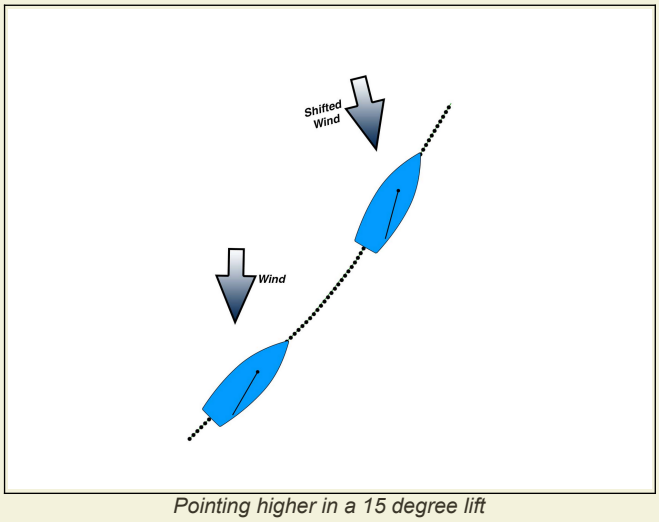
FatSparrowRacing

Sailing in Shifts

With a little bit of sailing experience you realize that the wind is constantly changing direction. To the sailor, changes in wind direction are called “shifts”

Lifts

When sailing close hauled, if the wind changes direction toward the stern of the boat, you will be able to point higher. Such a shift in wind direction is called a "lift".



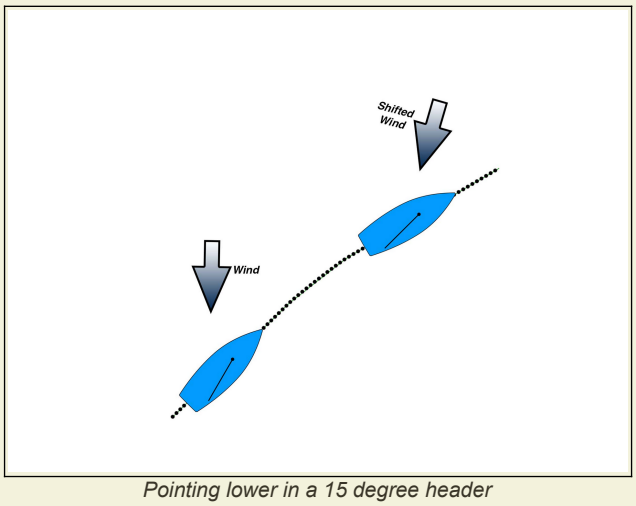
Pointing higher in a 15 degree lift

Lifts are helpful when close hauled, as they allow the boat to point more in the direction of the windward mark.

Headers

If you're sailing close hauled and the wind shifts toward the bow of your boat, the sails will start to luff and you have to point lower to keep the sails full. This type of shift is called a "header." It is common to say the boat has been "headed" or "has sailed into a header".

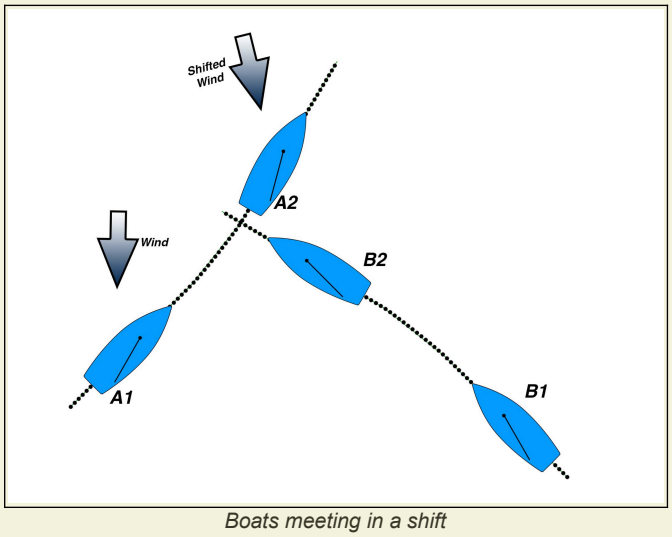
Headers are generally not helpful as they cause boat to point further away from the upwind destination.



