Steering Under Sail

Fixed Course vs Wind-Based Steering

It has been a while since I have addressed some of the basics of sailing. For some of you these concepts will be old hat, but some of the ideas may be useful when you have guests onboard and are teaching them how to steer.

Sailboats, like any boat, are steered to maintain a course. At times, a steady course is steered; this would be similar to steering a powerboat. In this mode (fixed course steering) one would pick a destination or target and steer towards it. But at other times, sailboats need to be steered relative to the wind. In this mode (wind based steering) changes in wind direction need to be matched by changes in the boat's course – the idea being to keep the wind blowing across the boat from the same direction. These two different modes of course selection are handled differently by the helmsperson and crew. Let's look at each separately.

Fixed Course Steering

Steering a boat on a fixed course is a lot like driving a car, with one major difference: In a car we have roads with lines painted on them to guide us but, obviously, there is nothing similar on the water. So to drive a boat from one place to another we need to *set a course* (similar to choosing a road) and *steer* that course (similar to staying within the lines on a road). When a boat is at sea, a chart is used to set a course and the compass is used to indicate if the boat is off course—the equivalent of the lines on a road. In our local waters, we can frequently set a course by simply pointing the boat and taking a compass reading. But we still need to steer that course and even an experienced sailor will steer a wobbly course if they use nothing but the compass. This would like steering a car by looking out the side window at the lines.

A better method is to watch something on the bow, say the forestay, and keep it from swinging across the water. This important technique takes a bit of practice but it is much easier to do in our local waters where we have islands, trees or mountains to use as reference points. So, the trick is this: set your desired course (by compass or other method) and then find a handy reference point on the horizon next to the forestay. Steer as needed to keep that reference in that same place. Every few minutes, check the compass to be sure the winds and/or currents are not pushing you off course. If they are, correct accordingly.

Going back to our automobile analogy, new drivers tend to over-steer because they wait too long to make corrections. By the time they react a large correction is needed, which leads to over compensation in the other direction. Eventually new drivers learn to make smaller and more frequent corrections. The same is true with boats, the sooner you react, the smaller the needed correction and the straighter your course. Just to give you a feel for this, in calm conditions *I seldom move the wheel more than an inch* but I do so as soon as I see or feel the boat veering off course, even a little.

Fixed courses are used in one of two situations: when the boat is under power or sailing on a reach. From the helmsperson's point of view there really is not much difference, i.e., the boat is steered to maintain a steady compass course or toward a fixed object. If the boat is under power, this is easily done as the boat can be steered in any direction. But under some points for sail, for example to windward, there are limitations on where the boat can be steered and still sail (we will discuss this situation in the next section).

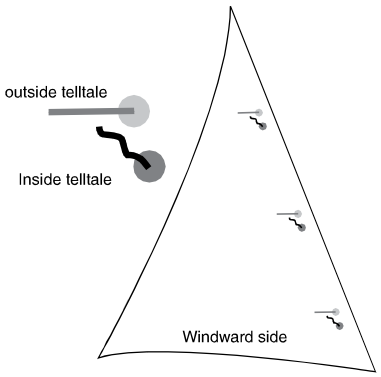
However, a boat on a reach can take in or let out her sails to adjust to changes in wind direction. The helmsperson can continue to steer a steady course while the crew adjusts sail trim to match small shifts in wind direction. Obviously, this is not required – if you are reaching and don't need or want to steer to a fixed course, adjusting to wind changes by adjusting course is perfectly acceptable. In sum, it is possible to steer a fixed course while reaching.

Wind-Based Steering

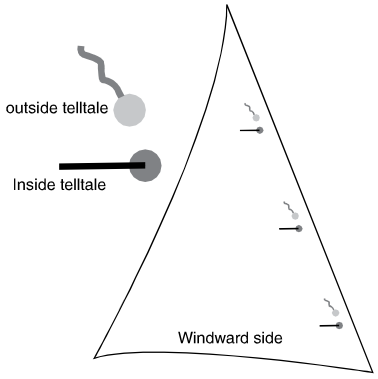
Under normal conditions, wind-based steering is used when going to weather (when close-hauled) or sailing downwind. This is especially true when sailing wing-on-wing when the danger of an accidental jibe is ever-present.

When going to weather, the telltales are normally used to determine the course to be sailed. But just like steering to a compass, steering by telltales alone, it is very difficult, if not impossible, to steer a straight course. The main reason is that the telltales will fly correctly over a 2-3 degree range. Therefore, if you wait until one telltale starts to flutter and then adjust until the other starts to flutter, etc., you will be steering back and forth over a 5 degree range.

A better plan is to use the telltales in the same way we used the compass for fixed course steering: settle the boat onto a course where the telltales are flying correctly and then pick a reference point off the bow. Sail this course for a minute or two and then look up at the telltales. If one is fluttering



Sailing too high, inside telltale fluttering



Sailing too low, outside telltale fluttering

"Steer away from the bad boys."

It is helpful to realize that the inside telltale is always on the windward side, so turning away from the wind will correct inside flutter and into the wind will correct outside flutter.

make a small adjustment to correct and then pick a new reference point on the bow. I like to treat the telltales like I do a rearview mirror in a car, I do not stare at it when I am driving but instead glance at it frequently.

Another issue that frequently troubles new sailors is how to know which direction to steer to correct a fluttering telltale. Here is an easy to remember saying that might help: think of fluttering telltales as bad boys and remember to "steer away from bad boys." In other words, if the inside telltale is fluttering (sailing too high) steer away from it or towards the outside of the sail to correct. It can be helpful to realize that the inside telltale is always on the windward side, so *turning away from the wind will correct inside flutter and into the wind will correct outside flutter.*

When sailing downwind, telltales provide no help as they will likely be straight down. In this situation the masthead fly becomes the indicator of choice. It will show you where the wind is coming from and allow you to adjust course when it shifts. Due to the dangers of an accidental jibe the helmsperson should pay closer attention when sailing downwind than on any other point of sail. Again, it is easiest and advisable to pick a reference off the bow to steer toward and look at the masthead frequently to check for wind shifts. Next month we will go into more detail on the masthead and its uses.

Hopefully some of these ideas will be helpful.

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