CHANGING GEAR

You are going well. The boat is flying and you are up with the pack. Then, quite suddenly, horribly, and often without apparently altering anything, it all changes. To leeward boats point higher and go faster and the windward boats start to roll over. So, what has happened? Why are things going wrong and what can you do about it?
Firstly, DON'T PANIC. You were going well and can do so again, providing that you are logical. So, identify whether it's a pointing problem or a speed deficiency and then apply a check list of cures. Don't forget to alter only one thing at a time and then give it a chance to work before going on to try the next.

So, you need to POINT HIGHER.

1. Q. Is the Mainsail leech too open?
   A. Try tightening it by:
      a) increasing main sheet tension
      b) increasing kicking strap tension
      c) bring the boom closer to the centreline

Use the angle of the top batten to the boom as your guide, ideally it should be parallel. The top windtuft should, in fact, be streaming aft most of the time, but stalling it, up to 40% of the time should give the best pointing ability, although at the expense of speed.

2. Q. Is the Mainsail too flat?
   A.
      a) straighten mast
      b) ease clew outhaul

If the mainsail is too flat the leech is likely to be too open and the slot between the foresail leech and the front of the main too wide. A good guide here is that if the main luff does not backwind in medium conditions from time to time, then the mast is too bent. Also the sail can have large diagonal creases which in extreme cases will flutter.

3. Q. Is the Foresail too full at the luff?
   A.
      a) increase rig tension
      b) ease luff cunningham until luff has minute wrinkles.
      c) move fairlead closer to the centreline.

Identify this problem by luffing up rather more than usual to see if the whole luff length collapses at the same time. As increasing the rig tension straightens out the angle of attack, it is possible to go too far and make the sail difficult to "read".

4. Q. Is the Foresail leech too open?
   A.
      a) sheet foresail harder
      b) move fairlead forward
      c) reduce mast rake
      d) increase jib halliard tension

This problem shows itself when luffing up more than is usual. If the top windward windtuft collapses first, tensioning the foresail halliard reduces rake, raises the clew and so tensions the leech.

5. Q. Is the Helm too neutral and has no "feel"?
   A.
      a) increase mast rake
      b) sit further forward
      c) angle centreboard forward

Some "feel" is necessary to the helm in order to keep the boat on track when the helm is looking elsewhere. Up to 70% of windward concentration is spent in looking outside the boat in anticipating what changes in the environment are about to affect the boat.

So, try one adjustment at a time, waiting a while to see if it makes an improvement.

So you want to GO FASTER?

6. Q. Is the Mainsail too full?
   A.
   a) bend the mast more
   b) tighten clew outhaul

Aim to make the sail inert in the gusts, so that it feathers rather than flaps. In a breeze the very best speed seems to come when the top quarter of the sail has very little curve and will seem almost straight when viewed from below. The top telltale will stream all the time.

7. Q. Is the Mainsail leech too tight?
   A.
   a) increase mast bend
   b) ease boom away from centreline on mains sheet/ bridle/traveller
   c) tighten clew outhaul

Signs that the leech is too tight are excessive and uncontrollable heeling in gusts, and the boat tries to luff up viciously.

8 Q. Is there excessive weather helm?
   A.
   a) keep boat level and do not allow to heel
   b) reduce rake
   c) move crew weight aft
   d) raise centreboard a fraction

This problem shows itself particularly in gusty conditions when the out of balance boat tries to luff into the wind as the gust hits. Keeping the boat flat and moving aft not only keeps the hull shape symmetrical but also makes best use of the fatter, flatter aft sections.

9. Q. Is the Foresail angle of attack too shallow?
   A.
   a) reduce halliard tension and/or
   b) reduce rig tension overall
   c) tension foresail cunningham
   d) move fairlead outboard

If the angle of attack is shallow the sail is not only difficult to read but the centre of effort goes aft. When this happens, the bottom windtufts become unstable as first the windward one and then the leeward one stall out as the airflow fluctuates from one side to the other.

10.Q. Is the Foresail Leech too tight?
   A.
   a) ease sheet slightly
   b) move fairlead aft slightly
   c) increase mast rake

This shows as excessive mainsail backwinding and the lower windward windtuft collapses before the top one. Aim to keep the middle leech parallel to the centreline with leech at .75 height being 5% - 10% open and the leech at .25 height being 5% - 10% closed. Tiny movements of sheet and fairlead adjustment have massive effect of the leech so don't overdo them.

So, as a general rule, flatter is faster, while a tighter leech improves pointing.