

CHAPTER 9

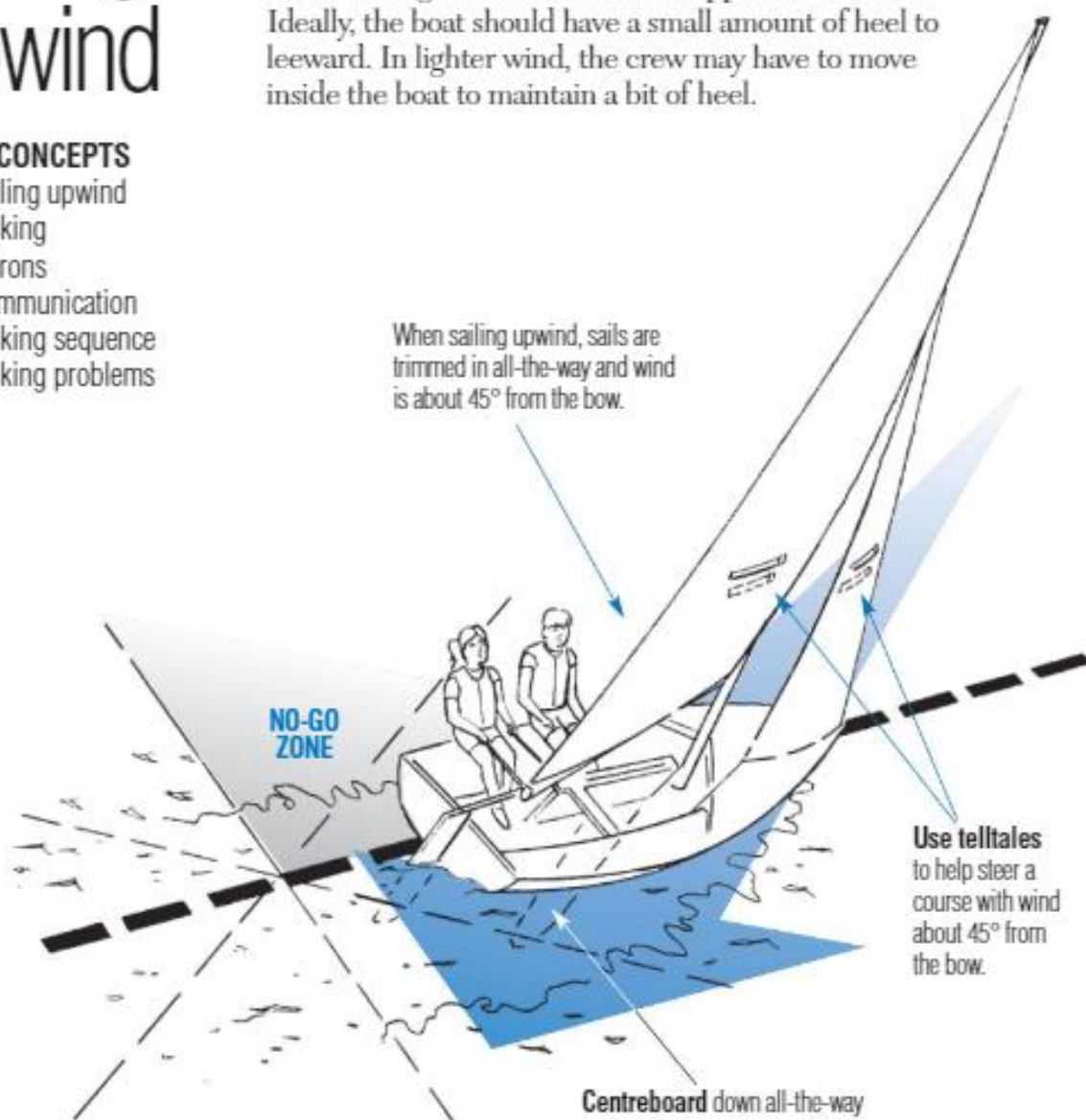
Sailing Upwind

KEY CONCEPTS

- Sailing upwind
- Tacking
- In irons
- Communication
- Tacking sequence
- Tacking problems

Learning to sail a boat upwind is one of the most rewarding experiences in sailing. It involves coordinating both steering and sail trim as you react to changes in wind strength and direction. As you learn, you will develop a sense of how all these elements work together. Experienced sailors often call this “sailing by the seat of your pants”.

