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UPDATING THE CLASSIC POTTER 19

I. Potter Hull shape

- **A. Hull is a great candidate for updating**
- **B. Can sail faster than displacement hull speed due to flat panels**

II. Potter 19 Sport and Voyager 20 vs Classic 19

1. **Sport and Voyager have more ballast than Classic P19**
   - ***a) Stiffer than a P19 classic***
   - ***b) allows boat to carry more sail area***
2. **Sport and Voyager have a Taller Mast than Classic P19**
   - ***a) Faster boat than the P19 Classic***
   - ***b) 30% more sail area overall***
   - ***c) 25' mast, 7/8 fractional rig***
3. **Judy B's Potter 19 Sport – Fastest, Stiffest, Sportiest Potter**
   - ***a) 300 pound keel bulb at bottom of the standard steel keel = 570 pounds***
     - (1) Draft 49"
     - (2) Boat has 2.5 times more righting moment than Classic Potter –
     - (3) Self-righting in a knockdown
       - *(a) Angle of Vanishing Stability was calculated @ 102-104 degrees*
   - ***b) Bow sprit for Asymmetric Cruising Spinnaker –***
   - ***c) New P19 interior without port cabinet is much more open inside.***
4. **Marine's Voyager 20 – Biggest, very stable, most comfy Potter**
   - ***a) LOA is 19.5'***
     - (1) Added 1' to cockpit, new lockers, etc.
   - ***b) Shoal keel with approx. 500-600 pounds ballast***
     - (1) Boat tracks extremely well, like a cutaway
   - ***c) No keel trunk in cabin.***
   - ***d) New Interiour without port cabinet is very open inside***
   - ***e) Boat is much stiffer than Classic Potter***

CRUISING SPINNAKERS: SAILING FASTER THAN THE WIND

III. Modern Sailplan

- **A. Mainsail**
- **B. Working jib for upwind work**
  1. **Also for all points of sail in high winds**
- **C. Free-flying Spinnaker**
  1. **Replaces your big genoa or drifter**
  2. **Cruising Asymmetric Spinnaker**
     - ***a) You can sail downwind faster than the true wind***
     - ***b) Use like a genoa or drifter for upwind angles in lighter winds***
  3. **Cruising Code Zero**
     - ***a) You can sail upwind faster than the true wind***
     - ***b) Use for downwind angles in higher winds***

IV. Apparent wind diagram.

- **A. If you sail faster than the true wind, the apparent wind is always on your bow**
  1. **Upwind**
  2. **Downwind too!**
- **B. If the wind is on your bow, your sails can be used to generate lift**
  1. **You are always in "pointingmode"**
  2. **Like fast catamarans.**

V. Downwind sailing

A. Spinnakers generate lift, which is faster than "push" mode

1. Spinnaker concept

a) Projecting the luff to windward, to get air flowing around the sail, generating lift

b) "squaring the pole/luff to the wind" to get the luff positioned at the right angel of attack.

(1) (using symmetric spinnaker to illustrate the concept of generating lift downwind)

B. Poled out headsail is generating "push" – slower

1. Classic "wing and wing"

a) Dead down wind

b) Can't go faster than the wind

(1) Would need 10x more sail area

c) More work than an asymmetric spinnaker

2. Twin headsails –

a) very stable,

b) good for relaxing on a offshore passage,

c) but comparatively slowstill

d) More work than an asymmetric spinnaker

C. VelocityMadeGood – which is faster?

1. DDW wing and wing, boat speed slower than the wind
2. Gybing, boat speed faster than the wind (YES!)

VI. Cruising Spinnaker - Sail downwind faster than the wind.

A. Cruising spinnaker

1. No pole
2. Apparent wind between 90 and 140, sailing as deep as your boat can
3. True wind speeds 1-20 knots (2-15kts for lightweight trailer boats)
4. Making the sail smaller and flatter permits use in higher winds.

VII. Cruising Zero -Sail upwind faster than the wind in light winds

A. Apparent wind diagram

B. Cruising Zero (aka multihull screecher, Reaching Asymm)

1. No pole – straight luff with anti-torsion rope
2. Apparent wind between 40 and 90 degrees, 2-10 knots
3. Making the sail smaller and flatter permits use in higher winds.

VIII. Racing codes: (Just for reference, not really for cruising sailors)

A. Even # for downwind

B. Odd # for upwind

C. Higher # - smaller area, flatter, used in higher winds

D. Summary:

1. Code 0: Apparent wind between 40 and 60 degrees
2. Code 1: Apparent wind between 60 and 90 degrees, 2 to 10 knots
3. Code 3: Apparent wind between 60 and 110, 11 to 18 knots
4. Code 5: Apparent wind between 70 and 120, 18 to 25 knots
5. Code 2: Apparent wind between 90 and and 140 , 8 to 20 knots
6. Code 4: Apparent wind between 100 and 180, 18 to 30 knots
7. Code 6: Apparent wind between 120 and 180, over 25 knots.

