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## WIND CHECK

by Rich Stowell, MCFI-A, SAFE #0002

**FOR SALE**

**(3) Windsocks, (1) Tetrahedron**

***Rarely Used!***

So read the hastily scribbled sign tacked to the airport bulletin board, no doubt posted by a frustrated airport manager. Southern California was in the midst of yet another in a series of Santa Anas, typically three-day cycles of strong east winds generated whenever high pressure takes up residence over the four-corner states. When these winds reach Santa Paula, you can always count on four things: dry skin, grit in your teeth, lumpy air, and downwind landing attempts. Not much you can do about the first three, but trying to land on Runway 22 when all indications clearly point to Runway 04?

And I'm not referring to light tailwinds, either. I'm talking hundreds of downwind landing attempts made in gale force winds. A classic example: The airport was buttoned up tight as 40–50 mph east winds pummeled the Heritage Valley. Instructors at the local flight school were milling around the office, telling hangar stories, canceling flights for the day, when over the CTAF a pilot announced entering downwind for Runway 22. A few brave souls ventured out into the blowing sand to see if what they heard was true. Sure enough, they spotted an Ercoupe clawing its way upwind, on a "downwind" leg. What happened next took only a few seconds: The airplane rolled into its base turn. With its belly fully exposed to the scorned wind, the Ercoupe's flight path collapsed into a tight V as it accelerated toward the runway. Air friction caused the leading edges to glow red-hot (or so witnesses claimed) as the airplane streaked past the airport. The Ercoupe didn't come back for a second try.

On another occasion, a 15-knot tailwind increased a Bonanza's landing roll to 2700 feet. Unfortunately, Santa Paula then only had 2600 feet of runway. The pilot jammed on the brakes, smoking the tires as the airplane skittered onto the dirt overrun. Two FAA inspectors witnessed the event and cordially invited the pilot over for a ramp check. But that wasn't the end of it. Ten minutes after the Bonanza's conspicuous arrival, a Mooney did the exact same thing. Another ramp check. These FAA inspectors weren't looking for trouble—they were minding their own business, unwinding after an aerobatic flight. The ramp checks fell into their laps like manna from heaven.



But this apparent lack of wind awareness isn't just a Santa Paula phenomenon. In one case, I was checking out a pilot in his newly acquired Extra 300 at his home base in Southern California. While returning from the practice area for some touch-and-go's, we spotted an imposing line of standing lenticulars trailing off of a mountain ridge beyond the airport. That sight, coupled with increasingly turbulent air, foreshadowed the coming atmospheric conflict. The opposing winds would collide in the airspace above the airport.

It would have been futile to ask the controller for a wind check—it smacked us from all directions. Throughout the pattern and especially on final, I continuously called out the various windsock indications as the student flailed the controls against the agitated air. In the space of about 20 minutes (and with tremendous cooperation from the tower), we did touch and go's in all directions on each of the airport's three runways. Afterwards, the student admitted that he had been flying from the airport for 20 years, yet he didn't know where the windsocks were until now. He vowed to spy on them from that day forward.

Perhaps the scariest disregard for the wind I've seen occurred at a busy airport in the midwest. My student and I had just finished a session of touch-and-go's in his Christen Eagle. The challenging winds were from the south at 29 knots, gusting to 32. But the high overcast darkened ominously and the winds picked up as we made our way to a busy pilot's lounge. The tower announced revised wind information: "Winds 180 at 50." A small biz jet then reported in from the west. To our surprise, the pilot requested Runway 9L. Pressed up against the windows of the pilot's lounge, no one breathed as we watched the hapless jet bounce around like a pinball—nosewheel, left main, right main, back hard onto the nosewheel. The pilot demonstrated that the biz jet was landable with a direct, 50-knot crosswind, but it wasn't pretty. Did company policy dictate the use of a specific runway? Which runway was effectively "longer" at the time? Runway 18, measuring 2700 feet and perfectly aligned with the 50-knot headwind, or Runway 9L, measuring 4000 feet with zero headwind component? And what was the published maximum demonstrated crosswind component for the aircraft?

Landing is challenging enough when everything is in our favor. Why unnecessarily compound the degree of difficulty by putting an appreciable wind at our back or to our side when we could just as easily choose to land into it? Admittedly, sensing and correcting for the wind can often be more an art form than an exact science; nonetheless, it's an important skill to develop. It's also a key ingredient in making better landings.

The simplest way to improve wind awareness is to make it a habit to look at airport wind indicators while taxiing, before takeoff, and while flying around the pattern. Even if you've received runway-in-use or wind advisories, be sure to reconcile that information against the wind indicators. Just because a half dozen airplanes are using a particular runway doesn't mean that they're landing into the wind. This could be by design, or by mistake. And if the wind is actually measured at an airport, the instrumentation could be far removed from the approach end of a runway, especially at sprawling airports. Local topography, approaching fronts, or storm activity could result in wind conditions at the runway ends significantly different from the reported conditions.



Planning a cross-country? Study the airport diagram beforehand to see if it depicts the location of any wind indicators. Be on the lookout for other indicators as well. Smoke, dust stirred up behind vehicles driving on dirt roads or behind tractors plowing fields, flags flying atop fast food restaurants, even the small flags on the greens at golf courses can provide useful wind information. The Beaufort Wind Strength Scale offers an easy method of guesstimating wind speed based on readily observable phenomena (Table 1). A variant of this scale used to appear in previous versions of the FAA's [Airplane Flying Handbook](#) under Seaplane operations:

**Table 1: Beaufort Wind Strength Scale (for knots, divide mph by 1.15)**

Beaufort No.	Wind Speed	Description
0	< 1 mph	Calm: Still, smoke rises vertically.
1	1-3 mph	Light Air: Rising smoke drifts, weathervane is inactive.
2	4-7 mph	Light Breeze: Leaves rustle, can feel wind on your face.
3	8-12 mph	Gentle Breeze: Leaves & twigs move around, lightweight flags extend.
4	13-18 mph	Moderate Breeze: Thin branches move, dust and paper raised.
5	19-24 mph	Fresh Breeze: Small trees sway.
6	25-31 mph	Strong Breeze: Large tree branches move, telephone wires whistle, umbrellas difficult to control.
7	32-38 mph	Moderate Gale: Large trees sway, noticeably difficult to walk.
8	39-46 mph	Fresh Gale: Twigs & small branches are broken from trees, walking into the wind is very difficult.

Even airport windsocks reveal more than you might think. Advisory Circular 150/5345-27D contains specifications for windsock assemblies (the FAA refers to windsocks as "wind cones"). Primary windsock assemblies should respond to as little as three knots of wind (a Light Breeze on the Beaufort Scale), and should align within five degrees of the true wind direction. And regardless of the length of the windsock, it should be designed so as to extend fully when the wind reaches 15 knots (a Moderate Breeze on the Beaufort Scale). While the creaky windsock assemblies at some airports may have seen better days, you at least have a starting point for estimating the wind if you'd simply commit to studying the windsocks.

Next time you're flying, be on the lookout for the telltale effects of the wind. The more you can discern about the wind, the less it will be able to catch you off guard.