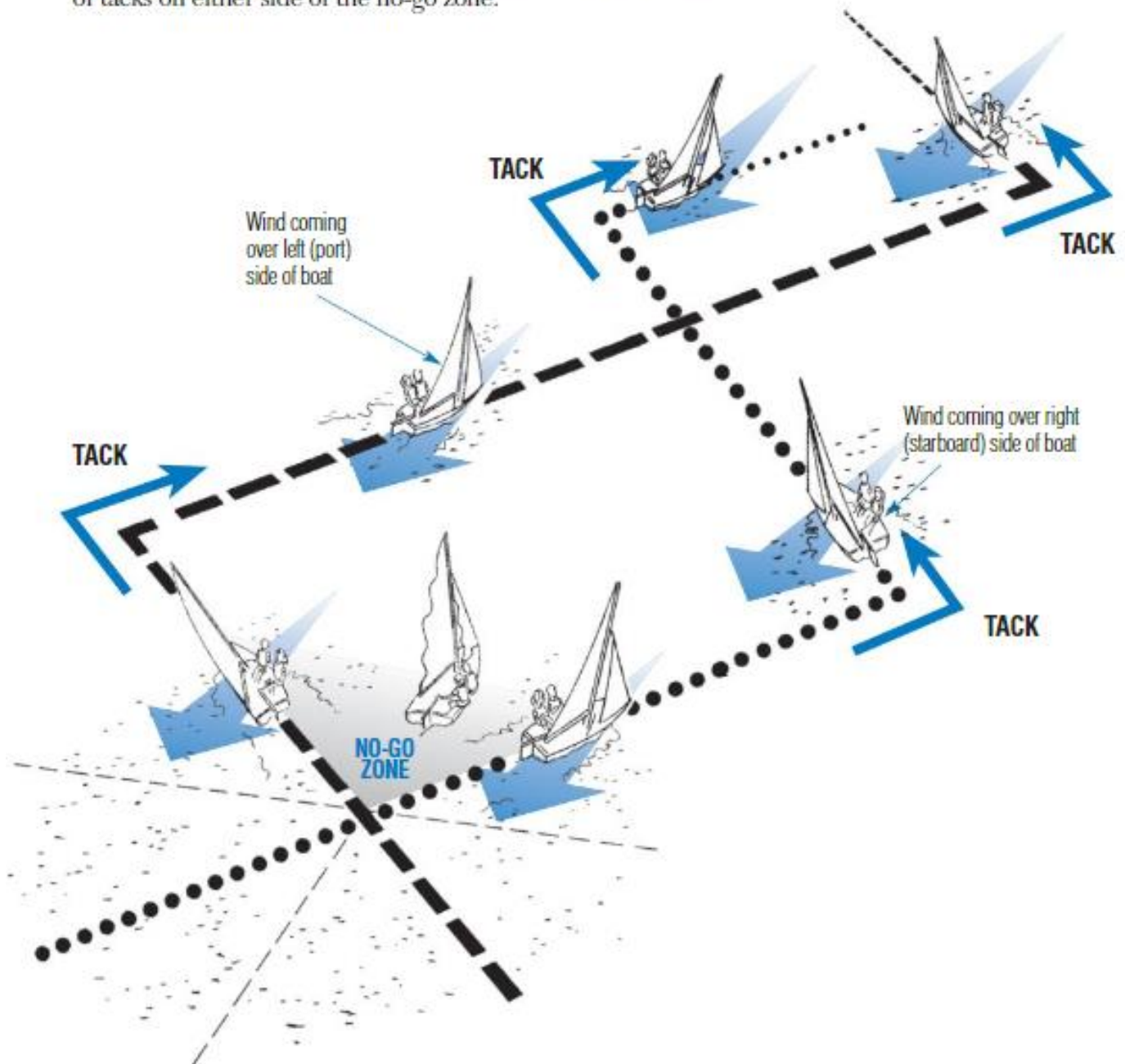
Sailing upwind requires proper body position, just the right angle of heel, and steering at a specific angle toward the wind. In the illustration below, notice the helmsman and crew sit facing the centre of the boat with the helmsman steering from the “high” (*windward*) side, opposite the boom. Ideally, the boat should have a small amount of heel to leeward. In lighter wind, the crew may have to move inside the boat to maintain a bit of heel.



Tacking Upwind

As we explained in the last chapter, a sailboat cannot sail directly into the wind, but can sail approximately 45° from the wind. So how do you reach a destination that is toward the wind? By sailing a course at 45° from the wind with the wind on one side of the boat and then on the other, you can sail a “zig-zag” course that makes progress upwind.

