

Wallying

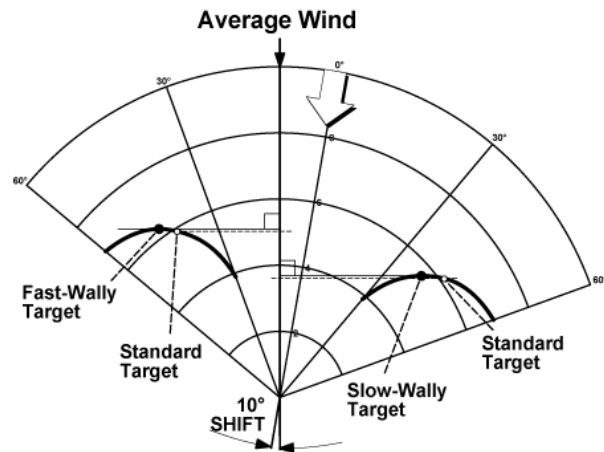
Wallying is a technique for gaining advantage of wind shifts when it is inadvisable to tack. When is tacking advisable? See [Tacking](#). “The Wally” was invented in Fremantle where the wind shifts were regular, but too short to exploit (there were also significant tactical reasons not to tack).

The basic idea is that when the wind shifts back and forth at least once during a leg, you should change your objective to maximizing Vmg up or down the average wind instead of the current wind. This change of perspective always increases your speed to weather or downwind relative to maximizing Vmg on the current wind. And it also pumps your lateral separation in such a way that wind shifts always help you and hurt them.

You should always Wally

Performance improvement

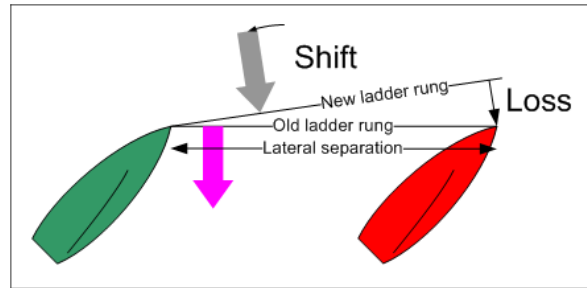
Here you see a polar rotated to align with the wind shift. The standard target points also rotate but there are new target points maximizing Vmg up the average wind. On the lifted tack wally targets are faster than target speed, and on the headed tack they are slower. In both cases you will notice that your Vmg (up the average wind) is better than standard targets. Thus, no matter whether you are in a lift or header, Wallying increases your Vmg relative to standard target speed.



The performance component of wallying is typically worth about 5 seconds per mile.

Lateral separation

Being “On the wrong side of the shift” means that if you are to the right of your competition and the wind shifts left (or vice versa), you lose distance to weather. It has nothing to do with how fast you are, it depends on your lateral separation.

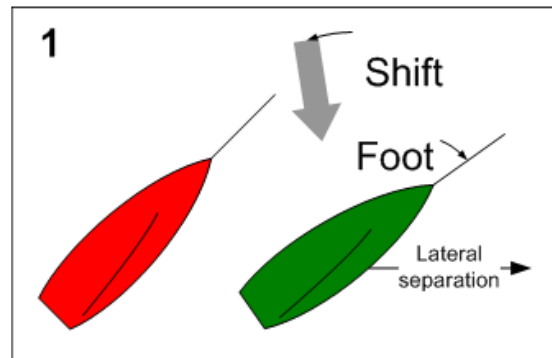


$$\text{Gain or Loss} = \text{Separation} * \sin(\text{Shift})$$

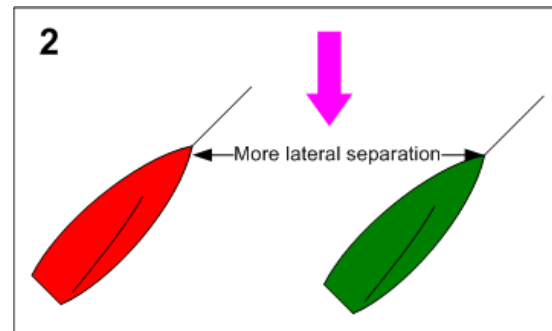
A 5° shift gains/loses about 9% of your separation

Pumping lateral separation. How it works

Green foots on the lift, increasing lateral separation at no cost in Vmg (up avg).

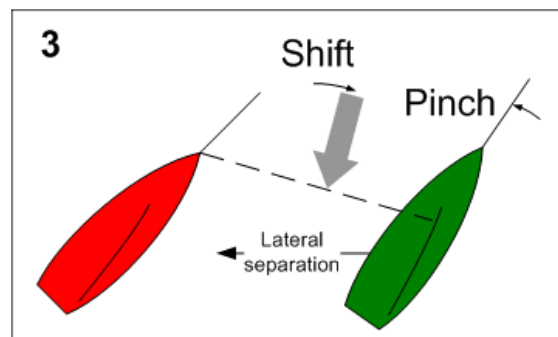


When the lift ends, Green has increased lateral separation.



When the opposite shift happens, Green is ahead due to the increased separation.

Now he pinches in the header so the lateral separation gets smaller, in preparation for the next left shift.



Super-pumping lateral separation

Since the gain depends on lateral separation, a single gain can't be assigned to it. However, it can be **big**.

You can actually pump separation more than normal if the situation requires it. As you remember, optimal Wallying produces a bit of gain to weather. You can trade in that extra Vmg and pinch or foot more than optimal to change separation a lot faster without losing Vmg.

Practical Wallying

You can determine exactly how much to Wally if you have a polar diagram. However, if you don't, there is a simple rule of thumb:

Pinch or foot by half the change in wind direction.

For a 10° lift, foot 5°.

For a 10° header, pinch 5°.

Since there is no cost involved, you should always Wally when you aren't tacking.