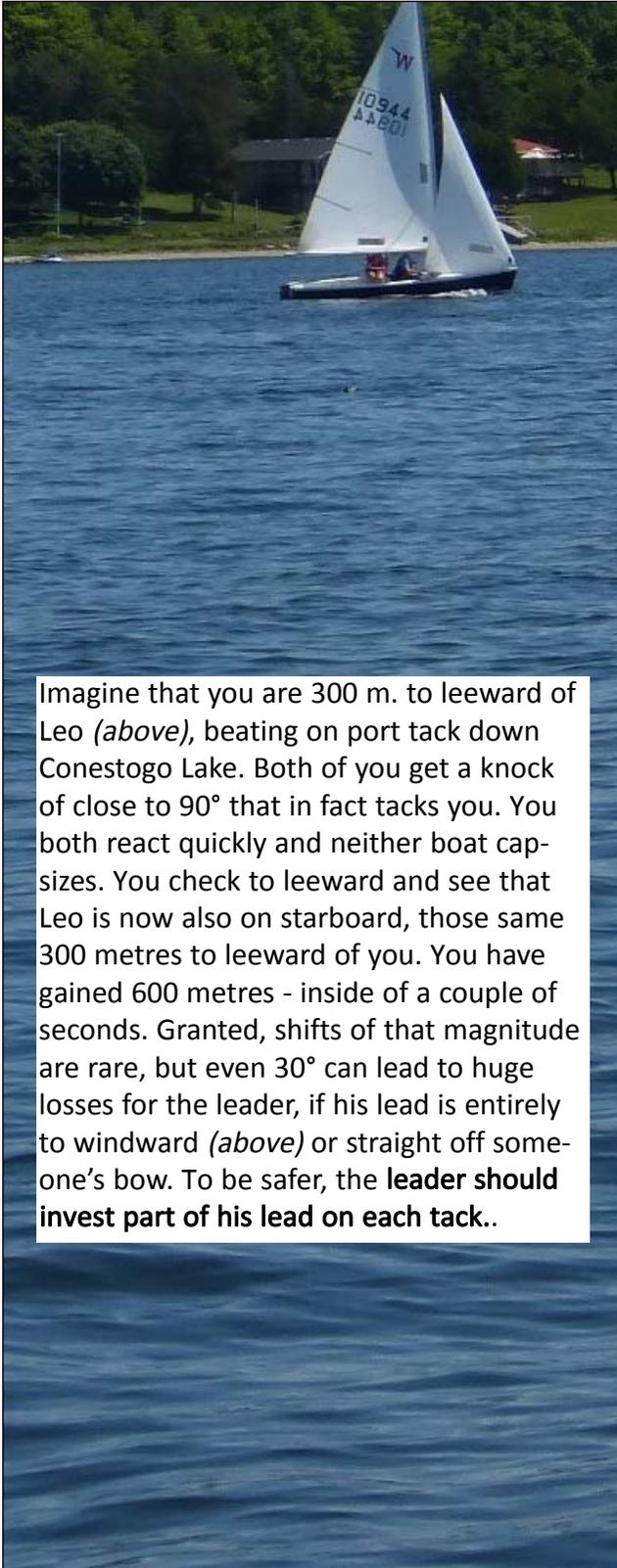


7 It's All in Your Mind

Well ... much of it, anyway. Sail smart, sail fast. Unlike most physical sports, sailing is something one can do at a very high, competitive level to a ripe old age. In sailing, the Glory Days celebrated so well by Bruce Springsteen, can be made to last a long time - because so much of sailing is mental.



Imagine that you are 300 m. to leeward of Leo (*above*), beating on port tack down Conestogo Lake. Both of you get a knock of close to 90° that in fact tacks you. You both react quickly and neither boat capsizes. You check to leeward and see that Leo is now also on starboard, those same 300 metres to leeward of you. You have gained 600 metres - inside of a couple of seconds. Granted, shifts of that magnitude are rare, but even 30° can lead to huge losses for the leader, if his lead is entirely to windward (*above*) or straight off someone's bow. To be safer, the **leader should invest part of his lead on each tack.**