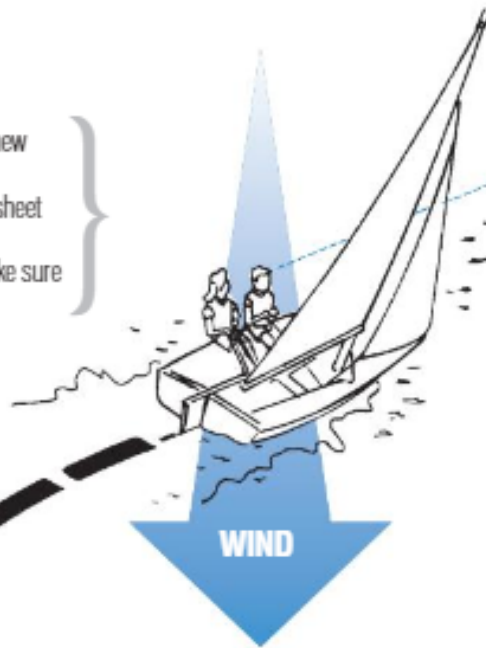
This zig-zag course is known as *tacking upwind* or *tacking to windward*. The boat makes progress into the wind with a series of tacks on either side of the no-go zone.



3 Completing the Tack

- ▶ The crew and helmsman move to the new windward side and rebalance the boat.
- ▶ The crew and helmsman sheet the jib sheet and the main sheet to the new tack.
- ▶ Both helmsman and crew check to make sure that the new heading is safe.

Make sure new heading is safe.

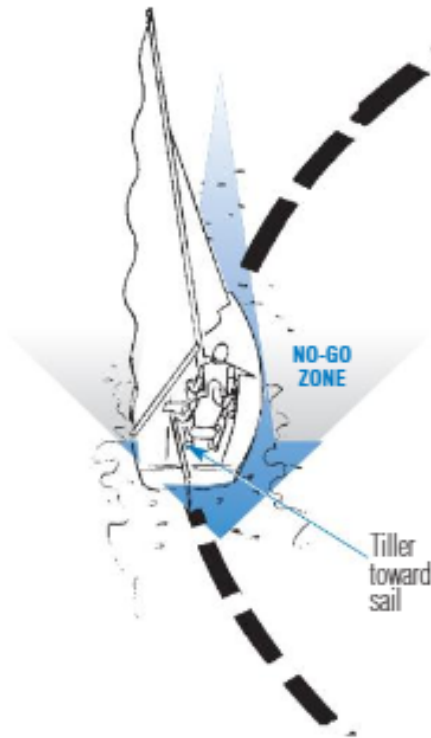


2 Bow Crosses the No-Go Zone (and Wind)

- ▶ As the boat turns into the no-go zone, the sails will begin to luff and the crew releases the jib sheet and moves with the helmsman toward the centre of the boat.
- ▶ The helmsman crosses the boat, while the crew starts sheeting in the new jib sheet once the jib has passed over the centreline of the boat.

NO-GO ZONE

Tiller toward sail



1 Preparing to Tack

- ▶ The helmsman and crew look around to make sure it is safe to tack, then make sure the boat has good speed.
- ▶ The helmsman announces, "ready to tack," and selects a land reference to steer for at the completion of the tack (approx. 90° to windward of the centreline of the boat).
- ▶ The crew uncleats the jib and replies, "ready," while still holding the jib sheet.
- ▶ If the helmsman or crew spots an obstruction or problem, he or she would reply, "no" or "not ready."
- ▶ The helmsman calls out "tacking" as he or she starts the tack by pushing the tiller toward the sail.

"Ready!"

Look around to make sure it's safe to tack.

"Prepare to tack!"



Communication

Tacking requires good communication between helmsman and crew. Since the helmsman is steering and in command, he or she should give the voice commands. The helmsman starts the manoeuvre by announcing “*prepare to tack!*” This means the crew should get ready to uncleat the jib and to move from one side of the boat to the other.

Once the crew is ready, he or she responds by saying “*ready!*” When the helmsman starts to turn the boat, he or she will say “*tacking!*” which indicates that the tiller is being pushed hard to leeward. The crew now knows the tack is beginning.

The Crew's Role

In tacking, the crew plays a vital role. He or she must help with boat balance and the jib sheet while keeping a lookout. Spotting land references and checking to make sure the way is clear, the crew provides important feedback to the helmsman. When first learning to sail, most helmsmen have their focus inside the boat, coordinating the main sheet and tiller. The crew can act as the helmsman's second pair of eyes until the tack is completed.

Tacking Problems

It is common to make mistakes when you are learning to tack. Some of the common mistakes are listed here, but with help from land drill practice and your instructor, it will not take long before you are tacking with confidence.

Tacking Problems...	Solutions...
<i>The boat stops turning while in the no-go zone.</i>	Start your tack by pushing the tiller more quickly toward the sail (do not shove it over abruptly, however). Be sure to begin a tack when the boat is moving with good speed.
<i>You forget to change jib sheets and the jib ends up sheeted on the wrong side.</i>	As you change position, release the old jib sheet and trim the new one.
<i>The boat is turned too far through the wind and the tack ends with the boat sailing on a reach rather than close-hauled.</i>	Before tacking, choose a landmark approximately 90° to windward (see illustration) to help establish your new course heading. As you finish your tack, aim your boat at this landmark.

