

Shelley Sailing Club Inc.

Notes for informal catamaran training course,

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Disclaimer - These notes are based on my experience sailing Windrush 14 catamarans over a number of seasons. I'm only a middle of the fleet sailor when it comes to state champs etc. – to really learn, you need to go to the championships and talk to the experts, but this should at least get you started!

Part 3: Sailing to Windward – When to tack

There are a lot of factors to consider when deciding when to tack, and unfortunately several of them are conflicting. The following list applies particularly to the confined waters of the Canning River at Shelley, but I've also provided some advice for racing in open water. Roughly in order of priority (highest priority first), here are the things to consider:

1. Giving way to another boat.

If you are on port tack and you can't clear another boat that is going to cross you on starboard you have two choices: tack before you reach the path of the other boat or bear away and go behind it. In a cat this decision needs to be made early and depends on where you are relative to the mark and the side of the river you are heading for. Most times you'll probably decide to bear away but **DO THIS EARLY!** Your boat will accelerate rapidly as you bear away, and if you leave it too late, you'll sail straight into the side of the other boat at high speed, which will do a lot of damage and be very expensive. This is the **SINGLE BIGGEST CAUSE** of collisions in the cat fleet. If you find yourself having to act quickly – maybe because you've only just seen the right of way boat, and you are already close to it – then **DON'T** bear away – instead push the tiller away from you so you head up into the wind, which will kill the boat speed. You can turn this into a tack, or if you want to carry on in the original direction, wait for the other boat to sail past and then bear away onto your original course. (If you've stopped completely this will require you to sheet right out and reverse the rudders as for getting out of a failed tack - see Part 2.) If you are bearing away and have given yourself plenty of time, then sheet the main out half a metre before you do so, and quickly move back on the boat. Otherwise you may nosedive and go for a swim.

2. Don't run out of water.

Either you are about to hit the fence or you think you are getting into shallow water. The first is easy to judge. The more confident you are with your tacking, the closer to the fence you'll probably go, but increase the clearance in stronger winds as the chances of stuffing up a tack get higher and the consequences of hitting the fence get worse!

You'll know for sure you are in shallow water if you feel your rudders hit the bottom. If this happens, tack **IMMEDIATELY** (First Law of Sailing at Shelley). If you delay, even for a few seconds, you may end up with both rudders on the bottom and it will then be very hard to tack, and you could be there for some time. You may even have to jump off the boat and push it around – which is OK if the bottom is hard, but I've gone up to my knees in thick, glutinous mud doing this before now. Way

better is to err on the side of caution and tack earlier than you think you need to. Easy to say, but it is always tempting to push it that little bit further Resist the temptation!

In either case, if there is another boat behind you and to windward preventing you from tacking you have the right to call for "Water". The procedure is to hail the other boat (ie yell "Water" or something equivalent at the top of your lungs), and they are supposed to immediately tack, or hail you back and tell you to tack. Either way, you MUST then tack. They then have to keep clear of you during and immediately following your tack. Remember to hail early to give the other boat time to respond. Note that this rule does not apply if you can safely continue on your current course, even if this is inconvenient – the classic case is immediately after the start at Shelley in a south-westerly where the close-hauled course for boats on starboard tack passes safely the wrong side of the fence, and therefore boats don't have tacking rights. As this is a very common, and awkward situation at our club it is usual practice for the boats starting later to tack a bit early to allow boats ahead of them to tack – and I'd encourage you to follow it! Note that if the wind direction and start line position are such that the close hauled course takes boats into the side of the fence, then they DO have the right to tack, and the boats behind have to let them.

3. Tack if you can lay the mark (ie you have reached the lay-line)

This means that if you tack, you'll be able to sail straight to the mark without having to tack again. The Windrush 14 tacks through close to 90 degrees, so if you are sitting on the side of the boat looking at the sail, the time to tack is when the mark is directly behind you. Sailing sloop in light winds, you can get the crew to sight along the front beam, but it isn't easy to judge when you are sailing on your own – the solution is practice! The wind shifts around all over the place near 5th so if that is the windward mark, allow an extra 15 degrees or so to be safe.

4. Tack so your next tack will be where you want it to be

In other words – try to plan ahead!