The Trout Lake shift, 1966



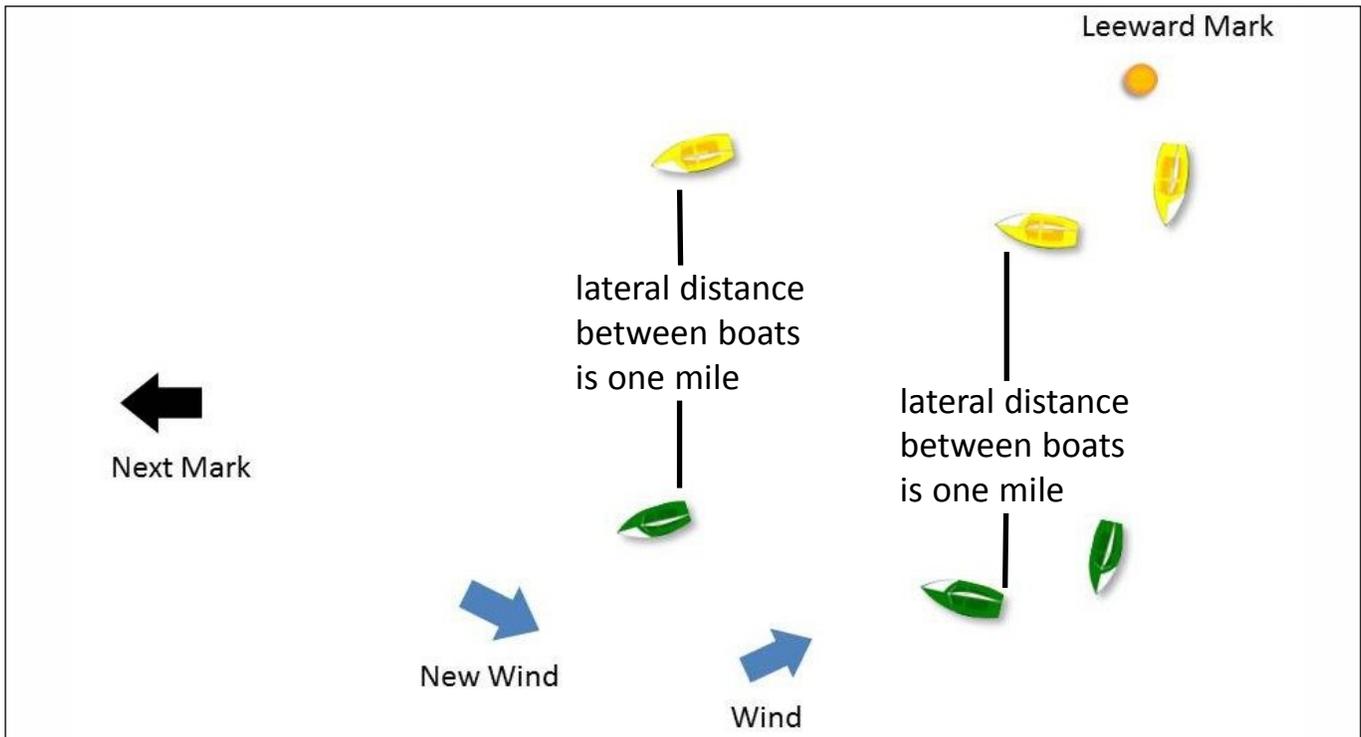
I still recall like it was yesterday, my first long-distance race on Trout Lake - part of the 1966 North Bay Wayfarer Weekend. There, I experienced something that changed my sailing life. I had of course read about tacking on headers, sailing the lifted tack, etc. but this day brought its true potential home to me in a way I had never imagined possible.

We rounded a leeward mark on the north side of the lake in 8th place out of 20 boats and began a three-mile beat, westward up the lake to the finish (*diagram on p.84*). Oddly enough, the top seven boats all held starboard as they rounded and paraded almost directly south across the lake. For no reason other than to be different, I tacked to port immediately after rounding. As luck would have it, the leader who was nearly the width of the lake ahead of us, tacked at the same time as I did. Now we were bow to bow, but of course, I was about a mile to leeward of the leader (*see photo at left to get the idea*).

Only about a minute or two later, there was a substantial port-tack knock that caused both of us to tack instantly - just like the books recommend. Now we were still sailing nearly straight west along the long axis of the lake but there was one little difference: I was now a mile to windward of the earlier leader. I had gained two miles in two seconds!!

Lesson learned: Incredibly huge gains can be made, or losses incurred, in no time at all. These usually have nothing to do with boat speed but rather they depend on angles and separation between the boats which in this instance was huge. What should/could the leader have done to avoid what happened?

When defending your lead, stay between your opponent and the next mark. Upwind this means you should put enough of your lead onto each tack to maintain that crucial position **between your opponent and the next mark.**



Upwind Strategy

Regardless of *Green's* position in the fleet, he should likely have tacked soon after rounding. Strategically speaking, a beat that is significantly skewed like the one diagrammed above, virtually demands **sailing the longer tack first** - a.k.a. **Sail the tack** (directionally) **closest to the mark**. (Unless of course you are dead certain - a true rarity - that you will get into better wind or current by sailing the shorter tack first.)

