STEVE KROG
COMMENTARY / THE CLASSIC INSTRUCTOR

Transferring Knowledge

A weak link

BY STEVE KROG

I WROTE AN ARTICLE several months ago about the lack of common sense I've observed in airport surroundings. This was not meant to point fingers at anyone. Rather, in today's environment, individuals are not exposed to a lot of things that would improve common sense.

Working closely with both students and designated pilot examiners (DPEs), it is apparent there is a weak link in the process of learning to fly: transferring common sense from book learning to safely flying an airplane.

Hours are spent preparing a student for a checkride. Students dutifully memorize volumes of material to prove to the DPE they can answer any question thrown at them. This approach is fine to a point. Where it begins to falter is when that information is to be used in a real-life situation.

Several years ago, the FAA required DPEs to use scenarios during both the oral and flight portions of the checkride. I'll admit, I wasn't a strong supporter of this approach in the beginning. After some thought, it made sense. Every flight is a different scenario. One day, the wind is blowing and the temperature is in the 90s. The next day it may be calm and 65 degrees. Power and mixture settings affecting performance will be quite different from one day to the next. A good pilot needs to understand these effects and then transfer this knowledge to adjusting the performance controls of the airplane.

Instructors oftentimes teach a maneuver to meet the minimum standards as outlined by the FAA in the Airman Certification Standards (ACS). What we forget to do is explain why the maneuver is important to know and understand. For example, power-off stalls performed 1,500-2,000 feet above ground level (AGL) are part of the private pilot curriculum. We practice these by performing them straight ahead and with shallow bank left- and right-turn configurations. The student learns to perform them smoothly and within the ACS standards.

The instructor, now satisfied, moves on to another maneuver. What is missing is explaining why we do power-off stalls. I've asked

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students the question of why we do power-off stalls. Most hesitate and then comment that power-off stalls are taught so that you never enter a spin. Now you have a student pilot who is afraid of the stall because of the misconception that we perform them only for the purpose of preventing a spin.

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POWER-OFF STALLS OCCUR WHERE?

If the instructor had taken the time to discuss where power-off stalls might happen in the course of a flight, the student would understand why we do them and what we are trying to prevent.

When I teach power-off stalls, I first explain why we do them and where they would most likely occur. **If a power-off stall occurs, it most likely will happen in the traffic pattern when making the turn from downwind to base or when turning from base to final, especially if overuse of the bottom rudder is causing a skid.**

Then, at a safe altitude of 3,000 feet MSL, for example, I'll have them note this altitude as well as an altitude of 2,500 feet. This becomes our simulated ground level. The student then performs the power-off stall with a break with no comment or assistance from me.

After recovering and returning to normal straight-and-level cruise flight, a glance at the altimeter will tell us how much altitude we may have lost during the stall. If it reads 2,400 feet, my comment is that we just became a statistic, and that is why we perform power-off stalls.

A relatively new maneuver was added to the ACS requiring the student to configure the aircraft for an approach-to-landing descent. Then, at a given altitude, perform a power-off stall straight ahead. Why is this maneuver done? Two reasons. What if the pilot attempts to extend the simulated descending flight path by raising the nose and not adding power? Secondly, if a go-around is called for, will the pilot raise the nose and be late in adding full power?

According to the ACS, a satisfactory demonstration of the power-off stall involves a proper stall entry followed by a break and then executing a positive safe recovery with a minimal loss of altitude.

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Sadly, the last phrase of this sentence is frequently missed or overlooked when power-off stalls are being taught.

The ACS does not discuss or require a student to be taught cross-control and secondary stalls. I personally think they should be part of the training program, but that argument will be saved for another day.

At a safe altitude, I ask the student to pick a road perpendicular to and just forward of our flight path. The road becomes your desired simulated runway. Slow the airplane to the approach-to-land configuration. Start the turn toward the runway in a shallow bank and simulate that we are just 500 feet of altitude above the ground. Now it appears the student is going to overshoot the runway. While continuing to hold the shallow bank, I have them use the rudder to align the aircraft with the runway and apply back-pressure as if trying to extend the flight path.

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The airplane shudders and stalls in the direction of the low wing. As this occurs, the student does whatever is necessary to recover from the stall. Once level flight is established, note the altitude loss. In this example, the altitude loss is often 500 feet or more and becomes a serious but positive learning experience.

Another good example is performing slow flight. The student has been taught to perform slow flight according to ACS standards of 7-10 mph faster than the published stall speed of the aircraft. The procedure has been memorized and performed repeatedly. A DPE may then ask the student if the aircraft will fly any slower followed by the student's look of question, fear, and desperation.

Until several years ago, the FAA required slow flight be taught by configuring the aircraft with flaps extended and power as needed to maintain level flight and altitude. The stall warning horn may be beeping, especially if the air is turbulent, but the student should know it beeps when the airspeed is approximately 5 mph above a stall.

The aircraft is now on the feathered edge of flight. A bit of aft control stick movement will cause a stall. That is true slow flight. In my opinion, students should be taught to perform this maneuver. It helps develop a true feeling for the aircraft when operating at slow airspeeds. The aileron and rudder controls are sluggish and may require more than the usual amount of input to get the desired response. By teaching this, I think the student will have a good understanding of the control inputs needed when establishing the landing configuration.

Simulated emergency landing procedures are often memorized in the classroom but are neither properly understood nor taught. It's easy to memorize a checklist, but when the information must be applied in a real situation, the memorization does not transfer to common sense inputs.

All is forgotten when I pull the power. Momentary panic sets in, and then the student attempts to find a field. Checklist items are forgotten. There is no consideration for wind direction, the type of crop growing in the selected field, radio calls, engine restart, etc. What if the problem is simply fixed by switching fuel tanks? One empty tank and one full tank is embarrassing to explain to the FAA investigator trying to determine why you landed off-field.

I believe simulated emergency landings should receive much more attention during primary training. Execution should be immediate without taking several minutes to digest the situation.

Emergency landing procedures are given little time when conducting training flights. In fact, many times it is the last thing covered as an afterthought. The DPEs I've met with will confirm my finding. Memorizing the checklist is great, but the proper action to take needs to be taught, understood, and safely executed by the student.

I had a good flight instructor when first learning to fly. He taught me a common-sense lesson that I've never forgotten. When in flight on a VFR day, whether for pleasure or cross-country, pick fields along your route of flight that could serve as possible emergency landing sites. I try to share this with students when conducting cross-country training. Every couple of minutes I'll ask them to point out a field suitable for an emergency landing if the engine quits at this very moment. Hopefully this practice will remain ingrained in them for the rest of their general aviation/pleasure flying career.

Being book smart is a great asset in many situations. But when it comes to safe flight, a pilot must be able to interpret that information and execute it through hand, foot, and eye movements.

I hope everyone is flying safe and enjoying a great summer. 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.