



**STEVE KROG**

COMMENTARY / THE CLASSIC INSTRUCTOR

# Thinking Ahead, Staying Ahead

You're in charge, not the airplane

BY STEVE KROG

**ONE RECENT EVENING WHILE** catching up on some reading, I stumbled upon the following statement. It read: "Never let an airplane take you somewhere your brain didn't get to five minutes earlier." I don't know whom to credit, but it certainly applies to safe flying.

When working with flight students, one of the more difficult thought processes to convey is that of thinking and staying ahead of the aircraft being flown.

Early in flight training, students can focus only on the immediate task at hand during the takeoff, such as keeping the airplane on the runway centerline. Trying to incorporate additional inputs like positioning aileron and elevator, determining "go or no-go" points, or thinking "what if the engine quits" is overwhelming at this stage. However, as students progress, these items, as well as several others, need to be taught, demonstrated, and then ingrained in students' minds if they are to become competent and safe pilots.

Many of us were exposed to and taught these challenges during our primary training. But how many of us remember to think about and plan for these situations each time we're taxiing to the runway in preparation for a short pleasure flight at the end of the day? We all believe our trusty airplane is never going to let us down, so why bother? After all, it's only a quick 45-minute flight before having to be somewhere else. Complacency sets in, and soon we never even give the possible takeoff challenges a thought.

I don't make students predetermine a go or no-go point during the first five to eight hours of flight training, but once we begin working in the pattern, these issues are introduced. Think ahead of the airplane. On takeoffs, for instance, if you're not off the runway by the time you've reached your decision point, cut the power and roll to a controlled stop. When might this apply? Perhaps the engine isn't turning up as it should and needs to be diagnosed. Maybe the runway is soft, preventing the aircraft from reaching a safe speed to lift off. Or, maybe another aircraft inadvertently taxied onto the runway. Density altitude and surface winds also become factors. Once you have positioned your aircraft on the runway centerline in preparation for a takeoff, your mind should already be visualizing the entire procedure — thinking and staying ahead of the airplane!



Once I've had students complete the takeoff and begin the climb-out, I challenge them to think about where they would go and what would they do if the engine quit at that instant. We only need to look at the incident/accident statistics to know this is a critical point in the flight, and few pilots are ever prepared for it.

#### FIVE TO EIGHT CRITICAL SECONDS

I've mentioned in previous articles that it takes a pilot anywhere from five to eight seconds to react and begin taking corrective action when the engine quits during the climb-out. Few pilots ever really consider or even think about an off-field landing site after takeoff. I try to get students to first stabilize the climb attitude and then begin looking for traffic and also picking fields or open areas where an airplane could be put down without someone getting hurt.

Here's my rule of thumb for a forced landing on takeoff: If you're below 500 feet AGL, lower the nose and land straight ahead or no more than 45 degrees left or right of straight ahead. If you're above 500 feet AGL, the options expand to a span of 90 degrees on either side of straight ahead. Although things are rapidly occurring in these situations, don't forget to do a quick check of the fuel valve position, mixture control (if you have one), and magneto switch. You may be able to prevent a forced landing because the mixture control had been pulled inadvertently.

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Before taxiing onto the runway, take a moment to clear your mind and visualize the takeoff and climb-out. Then proceed with executing your plan. I cannot emphasize this exercise enough. This action could easily save a pilot and passengers from a serious incident. Think and stay ahead of the airplane!

While in cruise flight, whether cross-country or just local pleasure flying, do you subconsciously look for open fields where a safe off-field landing could be made? Sure, during your primary flight training the instructor may have regularly pulled the power and said, "Your engine just quit. What are you going to do?" Dutifully you lowered the nose, looked for a field in which to land, planned your approach, and completed your emergency landing checklist.

Today, maybe 15-20 years after your primary training, do you ever practice a simulated emergency landing? Do you even think about one occurring? If not, the airplane is flying you; you are *not* flying the airplane.

Beyond practicing simulated forced landings while practicing maneuvers, I try to train students to look for off-field landing sites while conducting the dual cross-country training flight. I like to play the "what if" game. What if the engine quit at this instant? Where would you go? Several minutes later, we do it again. With enough reminders, most students begin to think ahead and have a field picked out every few miles, making this practice a new habit while learning to think and stay ahead of the aircraft.



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When approaching a nontowered airport where a landing is intended, what procedures do you follow? Do you bother to announce your position and intentions on the common traffic advisory frequency? Years ago, every pilot automatically did this because most airports had a fixed base operator (FBO). A pilot would automatically call in with position and intention, expecting a reply offering surface winds, runway in use, and other known area traffic. This helped pilots plan for the approach and landing.

Today, a lot of the airports where pleasure flying is done have no operating FBOs. Many pilots no longer make the recommended initial call as they expect no response. This situation leads to an increased workload for pilots and can easily create a situation for getting behind the airplane.

When working with students, I try to instill the process of planning ahead again by challenging them. For example, if we are 5-10 miles from the home airport at an altitude several thousand feet above pattern altitude, I'll ask them to take me to the airport and enter the traffic pattern on a left downwind and at traffic pattern altitude. Then, I'll have them explain to me how they intend to do this.

This is when the opportunity to teach students to think ahead of the airplane really comes into play. How are we going to stay ahead of the airplane? First, we continue flying the airplane while determining our location in relation to the airport. Once we know our position, turns are made to head toward the airport. Then it's time to tell other traffic about our intentions and our position. Aviate, navigate, and communicate!

Now on course, what are we to do about the excess altitude? The common reaction student pilots make is to cut the power and make an idle power descent. After all, that is what has been taught up to this point, right? Why not reduce power by several hundred rpm and make a smooth gradual descent to traffic pattern altitude?

During the gradual descent, while approaching the airport, I try to instill the idea of staying ahead of the aircraft and reducing pilot workload by completing most, if not all, of the prelanding checklist. Isn't this a good time to select the proper fuel tank, turn the electric fuel pump on (if so equipped), and move the mixture control to full rich? Now you have at least three fewer things to do once established in the traffic pattern. It's all part of thinking ahead of the airplane.

During the gradual descent, good pilots will begin considering the wind and visualizing how it will affect the aircraft's flight path. If there is a tailwind on the downwind leg of the pattern, what



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adjustments or considerations need to be made? How about the anticipated crosswind on base leg? Or, what if there is a runway crosswind? Now is the time to be thinking and planning.

Then, after entering the traffic pattern on the downwind leg and anticipating and correcting for the wind, you should already be visualizing the final approach and landing. While doing so, power and flap adjustments are made along with any final items on the prelanding checklist. By thinking ahead, you have already mentally determined what inputs are required to complete a safe, proficient

flight path in the pattern and approach to landing.

After turning onto the final approach, your mind should already be visualizing the level-off, flare, touchdown, and rollout and not back on your turn to final when you overshot the runway and forgot to add power.

The process of thinking ahead of your airplane is easy to do if you practice and it becomes a habit. It's also easy under ideal conditions. However, if you throw in some turbulence, an ill passenger, deteriorating weather, wind, or other traffic, what was easy the day before now requires concentration and thought. Practicing staying ahead of the airplane will greatly reduce your stress level under these conditions.

Let's all strive to be better, safe pilots. Think and stay ahead of the aircraft. *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.