Avoiding the shorter tack as much as possible means you stay nearer the imaginary straight mark-to-mark line, the rhumb line. This has important strategic implications because it keeps your options open, an advantage in any game involving strategy. If you are starting the beat in the scenario above where the wind direction as you round indicates that you will spend far more of your beat on port tack than on starboard, there is an important corollary of **"sail the longer tack first"** to keep in mind: **"Avoid the lay line as long as possible"** (if all else is equal). *Green* (above) has flown in the face of racing wisdom not only by sailing the shorter tack first but also by doing so until he reached the lay line.

This is especially risky in the shifty conditions typically found on small lakes. By immediately assuming the longer tack, *Yellow* was playing the odds

much better than *Green*. True, the other side might get better pressure or a more favourable shift than *Yellow*, but you can't build sound strategy on coin tosses. Given fairly equal winds across the course, *Yellow* can, on port, expect one of three wind direction scenarios.

1. **No change:** If the wind direction remains constant, neither boat will gain or lose. However, if there is a shift, *Yellow* is bound to gain by having sailed the longer tack first.
2. **Lift:** A port-tack lift lets *Yellow* sail more directly (less distance) towards the mark. That same lift will be useless to *Green* who was already laying the mark on his shortest possible course.
3. **Knock:** With *Green* at the lay line, a knock will let *Yellow* tack and eat into *Green's* lead, or, if the knock is big enough, *Yellow* can take the lead - **as seen above**. Disastrous as this turn of events was for *Green*, he at least did one thing right: He tacked on this header, abiding by the dictum: **Sail the lifted tack**. He is of course, no longer leading but **is** at least sailing the longer tack first and leaving himself in a position to regain his lead if a return shift to the former direction comes along. *Yellow's* lead over *Green* is thus not truly set in stone unless *Green* lets *Yellow* cross him. That would be curtains for *Green*.

Sail the lifted tack as much as possible: Trout Lake is a long east-west lake. We typically get a SW breeze that blows diagonally across the lake. Occasionally that wind veers up to 15° during our 5-mile beat to the lake's west end. As often happens on long, narrow lakes, we can sail one tack (port in this case) nearly parallel to shore for long periods of time on our beat.

When we ran out of sea room, we would tack out 100 yards or so but then go right back onto port as often as was necessary. Most others tacked and

then just kept going across the lake, wasting precious starboard-tack time that was in short supply, time they should have worried about conserving until it could be put to good use. We on the other hand, were very miserly about spending our starboard-tack treasure. We did of course have to spend little bits of starboard time to avoid the rocks, but the time we lived for, was the port-tack knocks. With a quick tack, these became great starboard-tack lifts. Almost invariably, we nibbled the competition to death with this strategy.

Lesson: Avoid using up precious shorter-tack time without a good reason to do so (rocks, a good shift or visibly better breeze). The less shorter-tack time you have left, i.e. the closer you are to the lay line and its lack of useful options, the better your reason needs to be for spending that valuable time.

Go head-to-head with the fast boats

In 1978 I saw, in his fine *Advanced Racing Tactics*,



Dr. Stuart Walker's description of a classic avoidance behaviour: If *Speedy* sails the left side or the middle of the beat,

Avoider chooses the right side or bangs a corner to avoid getting visibly destroyed by the speed merchant. If the right side or corner pays off, all is well for *Avoider* who rounds ahead. More likely, *Speedy* will round ahead but this way *Avoider* has not been visibly trounced and can blame Lady Luck who did not smile on his side. ***Avoider***, I suddenly realized, was **me!**

It is far better, says Dr. Walker, to actively seek out and sail near the fast guys, using this as a chance to test your speed against the best. So now I was dying to try this out against Detroit's Jeff Jones who had won the past five North Americans. Even the English World champs feared Jeff and his dad.

The first chance for Julia and me to try and keep up with the Joneses in our freshly acquired pre-owned W3854 *SHADES* came at the June 1978 U.S. Nationals on beautiful Tawas Bay, one of the world's finest sailing venues (*below*).

It was like a fairy tale come true. Julia and I were amazed to find that we could match the Joneses' speed with only minor tweaking. Indeed, we managed to win not only the first race, but also the series. This marked a turning point in my racing career which until then had relied largely on shift-playing and strategy (and good crews) for any successes I had had. By going nose to nose, we became far more consistent winners.

