STEVE KROG
COMMENTARY / THE CLASSIC INSTRUCTOR

Stuck Wide Open

What would you do?

BY STEVE KROG

AS A LONGTIME FLIGHT INSTRUCTOR, I try to cover all required subject areas listed in the FAA Airman Certification Standards and share many more subjects that I have learned through personal experience. In more than 50 years of flying, I have dealt with seven partial or total engine failures. This is something practiced with frequency when preparing students for their respective checkrides. That being said, I observed a situation recently that I had not previously encountered.

On a beautiful, sunny Sunday afternoon several months ago, one of the pilots based at Hartford Municipal Airport (KHXF) took possession of an aircraft he had purchased. It was an experimental amateur-built biplane powered by a Lycoming O-360 engine. The previous owner had test flown the aircraft less than two hours after completing the build but decided to sell it as his hangar had no room for another airplane. The owner delivered the aircraft and a bit later returned home via a chase pilot and aircraft.

As is the practice at most airports, any time a local pilot acquires a new/different aircraft, the event causes quite a stir. Everyone wants to see what it looks like and offer opinions, often based on a lack of knowledge of said new aircraft.

Once the novelty wore off and visitors returned to their respective hangars, it was time for the owner to take his new purchase for a flight. The engine fired up instantly, engine gauges moved into the green, and everything looked like a go. The owner had never before flown this particular model of tailwheel aircraft but had accrued many hours of tailwheel flight time in several different airplanes.

PHOTOGRAPHY BY **CONNOR MADISON**

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Taxiing to the runway, the brakes were tap-tested several times and were functioning properly. Then a complete pretakeoff check was done, including mags and carburetor heat. All seemed to be in proper order. Several slow and fast taxi trips were made up and down our 2,000-foot-long turf runway with no complications. It was time to fly this great little biplane.

Once aligned with the center of Runway 18, power was added. The aircraft tracked straight and quickly broke ground headed for the blue sky. After reaching about 1,500 feet AGL, a level attitude was established, power and trim were adjusted, and the pilot began making lazy oval laps above the airport to get the feel of the airplane. For the next 20 minutes, control input pressures were tested, engine instruments monitored, and the flight progressed uneventfully.

Finally, it was time to bring the airplane back to the ground. Several intended low-approach go-arounds were executed, to get the feel for and establish the proper nose attitude for the final approach. The first and second low approaches looked good. The pilot seemed to have everything dialed in for a smooth landing, other than slightly over-controlling the elevator input. All seemed to be normal when applying a full-power climb after the second go-around.

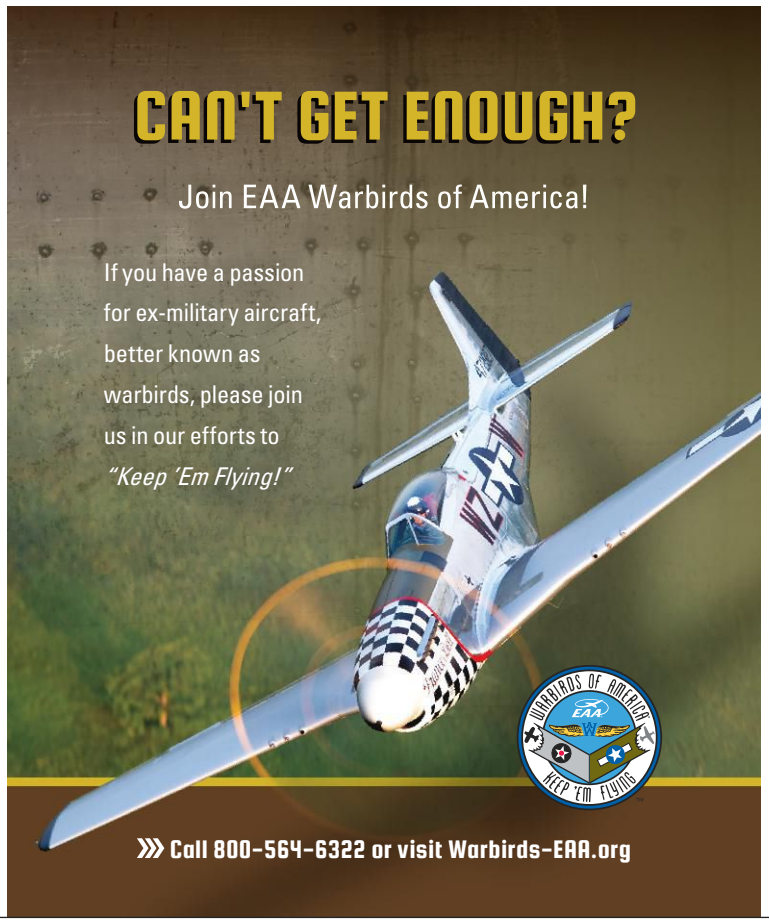
Reaching 800 feet AGL the pilot moved the throttle to reduce power, but nothing happened. The engine continued turning at full power! Moving the throttle from full power to idle several times accomplished nothing. Now what?

