



STEVE KROG

COMMENTARY / THE CLASSIC INSTRUCTOR



Chasing Airspeed

How to avoid it

BY STEVE KROG

ONE OF THE MOST COMMON mistakes seasoned pilots and student pilots make is chasing the airspeed. It's a challenge for students and some pilots, frustrating for flight instructors and designated pilot examiners (DPEs), and ranks near the top of irritants similar to following a highway vehicle when the driver taps the brakes every minute or two. I'm easygoing but following a brake-tapping driver for more than a mile or two makes my blood boil. Chasing the airspeed falls into the same category.

When flying with a student, I'll often ask them what it is they are trying to do as the aircraft nose bobs up and down, never stabilizing. The response is often, "What do you mean? I'm not doing anything wrong." I explain, "You're fixating on the airspeed indicator and not paying attention to any of the other indications for stabilized flight." The airspeed is fluctuating plus or minus 10 mph and never comes to rest on the desired airspeed.

While fixating on the airspeed, the heading wanders, as does the altitude. Add to that trying to follow a magenta track on the GPS screen and you'll be experiencing both horizontal sashaying left and right and positive and negative vertical movement. A side view of your ground track appears as if you might be practicing S-turns while tracking on the magenta line.

I had a student several years ago who couldn't stop changing the airspeed and moving the control yoke. Back and forth the yoke moved left and right. Then he would mix in forward and back pressure on the yoke. I asked him why he was doing this. He didn't have any idea that he was doing so, saying the air seemed a bit choppy.

Once I pointed out the unnecessary control movements, he smoothed out his inputs. However, within a few minutes, he was repeating his actions. To help reduce the inputs he was making, I would slide my right knee so it would contact the yoke. Then I

would apply pressure with my knee to prevent the yoke from moving forward and back or left and right.

Chasing your airspeed is not unsafe as long as you are flying at a safe altitude. But it is certainly an inefficient action that wastes time and fuel. Apprehensive first-time passengers might find it somewhat uncomfortable. Mix in a little turbulence and your passenger(s) might be asking for a quick return to the airport.

For those of you who strive for perfection, think about this. You're flying to a pancake breakfast one hour away. The plan is to cruise at 3,500 feet at 2450 rpm, giving you a 90 mph ground-speed. Arriving at your desired altitude, you settle in for an enjoyable 60-minute flight. Moments later, you notice the altitude is indicating 3,650 feet, a 150-foot increase. Airspeed is 80 mph, and the heading drifted 2 degrees left. You lightly push forward on the yoke or stick to get back to 3,500 feet while enjoying the scenery pass below.

The next time you check your airspeed it now registers 100 mph, and the altitude shows 3,400 feet. Attempting to reestablish 3,500 feet, you apply slight back-pressure. A shallow climb is initiated, airspeed slows, the nose drifts another degree or two to the left. As you reach 3,500 feet indicated, you push the nose over again. But the altimeter lag comes into play, and your altitude is showing 3,600 feet.

If you play this game of chasing airspeed for the entire hour, you will have wasted time, changed altitude an equivalent of 3,500-4,000 feet, and your heading will be off by 10-12 degrees. Some of you may treat this situation indifferently, and that is fine. But a good pilot is like a good golfer, always striving to be better.

Why do I want to stress chasing airspeed? If this action continues into the airport traffic area and traffic pattern, it can become a detriment to making a safe and stable approach and landing.

If the recommended traffic pattern altitude at your destination airport is 1,000 feet, variations to that can and will become an issue as you enter the traffic pattern. For example, you desire to enter the pattern at exactly 1,000 feet and 85 mph. But if you enter the traffic pattern at 1,200 feet, you may not even notice the excess altitude until reaching the midpoint of the base leg. Power is reduced abeam the approach end of the runway, and the nose pitches slightly downward. Speed unfortunately increases as you attempt to lose altitude. The excess speed causes you to extend beyond where you desire to make the turn onto the base leg, and the altitude is still greater than desired.

I like to fly a tight pattern in all training aircraft and be established at approximately 500 feet AGL at the midpoint of the base leg. But in this example, you went beyond your desired turning point, and your altitude is still greater than you wish it to be.

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Pushing the nose over again to help lose the excess altitude increased the airspeed by 10 mph. Turning onto final you realize that you are a bit farther out from the runway than usual, and now you're a bit too low and your airspeed is 65 mph. Continuing inbound, you push the nose over to reestablish a desired 75 mph for the final approach. But, being too low, you pull the nose up and add some power.

Back on glide path everything looks good, but your airspeed has now crept up to 85 mph. You think that should be okay but then realize you are landing on a 2,200-foot runway. If the desired speed at touchdown is 45 mph, that leaves 40 mph in excess energy that has to be dissipated. If each 5-10 mph adds 1,000 feet to the float down the runway, you will need approximately 4,000 feet of runway before touching down. That's good enough if you are landing on an 8,000-foot runway, but in this example, you only have 2,200 feet.

Realizing the situation you have managed to create for yourself, you have two options. Try to force your aircraft onto the runway and probably do significant damage to it, or go around, collect your thoughts, and focus on what you must do to safely and comfortably land your airplane on 2,200 feet.

This predicament could easily be avoided had you, the pilot, remained focused on the horizon rather than on your airspeed indicator. Instrument fixation can — and will — get you into trouble if you continue doing so throughout the approach and landing.

How does a pilot overcome chasing airspeed? There are several methods I like to use depending on the aircraft. If I recognize a student chasing airspeed, I'll take the controls, level the aircraft, and point out where the top of the engine cowling is in relation to the

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horizon. Once at a straight and level configuration, take a good mental picture of the space between the cowling and the horizon. This is usually step one in teaching attitude flying as well.

I'll repeat this procedure for establishing a full-power climb. Where does the horizon line cut through the cowling while maintain-

ing a constant recommended airspeed. Again, take a good mental picture of this attitude and use it hereafter every time you make a full-power climb.

A proper descent can also be taught in the same manner. Reduce the power to the desired setting, like 1800 rpm, and lower the nose slightly to establish a constant-speed rate of descent. When reaching the descent airspeed, maintain this attitude. Look where the top of the cowling is in relation to the horizon, and then continue holding this attitude.

When teaching in an Aeronca Champ, for example, I use a slightly different method since the nose is somewhat lower in the normal configuration. I'll place a thin strip of blue masking tape on the inside of the windshield. This becomes the reference point for establishing a constant-speed full-power climb. It can also be used for establishing and practicing a constant-speed descent.

There is an old saying that says, "A pilot just drives the airplane, but an aviator thinks of and feels the airplane, becoming one with it." The next time you go for a pleasure flight, challenge yourself to become an aviator and don't settle for just being a pilot. *EAA*

Steve Krog, EAA 173799, has been flying for more than five 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.