Lesson: It is safer to sail near fast boats who are proven winners. They will usually show you right away to do things when you are worried about your speed.

2004 North Americans, Tawas Bay



To tack or not to tack, that is the question

Richard Johnson, then sailing W10139 *Free Range Chick'n* asked me: What is your thought process when you are thinking about tacking on a header? How do you make the decision to go or not to go? It's a hard thing to totally nail down, and deciding when to tack often seems to be more of an art form than scientific method. But I have given it some serious thought, so here goes:

Going up the first beat, you get a nice, juicy knock (a.k.a. header). "Tack!" I hear you cry. And tacking would most often be the right move. But alas, not always. I can think of several situations in which you should not tack on that juicy header, tempting as it may be. A well executed tack in a dinghy takes only seconds, yet that little tack can have a profound effect on your finish position - and not always for the better. A tack without thinking is fraught with risk to your finish position (not to mention your boat!). So, before you make this potentially crucial move, there is serious thinking to be done. "We don't have time for all that thinking, we need to tack now!!" Well, the good news is: you **can** decide now, in fact you should decide - and most likely tack - now, because most of your thinking was, of course, done ahead of time. Do I hear you say "Thinking? Ahead of time?" If so, the rest of this article is for you.

Strategic considerations

Position on the course must be a major factor in the decision-making process. Here is what gets considered aboard *SHADES a.k.a. Glory Days*.

We want to **avoid reaching the lay line sooner than necessary**. So, our first strategic question is: Are we getting rather close to a lay line? Is our tack-o-meter in the red zone? It **is** if we are still quite a ways from the mark but already nearing a lay line. The closer we get to a lay line, the nearer we are to running out of practical, useful options. And being out of options is bad news in any situation. Being near or at the lay line too soon is the danger zone.

Sailing towards the lay line: The closer we get to the lay line, the more eagerly we should jump on any excuse to tack back in towards the middle and the rhumbline, the straight line from mark to mark. In other words, willingness to tack towards the lay line should be directly proportional to distance from the lay line: less distance from the lay-

line means a correspondingly decreased willingness to go ever closer to it.

Thus, when we meet a "tackable" shift on our way to an ever closer layline, we should already be eager to tack to dig back in towards the middle of the course. Near the layline but on the tack away from it, we need to hesitate to tack unless we meet a situation that virtually demands a tack. (That same consideration, by the way, should govern our reaction - tack or bear away - if we meet a starboard boat!)

Of course, as we near the windward mark, we do have to get to the starboard layline on a buoys-to-port course. In general, we try to put this off as long as possible. But if we expect a crowd at the mark rounding, then it is wiser to join the layline "parade" early - the bigger the crowd, the earlier - to avoid the major risk of getting cut off at the mark and losing lots of distance and/or boats, or, God forbid, having to do a two-turns penalty.

If there are no other boats near us, we can wait and tack when we like. Our main concern in that case would be avoiding two tacks in rapid succession and then immediately bearing off onto a run, which would cause major speed loss.

If, on the other hand, a shift hits when we are far from lay lines, our options remain abundant, and now the merits of the shift itself become more important. But wait, even here, there are still a couple of important questions to answer before we tack on our juicy shift:

How will a tack fit in with our game plan that calls for playing a specific side of the beat? Let us imagine for instance, that we noticed before the race that the left side seemed to be getting more wind, and that we would go left, other things being equal. So, is this shift good enough to lure us away from the plan?

Of course, observations and plans are not always reliable. So we do not just blindly bang the corner of what we expect will turn out to be the favoured side. Instead, we consider a further aspect of our position on the course as follows:

Where are we in relation to the main body of the fleet or the boats we especially need to beat in this race? In a recent Midwinters, for instance, we needed to stay near - preferably in front of - Peter and Richard with whom we were fighting for the series lead. Thus we would gladly tack on a shift if that helped us stay with our main competitors or to remain between them and what we considered to be the favoured side of the course. But if tacking takes us away from our rivals, we'll think twice.

Cover? I try not to sit on anyone's wind if I can avoid it, and letting the competition sail at full speed gives us a good speed-test partner. Wayfarers have a lovely *live and let live* approach to racing that adds much to the fun we have. Of course, late in the race or near a mark, prudence dictates protecting whatever position we may be defending, no holds barred. We all expect no less. Covering boats in shifts can in any case be a tricky business. We prefer to "sail our own race" in such conditions while loosely obeying our strategic imperatives: avoiding the lay lines, and guarding the favoured side of the course (or the next mark) against our main competitors.

