

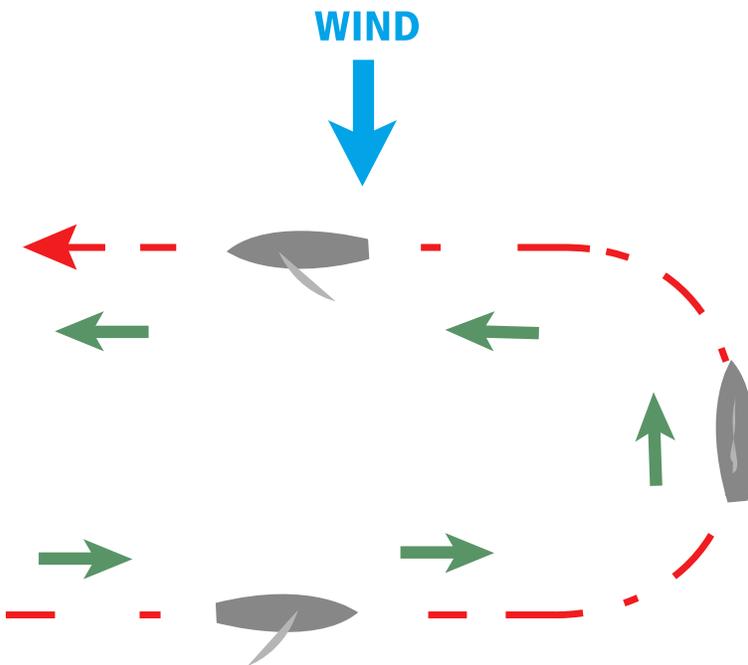
Introduction

This sailing tutorial explains what a tack is, how to tack a sailboat, and the challenges tacking presents.

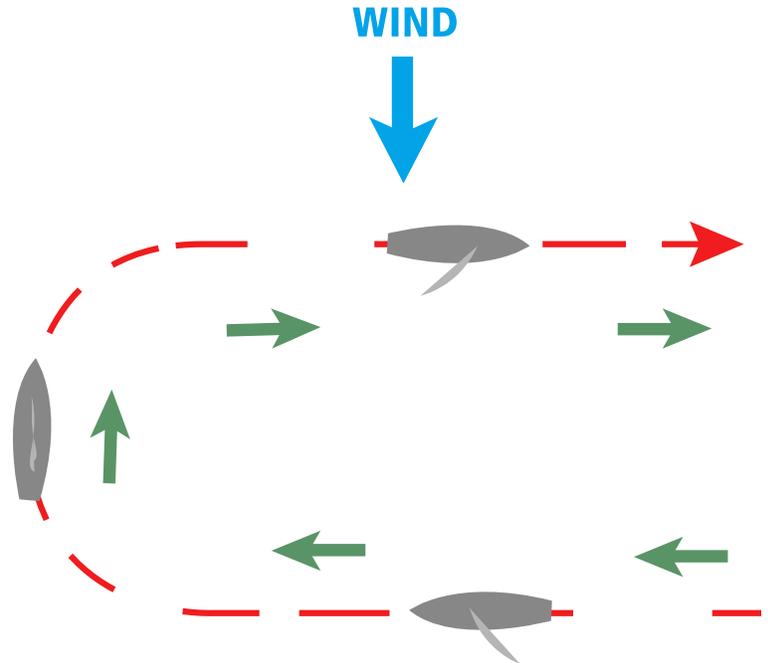
Definition of a Tack

On a sailboat, turns aren't as straightforward as they are in most other vehicles. In a car, for instance, you can make a left turn or a right turn. Conversely, on a sailboat, you can tack, jibe (sometimes spelled "gybe"), or change your course. You will learn about course changes and jibes in later tutorials; for now, we will focus on tacks.

A tack is a turn in which the bow (front) of the boat passes through the wind. Take a look at the picture below and pay attention to which direction the boat is moving relative to the wind, what direction the boat is turning (left or right), and what side of the boat the wind crosses first.



The boat starts out with the wind crossing the port (left) side of the boat first. Then it turns to port, and keeps turning until the wind crosses the starboard (right) side first. Now look at the next picture and pay attention to the same factors. What is different from the previous picture?



This time, the wind is crossing the starboard side first, then the boat turns to starboard, and keeps turning until the wind starts to cross the port side first.

In those two pictures, the boat turns in different directions; however, in both situations, the boat turned toward the wind, and the bow passed through the wind. Remember, a tack is when the bow of the boat passes through the wind!



Steps of a Tacking Maneuver

- 1 Helmsman gives first command, "Ready to tack?"
- 2 Crew looks 360° around the boat, gets ready to tack, and says, "Ready!"
- 3 Immediately before tacking, helmsman says, "Tacking!"
- 4 Helmsman pushes the tiller toward the mainsail.
- 5 As sail switches sides of the boat, the helmsman and crew switch sides of the boat.
- 6 Once on course, helmsman brings tiller back to the center of the boat.
- 7 Trim sails and sail away.

