



Points Of Sail

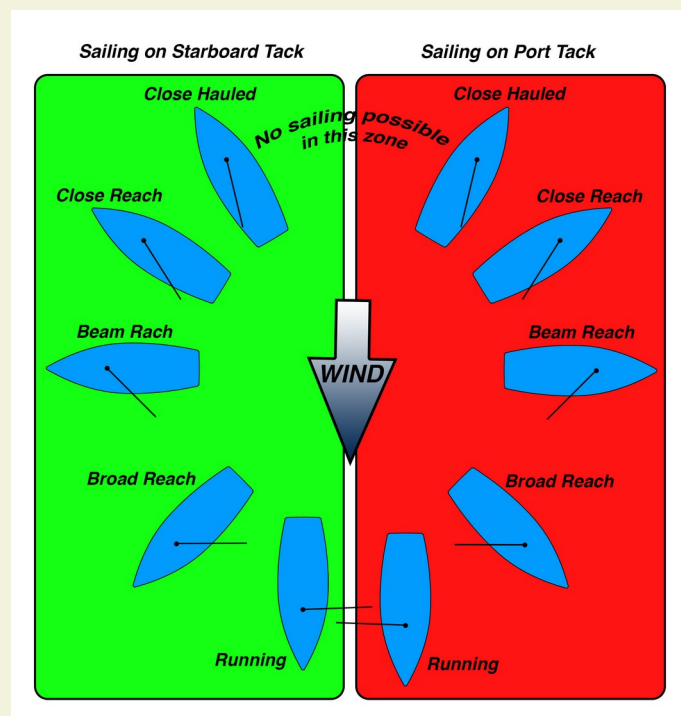
True and Apparent Wind

Wind direction for points of sail always refers to the true wind, the wind felt by a stationary observer. Apparent wind is the wind that would be felt by an observer on a moving yacht and is the combination of the true wind and the wind created by the yacht's movement through the water.

Points of Sail

A point of sail is a yacht's direction of travel under sail in relation to the true wind direction.

The principal points of sail roughly correspond to 45° segments of a circle. Sailing on a course as close to the wind as possible (approximately 45°) is termed "close-hauled". At 90° off the wind, a craft is on a "beam reach". At 135° off the wind, a craft is on a "broad reach". At 180° off the wind (sailing in the same direction as the wind), a craft is "running downwind".



Points of Sail

In points of sail ranging from close-hauled to a broad reach, sails act substantially like a wing, with lift predominantly causing the boat to heel and propelling the craft. In points of sail from a broad reach to running, sails act substantially like a parachute, with drag predominantly propelling the craft.

Which Tack?

A boat's leeward side is the side on which her mainsail lies – the other side is her windward side. A boat is said to be on the tack corresponding to her windward side. In the diagram above, all boats in the green sector are on starboard; all red sector boats are on port.

This distinction is important when it comes to decisions on which boat has right of way. When boats meet, a port tack boat must give way to a starboard tack boat irrespective of which point of sail each boat is on.

No-Go Zone

Yachts cannot sail directly into the wind, or on a course that is too close to the direction of true wind. The range through which the yacht cannot sail is called the "no-go" zone. In the no-go zone the sails stop producing any drive and the yacht will slow down and eventually stop. The span of the no-go zone may vary from 30 to 50 degrees either side of true wind and will depend on:

- The design of the yacht
- Wind Strength
- Sea state
- The type of rig and shape of sails
- How the sails are trimmed

A yacht that lingers in the no-go zone may finish up "in irons" where it is stopped with its sails flapping and unable to generate power. Because the yacht has lost forward motion it will have no steering, so getting out of "irons" can be tricky. This can happen if the yacht tacks too slowly, or otherwise loses forward motion while heading into the wind.

Close-hauled

A yacht is said to be sailing close-hauled when its sails are trimmed in tightly and it is sailing a course as close to the wind as possible. This point of sail lets the yacht travel diagonally to the wind direction and thus make it's way to windward.

The smaller the angle between the direction of the true wind and the close hauled course of the yacht, the higher the yacht is said to point. When racing, the ability to point higher than competitors will give the yacht an advantage.

Reaching

A yacht is reaching when the wind is coming from the side of the yacht:

- A "beam reach" is when the true wind is at a right angles to the yacht.
- A "close reach" is a course between a beam reach and close-hauled. The sails are trimmed in, but not as tight as for a close-hauled course.
- A "broad reach" is a course further away from the true wind than a beam reach, but above a run.

The sails are trimmed out, but not as far as when running.

Running

On this point of sail, the true wind is coming from directly behind the yacht. The sails are trimmed right out and act rather like a parachute.

When running, the jib can be set to windward (opposite side to the main), so that it is not blocked by the mainsail. Running with the jib to windward is known as 'gull wing', 'goose wing', 'butterflying', 'wing on wing' or 'wing and wing'.