By making the above considerations a consistent topic of discussion between my crew and me as we go upwind, we fulfill the first need (*p.86*): We know - before any shift arrives - whether we are eager to tack, willing to consider it or really reluctant to tack. Which gives us a much better chance making the correct decision quickly.

Wind-related considerations

Purely wind-related questions that merit contemplation before we make our tacking decision include:

1. Will this shift last long enough to make a tack worthwhile? This can often be predicted by watching what the boats ahead are doing, and sometimes from watching wind patterns on the water ahead. If the tack is a mistake, we just tack back to undo the bad move! No big deal mostly.

2. Is the header a "velocity header", i.e. have we sailed into a lull where our left-over boat speed from the previous stronger wind is combining with a weaker true wind and is moving the apparent wind vector further forward (i.e. heading us) only until the boat slows down?

And anyways, a lull is rarely a good time to tack and lose even more speed. Job one is to keep moving and ghost through the lull as quickly as possible - major gains/losses are possible here!

A subsidiary question then becomes: Will a tack take us into an area that appears to be getting even less wind or perhaps more wind? Ripples on the water, and other boats, can give valuable input here. It pays to keep in mind that even the best of shifts cannot make up for a significant lack of wind. It is in fact worthwhile, on rare occasions, to go against all the tried and true strategic odds, if by doing so we seem much more likely to get better wind. And it doesn't have to be much - just more than the other guys are getting! (You don't have to be faster than the bear syndrome?)

3. How big is the header? If we are in reluctant-to-tack mode, the header will need to be substantial to overcome our fear of tacking, but if, on the other hand, we are eager to change tacks, then even the slightest and most fleeting of headers may well be reason enough to go.

4. Is this shift a persistent shift, for example a new wind such as a thermal-lift-related on-shore breeze coming in, or a bend in the wind around a point of land? In that case - rather rare in our racing here in North America - it may pay to sail well into the header if we expect the wind to swing around even further. In that case, a later tack will get us an even better lift and a far shorter distance to sail on the other tack than the guys who tacked sooner.

If none of the above factors help us to make up our mind, we remember that, everything else being equal, it's always a good safety play to get closer to the middle of the course. In other words, if there's a small header, we would be more likely to tack if the tack took us back towards the middle of the course from our current position off to one side of the beat.

Further considerations

Since we sail many of our races in shifty winds, we need to be prepared to tack often and well. It behooves us therefore to hone our tacking skills by practicing them until they are second nature and a joy to behold - see *Roll Tack* in ch. 6. Not the least of the benefits that accrue from top-notch tacking skills is the fact that we can then more readily admit that our first tack was a mistake and return to our original tack with minimum pain.

Of course, we all have days when every tack seems to have been a mistake, and then we tend to tack too often. But that is still better in the long run, than giving up, staying on one tack and sitting back saying: "Well, **there** goes the race."

As mentioned earlier in this chapter but worth repeating, I still vividly recall our many lovely long-distance races on North Bay's Trout Lake, where we would beat five miles into the prevailing SW breezes that were angled such that you could sail a long port tack nearly parallel to the north shore

(*below*). Eventually you would need to tack to starboard to avoid hitting the shore, and this is where we regularly *made our money*. Most of our competitors would, having tacked to avoid the shore, proceed a long way on starboard tack, some of them more than a mile to the south shore, for no good strategic reason whatsoever. We, on the other hand, would be among the few who sailed out 50-100 yards, and then tacked back to port, and repeated the procedure as necessary.

All this time we would patiently await the inevitable port-tack header that would occur a few times during the long beat to the west end of Trout Lake. Every time that header hit, we would be ready and waiting to sail the starboard lift (20°-30° sometimes) for as long as the shift lasted. And every time, we gained a fair bit. The moral being: If you are forced to tack away from the favoured tack, or you realize that your tack was a mistake (because the shift only lasted a second or two, for instance), get back to the favoured tack as soon as is reasonably possible.



Trout Lake, just after the start of the 1978 National Cruise Race: Already reluctant to tack and waste limited starboard-tack time, Julia and Al work hard to escape the W3615 backwind.



Which end of the start line is favoured?

 *Sept. 2013.* A gray, cool, breezy day on Tawas Bay. Nick Seraphinoff's granddaughter, Angie, and I were sailing in the Wayfarer NA's. Between races, I got to thinking about the system shown below, because the other systems I had been using for nearly 60 sailing years, were no longer working for me. I had all too often been misjudging which end was favoured and by how much.