IX. Sail Handling for Cruising Spinnakers

A. No Spinnaker Pole

B. Launching from the companionway – timeless, inexpensive

1. Classic Potters (15 and 19): small Cruising Spinnaker, tacked to bow pulpit.
2. Potters and small trailerables: stick to small area due to boat stability and for safety.
3. No need for special gear other than a companionway launching bag

C. Snuffers – 1990's –

1. starting at $100-200 for smaller boats

2. usually launched from foredeck

D. Asymm furlers – 2000's

1. Launch and douse from the cockpit, easily.
   a) *Continuous furling lines for downwind spinnakers*
   b) *For asymmetrics with rounded luff*
      (1) Eg Gennaker, Cruising Spinnaker
   c) *Selden GX furler – is currently least expensive starting at about $850*
2. Upwind furlers
   a) *For reachers with straight luffs, special Anti-torsion luff rope*
   b) *Ronstan Series 60 under $300*

E. Optional Bow sprit kits available – under $500

1. Separation between the mainsail and headsail
2. Gets the luff of the spinny out from behind the mainsail
3. Lets you sail deeper angles with the mainsail still up.
4. Example: Selden

X. Engineering calculations for strength and safety

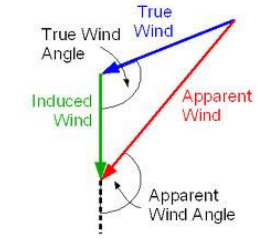
A. Righting Moment as measure of boat "stiffness"

1. Determines how much sail area you can have vs heeling
2. how strong to build the boat
   a) *Mast stiffness and chainplate location*
   b) *Hull layup*
   c) *Block sizes*
   d) *keel trunk*

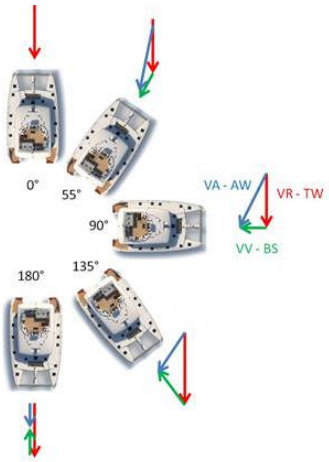
B. Ultimate stability in case of knock down

1. Center of buoyancy
   a) *Hull shape*
2. Center of gravity
   a) *Ballast weight and location*

A



bove: upwind



DOWNWIND

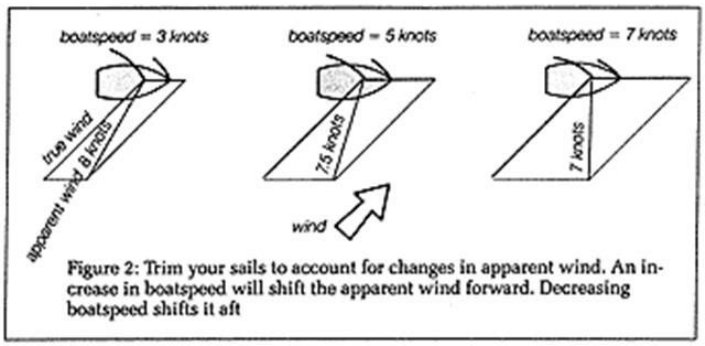
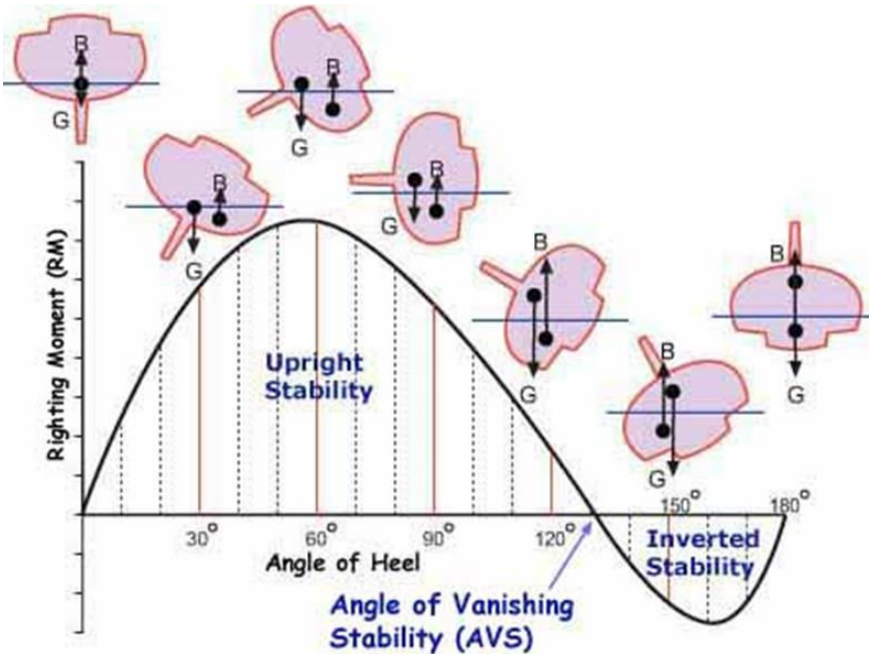


Figure 2: Trim your sails to account for changes in apparent wind. An increase in boatspeed will shift the apparent wind forward. Decreasing boatspeed shifts it aft

Downwind - if you go fast enough, will the wind be tighter than 90 degrees? Yes!


B
G
Righting Moment (RM)
Upright Stability
30°
60°
90°
120°
150°
180°
Angle of Heel
Inverted Stability
Angle of Vanishing Stability (AVS)