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COMMENTARY / THE CLASSIC INSTRUCTOR

Signs, They're Everywhere

Getting your head out of the cockpit

BY STEVE KROG

SIGN, SIGN, EVERYWHERE A SIGN — but how much do we pay attention to them today?

What am I talking about? Getting your head out of the cockpit and becoming familiar with the topographical signs around you. Wind direction and velocity, cloud cover and formations, terrain features, temperature changes, and weather all have an influence on flight.

Not too many years ago, we were taught during our primary flight training to read the signs while learning to fly. "Reading and interpreting the signs may save your life one day" was what I was told. I still live by that rule today.

In today's aviation world, student pilots, as well as seasoned pilots, are too easily distracted by the many widgets, gadgets, and whiz-bang toys available today. So busy pushing buttons and enjoying the fascination of these new toys, they forget to fly the airplane and observe what is going on around them.

Not long ago I did an FAA flight review with the owner of a fairly new aircraft equipped with all of the latest gadgets. I have nothing against these aircraft, but the pilot was so busy trying to play with all the buttons and screens, he never once looked out of the cockpit. Sure, he had ADS-B as well as other traffic identifiers, but when traffic was announced, he never looked to see where it might be, or if there was other traffic in the immediate area. These electronic tools are all very helpful when flying in Class B or C airspace, but we were operating in Class E and G airspace. We landed at three different airports over the course of an hour or so, and it was unnerving to me that the pilot never spent any time scanning the area around him. If we had experienced a total electrical failure, or an engine failure, or both, the whiz-bang screens wouldn't have been of much help for selecting a landing site and arriving safely.

When I conduct a student dual cross-country flight, for example, I play the what-if game throughout the flight. What if the engine quit at this very moment? What would you do and where would you go? Assuming they react and pick a field for a simulated emergency landing, we proceed with the why game. Why did you pick that field? Why did you opt to land going south? What direction was the surface wind coming from?

While en route during the flight, I also like to ask if they can tell what direction the wind is coming from. Especially the surface winds. At first I get a blank stare followed by a statement that the winds at 3,000 feet were forecast to be whatever. The keyword here is *forecast*. Not measured but *forecast* based on a computer program monitored by a weather forecaster. I have nothing against weather forecasters. Even though they have state-of-the-art tools with which to work, weather systems are always evolving and don't necessarily follow the path the weather forecaster predicted.

Surface wind direction and velocity can generally be determined through visual topographical signs. For instance, look for a nearby body of water. Which side of the lake or pond has smooth water and which side(s) is experiencing wave action? The smooth surface water side tells you the surface wind is coming from that direction. Wave action provides a clue as to the velocity. Rough water or small whitecaps indicate the surface wind is probably 20 knots or greater.

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Viewing this body of water from the air it can clearly be noted the surface wind is blowing from left to right.

Since most training flights as well as pleasure flights take place below 4,000 feet AGL, flags or pennants can be easily spotted and indicate the direction of the wind. The wind is always blowing the flag away from the flagpole. In the 1920s and 1930s the few flight manuals available often referred to determining surface winds by looking at the clothes hanging from the clotheslines. Like many other things, clotheslines have all but disappeared today.

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Here in the upper Midwest we have a lot of corn, soybean, alfalfa, and wheat fields. Surface winds create a wave action across these fields much like what can be seen on the water surface. Observe the wave patterns from the air for a minute or two, and surface wind direction can easily be determined.

Viewing these windmills from the air, one can determine the wind is coming at us. The blades are turning counterclockwise.

Another great wind indicator available to pilots is the windmill electrical generators that have sprung up all over the country. We have two large bands of windmills about 5 and 15 miles from our airport. Those that are 5 miles away can be easily seen from the hangar apron. Looking to the west and seeing they are turning, surface wind direction and velocity can be determined. Students often ask, "How can you tell the direction that far away?"

When the windmill is facing into the wind, the blades are turning clockwise like standing in front of a Continental or Lycoming powered airplane. The windmills point into the wind, and the wind is at your back as you view the windmill. If the blades are turning counterclockwise, the wind is in your face. Wind velocity is a guesstimate based on how rapidly the blades are turning. Some of the windmill farms are designed to feather the blades and shut down when the surface wind exceeds a certain speed, say 20 knots or better.

Another practice I try to instill in my students is looking at the surface features of the airport at which we're landing. Are there tree lines, hangars, or other obstructions located near the runway on which we intend to land? If landing with even a light crosswind, these obstructions can significantly influence the surface wind pattern when taking off or landing.

The next time you decide to make a pancake breakfast pleasure flight, forget fixating on or playing with the iPad moving map and spend some time studying the signs. See if you can find a flag, small body of water, smoke column, or some other means to identify surface winds. Knowing your immediate surroundings may save you and your airplane someday. EAA

Steve Krog, EAA 173799, has been flying for more than four decades and giving tailwheel instruction for nearly as long. In 2006 he launched Cub Air Flight, a flight-training school using tailwheel aircraft for all primary training.

Viewing the approach end of Runway 29, the wind is from about 260 degrees at 12 knots. One can anticipate rolling gusts over the top of the scrub tree line. While on final approach to Runway 29, one can anticipate a dead air area just prior to reaching the tree line followed by some good bumps and updrafts while crossing the tree line.

This shows the approach end of Runway 11 with a crosswind component of about 40 degrees from right to left when on final. On short final rolling gusts created by the hangars can be anticipated. If the runway length is long enough, I advise students to land long with an aim point just beyond the hangars. The crosswind becomes steady with no rolling gusts.

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