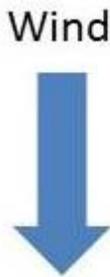
So I came up with a system which works a treat. *(below)* Not only does it provide a very accurate indication as to which end is favoured, but it also indicates by how much. Best of all, I don't need to be anywhere near the line to get my reading: One glance at my close-hauled heading tells me all I need to know. More detail below. (I have since found my invention referred to in an early issue of Dave Dellenbaugh's *Speed & Smarts*. I think it looked too complex to me when I first saw it.)

If the pin end bears x° from the RC boat's start flag and the line is square to the wind, then the wind direction will be $x+90^\circ$.

Since a Wayfarer can sail 45° to the wind, it should then be able to sail $x+90-45^\circ$, i.e. $x+45^\circ$ on starboard off a line that is indeed square to the wind.

Being able to sail $x+55^\circ$ on starboard would mean the boat end of the line is favoured by 10° .

Similarly, if starboard gives you only $x+40^\circ$, then the port (pin) end is favoured by 5° .



Words to Live by

10 racing maxims to remember whenever you race

In addition to Stuart Walker's exhortation to fight the fast guys head to head, which is covered at some length on page 85, I have ten other important sayings to live by when I race.

#10: Czech proverb: Misfortunes always come in by a door that has been left open for them. Almost all bad luck is preventable with careful boat maintenance, well oiled helm-crew work and sensible choices on the water. And when bad luck does strike, the way we react can minimize the damage. Imagine for example that the fleet has caught you on a run because the wind came up from astern, erasing your big lead. You can go to pieces or you can see the bright side: We're still with the leaders; let's get that lead back!

#9. The harder I work, the luckier I get.

Keep the sails perfectly trimmed - **don't be lazy!** Play the main upwind, especially in puffy conditions: Ease in lulls, crank back in when wind picks up again. Don't forget to sheet in a bit harder once your boat is up to speed after a tack.

#8. Stuart Walker puts it nicely: Don't be greedy! Who cares how much you win by? No need to take chances trying to improve on a first.

Don't be so eager to win a(n early) race that you needlessly risk losing other boats.

Dr. Walker's corollaries of Don't be greedy

These apply particularly well in our frequent oscillating wind conditions:

Cross 'em when you can.

On a beat, you are headed and can now cross the boat to windward who was ahead of you. Don't wait for a juicier shift to bring fatter gains. Instead, tack and consolidate your gains while you can.

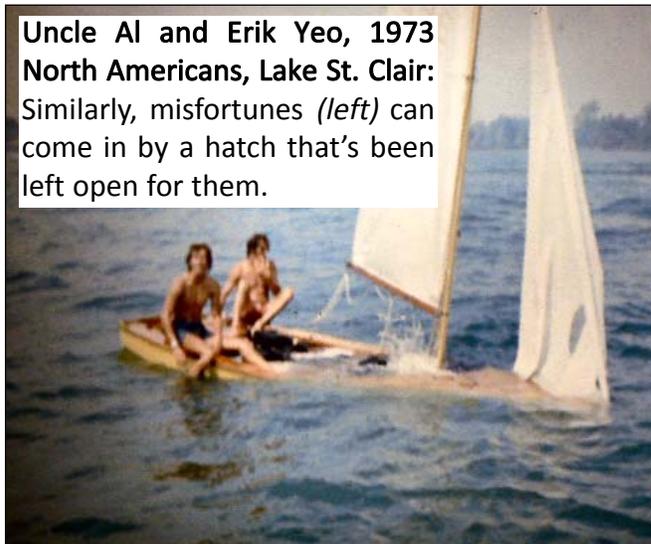
Don't let 'em cross you.

If you are the freshly knocked windward boat and think you might still be able to starboard the guy who just tacked to try to cross you, **don't** give in to the temptation to go after him. **Do** tack to the new favoured tack right away and remain placed to get your lead back on the return shift.

#7. Lotteries are for losers.

Avoid making a desperation move unless it is truly your last hope. The better your boat speed, the

Uncle Al and Erik Yeo, 1973 North Americans, Lake St. Clair: Similarly, misfortunes (*left*) can come in by a hatch that's been left open for them.



more zealously you should avoid risk-laden moves such as banging a corner or forcing mark room.

#6. Love the rhumbline.

Upwind: Staying relatively near the rhumbline keeps your options open - to play shifts, etc.

Reaching: The rhumbline is the shortest distance to sail. Warning: Great mental toughness is often required to make yourself stay low.

