



**STEVE KROG**

COMMENTARY / THE CLASSIC INSTRUCTOR

# Faulty Flying or Faulty Instruction?

Teaching more than the minimum

BY STEVE KROG

**THROUGH NO FAULT OF** their own, hundreds, if not thousands, of students have been trained to meet only the bare minimum required to pass a checkride, sometimes resulting in unsafe flying. This practice has, in my opinion, led to situations or incidents that could have been prevented had these students been given more thorough training. For example, there are recorded instances when a pilot has declared an emergency on a VFR flight because the airspeed indicator malfunctioned in flight.

For years the flight instruction profession has been one of minimal pay, long hours, and few – if any – benefits. The majority of us who chose to become instructors did so strictly for the purpose of building flight time and advancing our hoped-for aviation careers.

Before any instructors reading this take offense, I'm not trying to point a finger at anyone. However, I do ask you to honestly ask yourself if you became a flight instructor for any reason other than building flight time. Secondly, did you honestly devote your full effort to teaching the students you were working with? Or did you look at your logbook every day and count the hours? As flight instructors, we've all been there at one time or another. I have been providing flight instruction for more than four decades, and I can honestly admit that there were times earlier in my career when I taught to meet bare minimums and build flight hours rather than thinking of the student and going beyond minimums to teach more thorough practices.

What do I mean by teaching thoroughly and properly? Following are several examples. Ask yourself how you taught or dealt with each situation.



I'll begin with a normal takeoff. If you were taught in a tricycle-gear aircraft, here's what I've observed when checking out individuals. Once aligned with the runway centerline, the yoke is pushed slightly forward, full power is applied, and the aircraft is held firmly on the ground until an acceptable airspeed is reached. Then the airplane is literally pulled off the runway while the pilot stares at the airspeed indicator.

The checkout in a tailwheel airplane is a bit different. Once full power is applied, the control stick is pushed full forward, bringing the tail high into the air. The pilot can now see over the nose and stares at the airspeed indicator until reaching a "safe" speed for lift-off, then yanks the plane into the air followed by staring at the airspeed indicator for at least 20 seconds before looking elsewhere. I once had a young flight instructor who wanted to gain some additional tailwheel instruction even though a tailwheel signoff had already been achieved. When I questioned why, the instructor related that they had been taught to do this by another instructor.

Obviously, these example pilots were never taught to *feel* the airplane. I've mentioned in previous articles the importance of getting to know your airplane. To fly it efficiently and proficiently, one must be able to feel the airplane.

When making a takeoff in either type of aircraft, as power is applied and speed increases, the relative wind pressures over the elevator can be felt. In a tricycle aircraft, apply light back-pressure on the yoke to raise the nose slightly and create a positive angle of attack. Make the wings and wind work for you. When the speed is such that the wings are generating enough lift, the aircraft will literally fly itself off the runway. No yanking or yoke pulling is required, and there is no need to stare at the airspeed indicator. The airplane has just told you when it was ready to fly.

The same principle applies to a tailwheel aircraft. Starting with the stick all the way back or aft, apply full power. Speed builds and elevator pressure can be felt. Relax the back-pressure, slightly raising the tail wheel off the runway but keeping the wing in a

positive angle of attack attitude. Again, when enough lift is being generated, the airplane flies itself off the runway.

After takeoff, do you stare at the airspeed indicator trying to maintain a certain airspeed? Remember, the steam gauge type of instruments lag behind what the aircraft is doing by two to three seconds. If you fixate on the airspeed indicator, the climb will be a series of vertical S's while you chase the desired airspeed. Or, do you practice attitude flying by looking out over the nose, positioning it in relation to the horizon, easily and efficiently establishing the desired speed for climbing out? In a J-3 Cub, for example, in a desired 60-mph climb, the horizon cuts through the instrument panel just above the tops of the mounted instruments.

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How many of you were taught to fly the airplane with the airspeed indicator covered? I was, and I continue to use this practice, going beyond the minimums and teaching how to see, feel, and listen to the airplane being flown.

Coordinated medium and steep turns are another indicator showing a weakness in the type of instruction you may have received. Or, maybe you have become lax on understanding and using the rudder inputs properly. In either situation, skidding and slipping turns are the result. Again, the airplane will let you know that your turn is being executed inefficiently. Listen carefully for the wind and engine noise. You can also feel it in the seat of your pants if the aircraft is in either a slipping or skidding turn. Learn to listen and feel your airplane.



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When conducting a flight review, I have the individuals perform a couple of medium and steep turns in each direction. I'm interested in first seeing if they are using good coordination practices for the control inputs. I also watch for how they are controlling altitude. Are they positioning the nose in relation to the horizon? Or are they staring at the altimeter? If so, it's time to spend a few minutes teaching attitude flying. It makes altitude control so much easier.

Proper trim usage is another weakness I've frequently encountered. Apparently, some students were never taught to properly trim an aircraft in flight. The students I work with learn early on that trim is your friend and pilots are meant to fly any airplane with three fingers. If it takes more than three fingers, the aircraft is not trimmed properly. I have a hard time understanding how a pilot can fly for a period of time holding some form of control stick or yoke pressure. One would think that developing tired muscles would offer a clue to adjusting the trim.

Assuming you've set the trim for the takeoff and climb, when reaching your desired altitude, level the aircraft using whatever control pressures are needed. Then, adjust the power to your preferred power setting. After that, adjust the trim until reaching a point where the aircraft will fly with your hands and feet off the controls (assuming your airplane is rigged properly). You will need to adjust the trim several times as speed increases until achieving the hands-off configuration. This can still be done when the air is a bit choppy.

Descents, I've observed, are another weakness. Many have either never been taught or have forgotten how to establish a controlled descent. The situation I most encounter is in the approach to an airport where a landing is intended. Anywhere from 1,000 to 2,000 feet needs to be lost. Rather than reducing power and adjusting trim for a smooth gradual descent, the individual just pushes the nose over. As we enter the traffic pattern the airspeed is significantly greater than desired at this point of the approach and landing.

Another situation observed is when the pilot does reduce the power for the descent, but rather than establishing a steady nose attitude, the pilot fixates on the airspeed indicator and chases the airspeed. Like the climb-out, the descent is a series of vertical S's.

The rapid speed descent generally leads to a sloppy final approach that's well over the desired airspeed, and usually to a go-around. This could have been handled much better by reducing power, maintaining a constant airspeed, and thinking ahead of the airplane.

Another training weakness I've observed is fixating on and chasing the airspeed throughout the final approach leg of the landing. Altitude control becomes secondary leading to required power changes, which makes the approach to landing quite unstable. I believe it is vital for a pilot to learn attitude flying if safe, consistent landings are to be made.

An old friend, who has since died, once shared with me a flying philosophy that has stuck with me for years. He said, "Pretend that on every flight your very elderly and frail grandmother is your passenger. Being frail, she doesn't like abrupt maneuvers, and she has a severe case of hemorrhoids. All climbs, descents, and turns must be smooth, gentle, and coordinated so as not to upset them or her!" I've thought about that statement many times and have frequently shared it with students who can't seem to grasp the concept of smooth, coordinated flight. It usually brings a chuckle, but it also helps improve their flying!

Some of us pilots received great training, far beyond the minimum required. Others of us were given the bare minimum to get by. If you find yourself doing some of the things mentioned in this article, it's time to become your own toughest critic and strive to be a better pilot. It should be a goal for all pilots to improve proficiency and safety with every flight. *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.