Pointing lower in a 15 degree header

Tacking on Headers

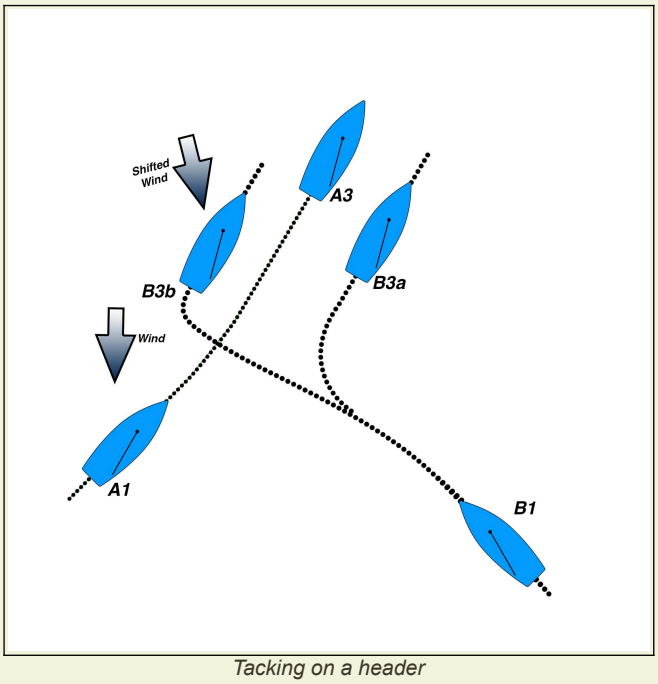
The next diagram shows two boats about to cross; A on port tack and B on starboard. At position A1, A is ahead of B, but not enough to safely cross ahead when they meet. The wind then shifts to give A a lift. Note that the same shift is a header for B. The shift has advantaged A and allowed it to pass ahead of B. We can see that a lift on one tack is a header on the other.



Boats meeting in a shift

Tactically B has a number of options (see diagram below):

- Continue sailing the header on starboard.
- Tack to leeward of A being careful to avoid A's dirty air (B3a).
- Sail through to windward of A and tack on her hip in clear air (B3b).



Tacking on a header

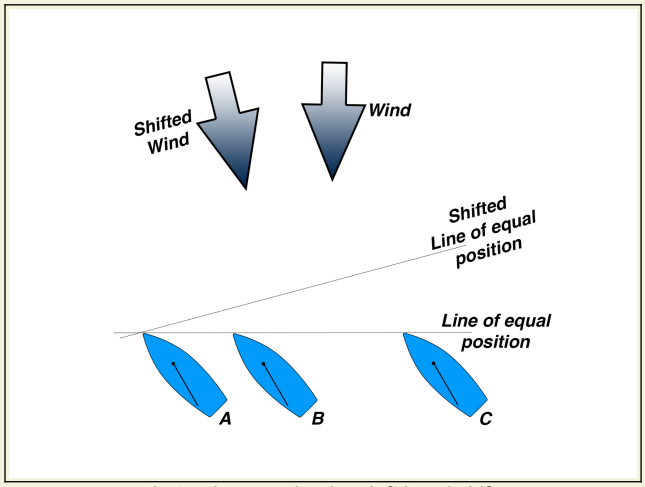
Both boats now have the benefit of pointing closer to the upwind destination. Any wind shift while sailing close hauled requires a change of course and generally

headed boats will tack.

Lateral Separation in Shifts

If an imaginary line is drawn at right angles to the wind direction, all boats on that line are in equal position. They all have the same distance to sail to reach the windward mark. If the wind now shifts left as shown in the diagram below, a new line of equal position (at right angles to the new wind direction) shows that boats B and C have fallen behind A who is the left-most boat. A has gained a little over B and a lot over C. B has also gained over C. You can see that the greater the lateral separation, the greater the effect of the shift on boats relative positions.

But A and B are now being headed. They will want to tack onto port to pick up the lift and hopefully cross ahead of C to cement their gain.



Lateral separation in a left hand shift

Where the lateral separation between boats is large, positional gains (and losses) due to wind shifts can also be large.

Tactics in Wind Shifts

When sailing close hauled in shifts:

- Use a lift to point higher towards your upwind destination.
- Tack on headers to get a lift on the opposite tack.
- Left shifts favour boats on the left. Right shifts favour boats on the right. If you think the wind will shift in a particular direction up the course, plan to be on that side. The more lateral separation you have when the shift goes your way, the greater the gain. However, if the next shift doesn't go your way ...

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