Downwind: In my experience, the straight mark-to-mark course is usually the best Wayfarer course on a run, especially when you are doing hull speed or close to it. Tacking downwind sometimes does pay off, notably in the lighter airs or where sailing a higher course lets you start to plane.

How high should you sail when tacking downwind? Richard and Mark Hartley, our fine Wayfarer builders, taught us a thing of beauty: Sail just high enough to keep the genoa pulling.

Corollary: Avoid the corners and the layline for as long as you can. (as talked about on p.86)

Upwind: Once you have reached the layline, all your useful options are gone. Therefore the closer you are getting to the layline, the more eager you need to be to stay away from it!

Tacking downwind: Here, too, your useful options are gone once you reach the layline.

#5. Think ahead!

in the boat: advance preps for things like roundings that must go without a hitch (e.g. crew puts feet in front of windward spi sheet before douse to windward; helm makes sure spi halyard will run freely before douse; board down; spi pole off mast and sheet before gybe)

outside the boat: Discuss with/Explain to your crew what you plan to do if you converge with another boat. (e.g. defend your side of the course by tacking/gybing before the other boat arrives? make the other guy tack/gybe? emergency plan: Be clear in your mind at all times how you will react if a boat suddenly appears that you had not (fore)seen. For instance, do you want, at all costs, to avoid tacking here? If a serious collision looms, however, I have never forgotten a gem given me by former ISAF President, Paul Henderson in a 1964 protest of mine:

If a collision is unavoidable, luff up!

Luffing slows the boat (God willing, both boats) down, and minimizes impact. But even here, if you absolutely must stay on the tack you were on before the incident, it may pay to luff up, sit for a couple of seconds and go back as soon as possible to your desired tack.

next leg, finish: Decide strategy for the next leg before you round. e.g. Is one side of the coming run/beat favoured due to wind/current strength, a shift? If so, plan your rounding accordingly, e.g. don't get trapped on the outside when your plan was to tack right after rounding - far better to round astern but with options.

4. Keep your eye on the big picture

the here and now: Watch what is going on around you, both near and far. Don't spend too much time and thought on fiddling with non-essentials in the boat.

on this leg of the race: Do we absolutely have to pass this guy on this reach or is it enough to establish a good attacking position for the coming beat or run? How crucial is it, really, to get room at the coming mark?

run, buoys to port, no gate: If in doubt, defend the left > starboard *near* mark, inside *at* mark

this race: Is it imperative that we win this race? Is there any particular competitor that we must beat to stay in the series hunt?

#3. Avoid messes of any kind.

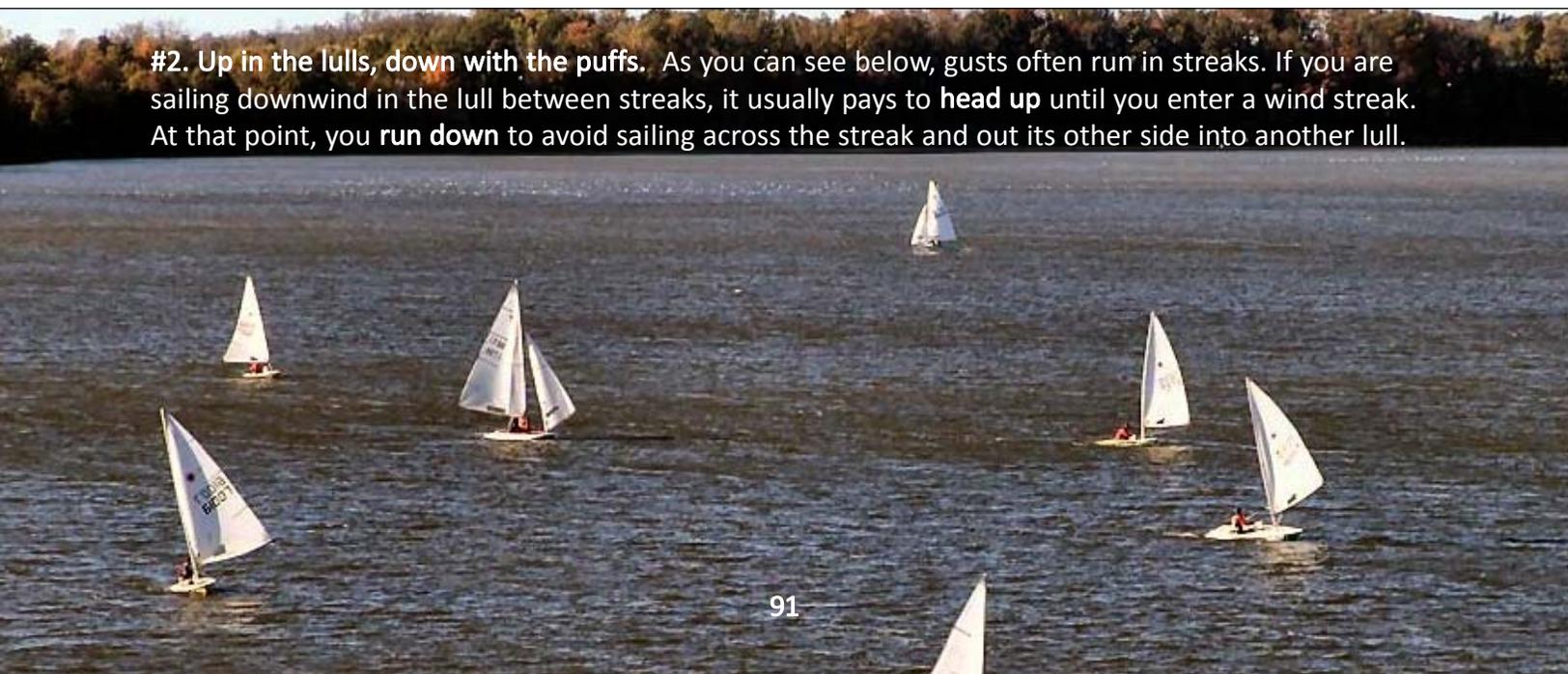
Collisions are always slow, and maybe even incapacitating. Congestion is also **slow**. Avoid pile-ups at the start and at marks.