WHAT WOULD YOU DO?

This situation is a rare occurrence, but one that can — and does — happen. As a pilot, pleasure or professional, what would you do if you found yourself in this situation? Seldom, if ever, is a situation of this nature discussed during primary flight training.

I asked several local pilots to join me to discuss this situation. The conclusions drawn made sense but varied depending upon the aircraft being flown.

If flying an aircraft without a mixture control, such as a J-3 Cub or an Aeronca Champ, the only real option to control power output is using the magneto switch. Turning the magnetos off stops the engine from developing power, but the propeller will continue windmilling unless an effort is made to pull the nose up and intentionally stop the prop.



In this example, we will assume the prop continued windmilling. Controlling the engine power output by turning the mags on and off will generally accomplish what is needed to get the aircraft back on the ground safely.

But there is a downside to this method. If your aircraft has a muffler, like the Cub, turning the magnetos on and off will most likely blow it out and destroy it. The propeller keeps turning and drawing the fuel/air mixture into the engine. This unburnt combustible mixture collects in the muffler, and when the magnetos are reengaged, a loud bang or backfire will occur, and that will be the end of the muffler. Sacrificing the muffler would be a small price to pay if it means saving the airplane — not to mention your passenger(s) and yourself — though.

If you have an aircraft equipped with mixture control, your options are doubled. Rather than controlling power output with the magnetos and experiencing backfires, the mixture control can be used. Pulling the mixture control to the idle or cutoff position will prevent the engine from producing power and limits the fuel/air mixture entering the cylinders. Then, advancing the mixture control will cause the engine to develop power once again.

Either method provides a solution to a potentially serious situation. How does a pilot practice for such a dilemma? I teach the power-off 180-degree approach, a maneuver that is required for the commercial certificate. This maneuver not only teaches a pilot to know and understand the flight characteristics of the aircraft being flown, but it also hones a pilot's skill in understanding existing wind and how to handle the airplane to conduct a safe approach and reach the runway without doing any damage. Knowing your aircraft and how it handles with a windmilling propeller may someday make the difference between making it to an airport versus an off-airport landing!

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My friend that I described earlier handled the problem in the following manner. Once realizing he had no throttle control, he climbed to a safe altitude over the airport and began testing the engine response by pulling the mixture control until the engine quit, then advancing it again until the engine caught. Once he had determined the mixture control settings, he began planning for an approach to land.

A number of us had gathered on the ramp to watch him fly his new airplane and immediately recognized he was having some sort of engine problem. We could hear it quit, then catch again. Unfortunately, he had no radio in the airplane so we could not communicate with him.

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Prior to the throttle problem occurring, he had been practicing the low approaches and go-arounds on our 2,000-foot turf Runway 18 as the surface wind was southerly at approximately 10 knots. After recognizing the problem and while testing the mixture control, he decided the longer 3,400-foot runway would be a better, safer option even though he would have to deal with a light crosswind.

Losing altitude by cutting the mixture, the pilot navigated the aircraft into position for an approximate 1-mile final. Then, increasing and decreasing the mixture, a long, relatively smooth descending approach was made at a reasonably constant airspeed. Once over the runway numbers, the mixture was pulled, and the aircraft began floating down the runway. At the 1,000-foot length, a three-point was attempted, but the plane continued to float in ground effect. Finally, at the 2,500-foot length, all three wheels touched down, but a few bounces occurred. Keeping the aircraft aligned with the centerline, the pilot held the stick in the full aft position and the wheels remained on the runway. Gentle braking was continually applied, preventing the tail from coming up off the runway. Finally, the aircraft came to a safe stop having used at least 3,390 feet of the 3,400-foot runway.

The pilot remained in the aircraft for a minute or more while we scrambled to the end of the runway. He climbed out and explained what had been happening. It wasn't a faulty engine; it was a throttle rod between the front and rear cockpit that had become disconnected.

Several days later, I asked him about the situation and what might have been going through his mind at the time.

"After realizing I had a problem, I thought the best thing I could do was get some altitude and think through the problem," he said. "I didn't have time to get anxious. I wanted to get my new airplane on the ground without wrecking it!"

Thankfully, the experienced pilot remained calm, analyzed the situation, and then developed and executed a plan to get back on the ground safely.

Would you have remained as calm as he did? What would you have done? I'd like to hear your thoughts. 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.