STEVE KROG
COMMENTARY / THE CLASSIC INSTRUCTOR

What Goes Up Must Come Down

But why so hard?

BY STEVE KROG

LANDING! Every flight concludes with one. Some are true works of art while others become a true test of an aircraft's durability. Some bruise egos, especially at fly-in events, but others sometimes break the airplane. Landings should be so simple, yet every year nearly 40 percent of reported general aviation accidents and incidents involve landings. Thankfully, very few are fatal. But most end up with bent airplanes, badly wounded egos, and subsequent remedial training.

Previous articles have touched on various aspects of landings. I don't want to be redundant, but I believe we all need to spend more time and effort perfecting our individual landing techniques and striving to be better, safer pilots. When you go for a pleasure flight, do you practice doing three or four landings before calling it a day? Or, like many, do you fly for an hour, make one landing, clean and polish your airplane, and go home?

General aviation landing accident causes fall into one of two categories: pilot error or mechanical problems. Whether flying a tailwheel or tricycle fixed-gear airplane, the landing accidents/incidents continue to occur. They may involve dragging a wingtip, running off the runway end, veering off the runway, landing short, landing hard, or ground looping. Yes, even Cessna 172s can ground loop!

Many things can influence a landing, such as airspeed, surface wind, air temperature, runway surface and length, other traffic, and onboard passengers. I'll focus on just one of these influences.

PHOTOGRAPHY BY **JIM KOEPNICK**

AIRSPEED MANAGEMENT

As a flight instructor, a big mistake I've often observed is managing airspeed. When airspeed fluctuates by 10-15 mph from the midpoint downwind position until crossing the runway threshold, the landing is almost guaranteed to result in some sort of an event. I don't know if this is a result of poor primary training, having a lackadaisical attitude, or visual fixation on the airspeed indicator causing one to "chase" the airspeed throughout the approach and landing. Whatever the cause, it should be recognized and remedied if continued individual safe flight is to be expected for years into the future.

Let's assume you're going to fly a Cessna 150 today. The weather is "severe clear," and the wind is light and variable. It's a great day to take a nonpilot friend for a flight. You've flown this airplane a couple of times in the past 180 days, enough to meet the minimum FAA requirements.

Your friend has never been in a small single-engine aircraft before and seems a bit apprehensive, but you put on your best John Wayne *Flying Leathernecks* swagger and tell him not to worry, you've got everything well in hand.

The takeoff and approximately one-hour scenic flight are uneventful, and you decide to stop at a nearby airport for a quick lunch. The airport has a 3,000-foot hard surface runway, and you're used to landing on 5,000 feet or more. This shouldn't be a problem, you think, and proceed to enter the traffic pattern.

as quickly as possible and put your friend's mind at ease. Power is reduced, and the turn to base is made. More pronounced thermal activity! The turn onto final is initiated, but shallow bank is used to keep your passenger comfortable, causing you to overshoot the runway. Rather than go around, you initiate a good hard skid to realign the aircraft. The stall horn beeps and quits, so power is added to keep it silenced.

It now appears you're a bit high so the nose is pushed over aiming at the runway end numbers. Speed is building but goes unrecognized for a few more seconds as you try to calm your passenger. Finally, power is reduced as the runway threshold rapidly approaches. Leveling off as you pass over the runway numbers, the runway lights whiz by. That 3,000-foot runway begins to look and feel like an aircraft carrier. Where are the arresting cables? What do you do next?

THE OPTIONS

The first option that comes to mind is to push the yoke forward forcing the aircraft onto the runway. The nose gear contacts the runway surface, but there is a lot of daylight under the main gear. I'm sure the pilot has pushed the brake pedals to the floor, but braking action is nonexistent when the wheels are still off the ground!

A somewhat common pilot reaction at this point is to pull back on the yoke slamming the main gear on the ground and pulling the nose gear off the ground. The aircraft is now in a lift attitude.

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Your friend is looking a bit uncomfortable and begins asking what all the bumps you're experiencing are. "Thermals," you tell him. "Air pockets?" he asks. "No such thing," you offer, but that doesn't make him feel any more comfortable.

In your mind, you decide that no flaps will be used for the approach and landing. You just want to get the plane on the ground

The pilot feels the lift and again pushes the nose back onto the ground. The porpoise has started and only progresses.

The potential outcome for this landing is a bent or broken nose gear, bent prop requiring a full engine teardown, and possibly veering off the side of the runway into parts unknown and causing even more damage. Not a good option.

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The second option that comes to mind is to continue holding the aircraft off the runway while trying to dissipate all the excess energy resulting from crossing the threshold at 85 mph rather than 70 mph. We know this airplane doesn't land at 70 mph but rather closer to 60 mph, so the situation is now one of using up a tremendous amount of runway while bleeding off the extra speed. The surface winds were light and variable, so they are of no help.

Taking into consideration the aircraft is slowing, a quick calculation indicates it will take 12-18 seconds before the flare can even be safely initiated. The aircraft's average rate of travel will be an estimated 104 feet per second, translating to using up 1,248-1,872 feet of available runway before even thinking of flaring. Another 300-400 feet of runway passes beneath the airplane while in the flare. That means more than half to two-thirds of the 3,000-foot runway has been wasted before the tires ever contact the surface. The result is rolling beyond the runway end, locking up the brakes, or both. I've observed this situation several times. We helped the owner replace both main gear tires and tubes before we could move the airplane from the tall grass beyond the runway end.

The third option — and definitely the best of the three — is to execute a go-around. Several things can be accomplished by doing so. First, the pilot has more time to take a deep breath, analyze the situation, and safely fly the airplane. Second, proper power adjustments can be made together with establishing correct nose attitude, leading to the desired and proper airspeed for the approach. Third, a clear head coupled with power, attitude, and altitude management leads to a better, safer traffic pattern being flown. There will be no need to skid in the turn or increase the airspeed.

CONCLUSION

The scenario as portrayed happens with regularity, even though we all profess to be safe pilots. In this situation, the pilot was current but probably not as proficient as they could have been to make this flight. A good review of the takeoff and landing speeds found in the pilot's operating handbook (POH) should have been done.

AUTHOR'S NOTE:

If you're not aware of EAA's relatively new programs, the IMC Club and the VMC Club, I highly recommend looking into them. The EAA IMC Club program focuses on situations that may occur while flying IFR while the EAA VMC Club program focuses on situations like the one I've discussed in this article. The meetings are very informal with a lot of good informative discussion. They meet about once a month for about an hour and are well worth the time. You can find more information about these programs at www.EAA.org/imc and www.EAA.org/vmc.

— Steve

The stop was unscheduled, so the pilot was probably not as familiar with the landing airport as they could have been. Consequently, this unfamiliarity together with a nervous first-time passenger created a situation that could have led to misfortune. Finally, an overflight of the intended landing airport would have provided the pilot with a better visual of the runway layout and might even have led to picking a go-around reference point no more than one-third the distance down the runway.

The bottom line is we all strive to be proficient, safe pilots who love to share our passion for flight. It is then our personal responsibility to establish and maintain a level of proficiency that provides every one of our passengers with a positive and memorable experience they'll want to share with others.

Be safe and stay proficient. 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.