#1. When in doubt, let it out.

Upwind: Especially in light air – sail as high as you can but the moment she starts to feel slow at all (**doubt!!**), ease sails and get speed back up; maybe let off some jib halyard, too > make jib luff entry rounder and widen your sailing groove. A faster boat makes better distance to windward and lets your centreboard work better.

Off the wind: Ease your sheets (main, jib, spi) frequently to the edge of a luff - that is the only way to avoid overshooting which stalls your sails and is hazardous to your speed.

#2. Up in the lulls, down with the puffs. As you can see below, gusts often run in streaks. If you are sailing downwind in the lull between streaks, it usually pays to **head up** until you enter a wind streak. At that point, you **run down** to avoid sailing across the streak and out its other side into another lull.





2014 North Bay Wayfarer Weekend
Dave Hansman and grandson, Mitchell,
spinnaker through a Callander Bay gust.

8 What the beginner needs to know about the racing rules

Rules applicable when boats meet

2A: basic right of way

10. port keep clear of starboard
11. windward keep clear of leeward
12. overtaking boat keep clear
13. tacking boat keep clear

2B & 2C: limitations (mostly on r-o-w)

14. avoid contact
 15. acquiring right of way
 16. course change by r-o-w
 17. same tack > proper course
- 2C preamble (18-20 basically do not apply at start; 20 precedence over 18, 19)*
18. mark-room (*more below*)
 19. room at obstruction
 20. room to tack
 21. exoneration

2D: 22, 23 override 2A, 2B

22. *keep clear* if you were OCS, if doing turns, or if moving astern
23. *keep clear* of capsized, etc; rescuing
24. not *racing* keep clear of *racing*

fouls & atonement

31. touching a mark > one-turn penalty
- 44.2 other foul > two-turns penalty

18 Mark-Room (largely protections for give-way boat)

18.1 does this rule apply?

- * as soon as first of an *overlapped* group enters *zone* around any *mark* of the course? **yes**
- * between port/starboard beating? **no**
- * at start mark? **almost never**

18.2 giving *mark-room*: freeze-frame as first hull enters *zone*: outside *overlapped* to give *mark-room* to inside boat > *mark-room* rights/obligations remain regardless of subsequent changed overlap status unless *mark-room* boat leaves *zone* or tacks

18.3 completing tack in *zone* near a boat already laying *mark*: the tacking boat must

* **not** make the other boat sail above close-hauled to *keep clear*, and

* must give *mark-room* if other boat becomes *overlapped* inside > the real killer here is that the tacker loses the protection of rules 16 and 15 *Acquiring Right of Way* (see **exoneration** below)

18.4 at a gybe *mark*: inside *overlapped* boat must sail *proper course* until she gybes

exoneration: boat entitled to *mark-room* is exonerated if she breaks a rules 10, 11, 12, 13, 15 or 16 while taking *room* to which she is entitled (rule 21)



Oct. 2012 HOT Regatta
action on Lake Townsend