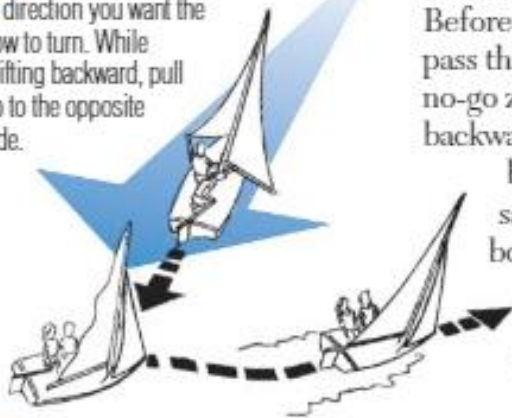
A Good Idea...

It's a good idea to practise tacking with land drills first before trying it on the water. In medium to light winds, a normal tack should take about five to seven seconds.



“Whatever happened to the shortest distance between two points being a straight line?”

- 1 Push tiller and boom in direction you want the bow to turn. While drifting backward, pull jib to the opposite side.



- 2 When the boat has turned out of the no-go zone, sheet in the jib and centre the tiller.

- 3 Sheet in the mainsail and resume sailing.

Getting Out of Irons

Before you start a tack, you'll need to be sailing fast enough to pass through the no-go zone without stopping. If you stay in the no-go zone too long, the boat will stop and then start drifting backward. This condition is called *in irons*, and is common for beginning sailors (it occasionally happens to experienced sailors too!). The easiest way to get out of irons is to push both the tiller and the boom in the same direction you want to turn, as your boat moves backward (see illustration). If the boat has a jib, the crew should pull it to the side opposite to the boom.

Crossing the Boat While Tacking

During a tack, the helmsman crosses from one side of the boat to the other while switching both the tiller and main sheet from one hand to the other. A smooth hand exchange is key to a

Crossing the boat while tacking



Start tack by pushing tiller extension (or tiller) firmly toward the sail.



Hold tiller over and **cross the boat** while facing forward. Take the sheet with you as you duck under boom. Watch for sails to luff (flap).

smooth tack, so practise it first on land (see Appendix for land drill) until you can do it smoothly and automatically.

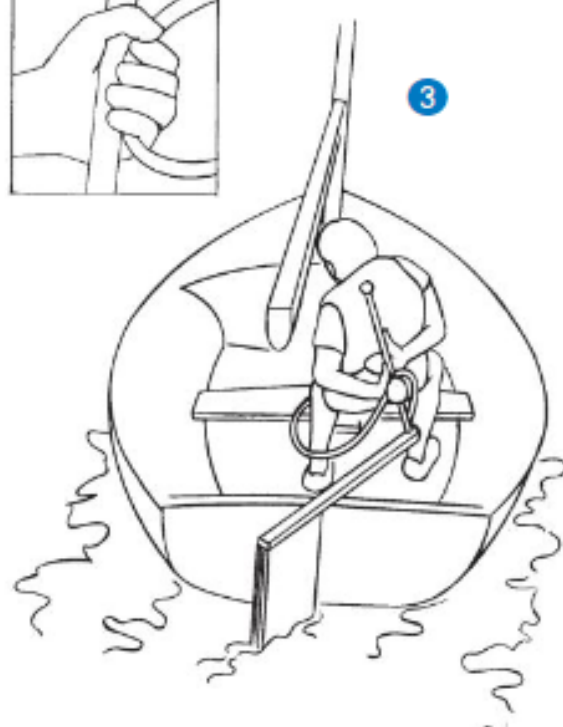
As you cross the boat while facing forward, switch hands by pivoting and reaching your sheet hand (still holding the sheet) behind your back to grab the tiller or tiller extension. When your sheet hand has the extension, then your other hand lets go of the tiller or tiller extension. One hand now holds both sheet and extension. After you are on the new side, your free hand grabs the main sheet in front of your body.

The timing of your hand switch will vary a bit depending on whether a tiller or tiller extension is used. (See Appendix for a land drill to practise tacking with a tiller.)

Many expert dinghy sailors prefer to switch hands *after* the tack to give them better control of boat balance and trim.

Four Key Points for Successful Tacks...

1. Keep tiller pushed over in its turning position throughout the tack.
2. Face forward and look ahead as you cross the boat.
3. Duck as you go under the boom.
4. Hold onto sheet and tiller, but switch hands that hold them (neither sheet nor tiller ever escapes your control while switching hands).



Reach sheet hand behind back and grab tiller extension, trapping the main sheet and the extension in one hand (see inset illustration above). Other (right) hand releases tiller extension.



Watch for sail to fill, then **finish tack** by pushing tiller to the centre. Reach for sheet with empty front hand so tiller hand can release it.