigging/bridge-shooting etc.	<ul style="list-style-type: none">● No forestay wrap (if enclosed)
<ul style="list-style-type: none">● Sails work optimally "as cut"	<ul style="list-style-type: none">● Ideal for singlehander
<ul style="list-style-type: none">● Lower cost if owning good sails already, (& for sometime racers?)	<ul style="list-style-type: none">● Cost advantageous if replacing sails and/or upgrading furling gear

- Furling drum – enclosed/open, diameter, capacity, durability.
- Halyard swivel – high-load? Cheaper versions require temporary easing of rig tension...
- Forestay - enclosed/not, adjustable from cockpit? (good for bridges & solo rigging of boat etc). Spacer needed if forestay not enclosed, to minimise risk of wrapping – triangles, discs.
- Luff spar – rigidity/flexibility, profile, weight, torsion resistance, separate halyard on spar?

- Fixed/demountable spar. Is safety-wire necessary in case of breakage or accidental release of halyard? Also convenient at bridges & when rigging. Muscle box halyard attachment (hook vs. pin).
- Storage of spar & sail – on or off boat? - wind, UV, security. Sail cover (breathable) or at least a strong tie and a sacrificial leech strip are a must.
- Transport considerations – length & rigidity of spar. Use the sail cover if sail is left on spar. Suspend under mast for travelling.
- Telltales – ideally an additional set required if reefing installed.
- Foam insert at luff? Takes up fullness in middle of sail, but disturbs air flow.
- Sheet length – esp. if continuous sheets used. Also consider safe access to foredeck.(trip hazard).
- Remember to release rig tension after sailing if genoa is kept on boat!

The Mainsail

- Compared with genoa, reduction in area occurs significantly further aft (remember sail balance).
- Less convenient to put reef(s) in (or shake out).
- Other effects on boat – visibility, buoyancy pocket.
- Reef points – number & position. (Arguably 2 optimum, around 1 metre apart).
- Angle of lower batten pocket – optimised for reefing or for rolling the sail?
- Boom angle – worthwhile having leech cringles slightly higher?
- Kicker – ease & range of adjustment should permit convenient reefing of mainsail.
- Halyard cleating – ditto.
- Reef line block position to create c.45° downward/outward angle of pull on leech cringle.
- Ties – continuous weave vs. single ties (e.g. Tiga ties).
- Reefing lines – excess line needs to be held with bags/ties.
- Luff cringle hook/line – hook tidier. Position - sail shape vs. convenience of use.
- Scandalize main (raise boom end) using reefing for outboard & rowing etc.

Conclusion

- Reef for safety & comfort.
- Consider the whole boat, including crew. “Listen” to both.
- Critically appraise boat, gear and self – all should be reliable, effective & efficient.