5. Minimise the number of tacks

Compared to monohulls, cats take a long time to tack and lose a lot of speed in the process. Therefore, unless there is a very good reason to tack, don't!

6. Oscillating wind shifts

If the wind direction keeps changing back and forth, then if it changes so the close-hauled course is taking you further from the direction of the windward mark, you've been knocked (or headed) and you should tack. If the wind direction changes so it is taking you closer to the windward mark you've been lifted and should stay on the current tack. In a fast tacking boat like a laser this is the main reason for tacking. In a catamaran, there is a direct conflict with 5 and you need a substantial wind shift that lasts for a while to make it worthwhile. It is easy to tell if a wind shift is substantial by noting how much you've had to change course to keep the sails working properly, but very hard to predict how long it will last, so there is always an element of chance involved here. The more efficiently you can tack, the more often it is worthwhile to tack when you are knocked, so practice tacking!

7. Wind bends

Sometimes there will be a permanent bend in the wind caused by the local geography. In this case it is supposed to be best to sail into the bend on the tack that is being knocked, and delay tacking for as long as possible, so you get the best possible lift when you do tack. Of course, if it was actually an oscillating shift, rather than a bend you have just done exactly the wrong thing! At Shelley we often seem to get a wind bend between the section of the river between 5th and the clubhouse and the section from the clubhouse to Modillion, but there are always so many other shifts going on that I've never figured out how to use this to my advantage.

8. Permanent wind shifts

The general rule here is that if you think the average wind direction is going to change anticlockwise (ie to the left as you are facing the wind), then you should stay on the left hand side of the course, and vice-versa. If the wind doesn't shift it won't make any difference. If it goes the other way, you'll be worse off. Now where did I put that crystal ball..... At Shelley the river isn't wide enough and the windward legs don't take long enough for this rule to be very useful – but keep it in the back of your mind – it might come in handy one day!

A few other notes:

Open water sailing

In open water sailing in a steady breeze 1, 3, 4 and 5 are often the only considerations, so in catamaran races on the ocean it is common to only tack once or twice on a windward leg (luxury!), and that is what all the best people do! It is then all about boat speed, pointing, and getting the lay-line right.

Tacking when there are other boats around

The racing rules say that when you are tacking, then once your boat has passed head to wind, you have to keep clear of all other boats until you are on a close-hauled course. How, you may ask? The only way is to make sure before you tack that there isn't going to be a problem. This means that if there is another boat behind you and to windward (or even just behind you), then even if you'll be on starboard tack after your tack, you have no rights until you've borne away 45 degrees off the wind. (Of course, if you'll be on port tack after your tack, then you won't have rights then either.) This can be quite problematic when sailing catamarans because of the time (and often uncertainty) involved in tacking and the high speed of the other boat. Most skippers at Shelley are nice to one another in this situation (on the "there but for the grace of God go I" principle) – which I definitely encourage - but they don't have to be. A few ways out of this predicament:

- Don't tack until they do. Easy, and safe, but you must have had a good reason to tack; otherwise you wouldn't want to (see 5 above).
- If they are directly behind you or only a little way to windward then sail higher than usual which will slow you down, and force the following boat to either sail higher, tack, or bear away and go below you. (As the boat ahead and/or to leeward you have right of way until head to wind, but whenever you manoeuvre you have to do so in a way that gives the other boat the opportunity to get out of your way.) If the other skipper takes the first option you

have an interesting duel on your hands, the other options leave you free to tack. Don't overdo the sailing higher bit and make sure you bear away again to get up speed before attempting to tack, or you'll get stuck head to wind.

- If they are well to windward, sheet out and head a little higher to slow down, let the other boat sail past, sheet in again to gain speed, then tack.
- If they are well to windward and you are sailing sloop or super sloop: tack but leave the jib cleated on the original side and don't sheet the main back in. Wait for the other boat to sail past and then bring the jib over to the new side and sheet in the main. **WARNING:** If you get this wrong (especially if the crew releases the jib sheet too soon), you will ram the other boat at high speed so practice this with your crew many times before trying it for real. This is, however, a handy manoeuvre in quite a few situations so should be in the repertoire of every sloop and supersloop sailor. **DO NOT** try this in a cat rigged boat – it is too difficult to avoid accelerating on the new tack without getting stuck head to wind.