The simplest, cheapest, and perhaps most effective method to see the wind—the lowly yarn telltale.

Wind Orientation

Wind is one of the trickiest elements for the new sailor to become attuned to because it can only be observed indirectly. Although we have moving air around us all of our lives, most of us are oblivious to it. Insulated in automobiles and offices, we don't have much need to pay attention to it unless a hurricane or other extreme weather event is in the forecast. While natural man probably was better at noticing approaching cloud formations and seasonal winds because his survival depended on it, in the age of instant everything, it's easy to ignore wind completely. Because sailing craft use wind, having a heightened sense of where wind is and being aware of its shifts obviously has its advantages for sailors.

What is wind, anyway? All wind is an extension of energy from the sun, 93 million miles away. Solar radiation warms the earth and its atmosphere, but the air does not heat or cool uniformly, resulting in air masses of different temperature and pressure. At the poles, masses of cold, high-pressure air are produced and make their way south to meet masses of warm, low-pressure air from the equator. Now throw in the rotation of the earth, the fact that most of the world's surface is ocean, disruptions caused by its various land features, and the differences in the rate that air masses heat and cool, and the result is incessantly moving air—wind.

Envision your sailing grounds on a more localized scale. Land areas warm and cool more rapidly than bodies of water. For that reason, cooler, denser air often flows from the water toward land, a sea breeze, during the day, and from the land toward water at night. Because the temperature contrast is usually greater during the day in summer, the sea breeze is usually stronger.

No wonder racers spend hundreds of dollars on wind instruments, since tuning into its shifts early can pay big dividends. Keep in mind that there's a relationship between the top of the mast and the clouds above.

Becoming aware of wind is often less science and more commonsense art. For the sailor preparing for the first day on the water, there are a number of things to notice dockside to cue one in on wind conditions. There are namely two variables we are looking for, speed and direction. Most sailing schools have some kind of banner functioning not only as a nautical flourish, but as something that can indicate what the wind is doing. Flapping wildly means—you guessed it—lots of wind; hanging straight down, a lack of wind; and alternating in between the two likely means puffy conditions. At the top of many sailboat masts is a wind fly, which will point in the direction the wind is coming from. Pieces of yarn tied to the stays, also let the sailor know the wind direction. The wind can also be sensed with the ears, face, or hands.

Flags, small or giant, are great illustrators of what is happening with the wind.

Anchored boats can also indicate wind direction, although current can complicate the picture. If there is no current, they will point into the wind. If the current is stronger than the wind, however, the boats may point in the direction of the current. If the wind and current are exerting about the same force on a boat, it will point midway between the current and wind directions.

Puffs of stronger wind can also be seen on the water in the form of wind lines, or darker, choppier water advancing toward the boat. Whitecaps form when the wind is between 11 to 16 knots. Below this speed, it takes some practice to see wind lines, and in light air one might be sailing with mere ripples visible on the water. Once sailing, a good exercise is to watch for changes in wind speed and call the puffs and lulls out. Also bear

in mind that currents can also distort the appearance of the wind on the water. Anytime the current flows against the wind, choppier waters result. When the current flows with the wind, the waters are smoother.

The important thing about wind is that the speed and direction are always shifting and require continual monitoring. Sometimes the boat experiences favorable windshifts called lifts that allow a boat to point higher into the wind. Other times the boat experiences headers, which force the boat to sail lower than the desired course.

How the air interacts with headlands, swirls off city buildings, or funnels through bridges affects how boats sail. Other boats nearby can likewise produce a change in wind speed. Race boats use their sails to blanket the wind from each other to assert tactical advantages. Large ships can also block wind and create large windholes. Terrain can amplify wind speed since a narrow strait of water between two promontories is likely to funnel and accelerate wind. Long expanses of unobstructed water also have an effect on sea state, allowing wind to sweep across the surface and build wavelets into chop, and chop into swells.

Here's what we talk about when we talk about wind: natural subtitles that can't be captured electronically, a light breeze in the foreground, a small lull or smooth spot farther back.

It is also good to recognize that the wind you feel at sea level is related to the clouds above you. Do the bottom layers of clouds move faster than the top layers? Are the clouds and the wind you feel moving in the same direction? Is there a clearing trend or are the clouds billowing up into intimidating thunderheads? Is the wind you experience sucking you toward them? Noting conditions before you leave the dock will give you something of a benchmark once you get underway.

One can read information about the wind from other sailboats as well. A boat upwind several miles away heeling over on its ear while you are barely moving means more wind is heading your way. Conversely, a boat upwind that seems to be flat and listless means a lull lies in that direction. It doesn't take a rocket scientist to figure out that a sailboat returning with its crew in full foul-weather gear and with a reef in the main has seen some breeze, and that if you are just heading out, you might do well to put a reef in as well.

And it doesn't take a genius to figure out the best way to learn about wind is to get out and sail in it. So stop reading, and start sailing!

Beaufort Scale

The Beaufort Scale is a useful tool to estimate wind speed from sea state.

Force	Wind Speed	Description	Sea Conditions	Feet
Force 0	Less than 1 knot	Calm	Sea like a mirror.	0
Force 1	1-3 knots	Light Air	Ripples with the appearance of scales;no foam crests.	1/4-1/2
Force 2	4-6 knots	Light Breeze	Short, small-pronounced wavelets.	1/4-1/2
Force 3	7-10 knots	Gentle Breeze	Large wavelets with some crests.	2
Force 4	11-16 knots	Moderate Breeze	Increasingly longer small waves; some with whitecaps (foam crests).	4
Force 5	17-21 knots	Fresh Breeze	Moderate lengthening waves, with many whitecaps and some spray.	6
Force 6	22-27 knots	Strong Breeze	Large waves, extensive whitecaps, and some spray.	10
Force 7	28-33 knots	Near Gale	Heaps of waves, with some breakers whose foam is blown downwind in streaks.	14
Force 8	34-40 knots	Gale	Moderately high waves of increasing length and edges of crests breaking into spindrift (heavy spray). Foam is blown downwind in well-marked streaks.	18
Force 9	41-47 knots	Strong Gale	High waves with dense foam streakes and some crests rolling over. Spray reduces visibility.	23
Force 10	48-55 knots	Storm	Very high waves with long, overhanging crests.	29
Force 11	56-63 knots	Violent Storm	Exceptionally high waves that may obscure medium size ones.	37
Force 12	64-71 knots	Hurricane	The air is filled with foam and spray, and the 45ft sea is completely white	45