Step 1: Helmsman gives first command, "Ready to tack?"

When there is more than one person on a boat, it is a good idea to inform them of your intentions when making a big maneuver, like a tack. If you don't, there is a chance that they might get hurt. So, the first step in a tack is to inform the people on the boat of the upcoming tack. Theoretically, you can do so any way you want, but if you sail with someone you've never sailed with before, they will need to understand what you intend to do. Here's a short list of some phrases that are widely used, and most every sailor will understand.

- "Ready to tack?"
- "Prepare to tack!"
- "Ready about?"
- "Prepare to come about!"

You can choose what you want to say, but it is recommended that you don't stray too far from those phrases listed above.

Step 2: Crew looks 360° around the boat, get ready to tack, and says, "Ready!"

One of the crew's most important jobs on a boat is to serve as a lookout since it is often difficult for the helmsman to see all the way around the boat. So, before a tacking maneuver, the crew must ensure that nothing will interfere with the tack. Then, the crew prepares to tack. Finally, once ready, the crew informs

the helmsman by saying, "Ready!"

Step 3: Immediately prior to tacking, helmsman says, "Tacking!"

Just like in step 1, the helmsman needs to inform the crew about what is happening on the boat. Here, the helmsman announces the start of the tack. Like in step 1, the helmsman can choose how he wants to do this. Here's another list of common announcements:

- "Tacking!"
- "Helms Alee!"
- "Coming About!"

Again, you can choose what you want to say, but you shouldn't stray too far from the above.

Step 4: Helmsman pushes the tiller toward the mainsail.

We established earlier that a tack is a turn toward the wind. The boats you will begin sailing in are controlled by a tiller. A tiller is moved in the direction opposite the way you want to turn. To turn left (port), you move the tiller to the right (starboard). To turn right (starboard), you move the tiller to the left (port). So, if you want to turn toward the wind, you move the tiller away from the wind.

As you might imagine, it is sometimes difficult to think all of this through before a tack. Thankfully, the mainsail always blows to the side of the boat opposite the wind. If you move the tiller toward the mainsail, the boat turns toward the wind. Remember tiller toward the sail to tack! If you remember that, then you won't have to think through which way to move the tiller, which will allow you to focus on other things.

Step 5: As the sail switches sides of the boat, the helmsman and crew switch sides of the boat.

The helmsman of a boat is supposed to sit on the windward (upwind) side of the boat. The crew is supposed to sit on whichever side of the boat keeps the boat balanced. In a light wind, that is usually opposite the helmsman, and in a heavy wind, that

is usually the same side as the helmsman. Doing this helps balance the boat, keep it from tipping over (capsize), and control the boat. However, as we established before, the wind ends up on the other side of the boat after a tack. That means that the helmsman and crew need to switch sides of the boat during a tack.

The best time to switch sides is when the boat points directly into the wind. The boat will be close to level, and you will be less likely to trip or lose control of the boat. Now, when the boat is pointed directly into the wind, the sail will be directly in the center. So, if you watch the sail, as soon as it crosses the centerline of the boat (switches sides), you should switch sides as well.

Step 6: Once on course, the helmsman brings tiller back to the center of the boat.

Centering the tiller stops your turn. However, there is a lot going on during a tack, and it is sometimes difficult to determine when you have completed your turn. Finding a point to aim for prior to tacking, might reduce the difficulty a bit by giving you an obvious point to aim for rather than just a direction. You should pick something big and obvious like buildings, trees, docks, or stationary boats. After a while, you might not need to pick these points, but it might help initially.

Step 7: Trim sails and sail away.

The specifics on how to trim sails will be covered in a later tutorial, and sail trim for the specific wind conditions encountered in your classes will be covered in class. For now, just remember that you need to properly trim your sails. Then you can sail off to wherever you plan to go.

Hazards and Potential Problems

You may remember from earlier tutorials that a boat cannot sail into the wind. As previously stated, a tack is when the bow of the boat passes through the wind. That means during part of the turn (while passing through the no-go zone), you are relying on your momentum to get you through, not wind in the sails. Therefore, in order to successfully complete a tack, you must have some momentum when you start it, and you can't linger in the middle of the tack or you'll lose your momentum and get stuck.

Recap/Conclusion

All right! That's it! You have learned the definition of tacking, the steps of a tacking maneuver, the potential problems, and how to avoid those problems. Try to think through each step in your head before tacking, and make sure you know what you must do before getting in the middle of the turn. Most of the time, tacks happen pretty fast, and you will be hard-pressed to figure everything out in the middle of it unless you plan ahead.