**STEVE KROG**
**COMMENTARY /** THE CLASSIC INSTRUCTOR


# Where Does a Good Landing Begin?

Hint — it's earlier than you think

BY STEVE KROG

**WHERE DOES A GOOD** landing begin? I've asked that question of a dozen or so local pilots, young and old. The answers varied with most stating it begins on the downwind leg of the traffic pattern. One 20-something pilot currently working on her instrument rating disagreed. She confidently stated that a good landing begins before you ever take off. And that is the correct answer.

Reviewing the recent FAA U.S. incident and accident statistics, the point where most of these situations occur is on landing. There are a lot of reasons for this — wind, crosswind, narrow runway, competency, proficiency, complacency, and the list goes on. But these are just excuses to explain the outcome. Better planning might have prevented many of these situations.

Airline and charter pilots alike always know their destination before departing. Additionally, they know the destination runway's direction and length, forecast weather conditions upon arrival, and most any other factor that could influence their anticipated landing such as runway closures and instrument approaches not functioning via NOTAMs.

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**WHEN DO YOU PREPARE FOR A LANDING?**

As a GA/recreational pilot, do you prepare for the landing portion of your flight before departing? Some do, but most don't. Those who do are usually fairly low-time fair-weather pilots with an appreciation of crosswinds. Be totally honest with yourself. In the past year, how many times did you cancel a pleasure flight because the crosswind or the potential for crosswind made you uncomfortable?

Those who don't think about the intended landing before taking off lean toward overconfidence and complacency, assuming they can handle most anything when they get there. "Why worry? The airport will be there when I get there." An offshoot of this category of pilots are those assuming the GPS and ForeFlight will tell them all they need to know when nearing their destination.

In many situations, this is true. However, what if the Comanche landing two or three airplanes ahead of you suffered a gear collapse and is blocking the main runway. Are you familiar with other runways at the destination airport? Are they long enough to safely land on and then depart from several hours later? In this situation, would you find yourself punching buttons trying to call up airport information while circling the airport with 8-10 of your fellow recreational pilots all doing the same thing? And while doing so, you're all focusing on that little LED screen and not visually scanning for aircraft separation.

**STEP ONE**

Safe, competent pilots — be they recreational, corporate, or airline — will take several minutes to research the destination airport prior to departure. What runways are available and what are their lengths? What are the weather conditions along the route of flight? What are the present and forecast weather and surface wind conditions at the destination? What is the outside temperature and



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expected density altitude at the destination? Depending on the time of year, the landing would be safe but the departure might be questionable. Is there service available at the destination, at least fuel service? Are there any NOTAMs pertaining to the destination airport?

It takes 5-10 minutes of time prior to departure to ensure the landing can be made safely.

What if you're planning a local pleasure flight? Do you take the time to consider the local conditions and how they might affect your flight? Again, I find many just look at the windsock and take off, never considering what changes might develop during the hourlong local flight.

For example, here at Hartford Municipal Airport (KHXF), we are located nearly equidistant from two airports that have automated weather reporting equipment. However, this does us little good. The airport to the east is influenced by Lake Michigan, and the airport to the west has a ridge with dozens of windmills. The easterly flow of air off the lake seems to collide with the westerly flow of air near the windmills. Consequently, our surface winds are never the same, or even close, to what is being reported by either of the other two airports. This weather phenomenon usually occurs around 1600. An unsuspecting or unobservant pilot who departed on Runway 27 and remained in the pattern may find a 10-15 knot tailwind when trying to land back on 27. That is how quickly it can change.

**STEP TWO**

Knowing that your destination airport is KHXF and you've made yourself familiar with the airport, what's next when you're preparing to land?

Let's assume that you are coming from a westerly heading cruising at 5,500 feet. The field elevation is 1,070 feet. What steps do you take for a safe approach and landing?

For discussion purposes, we'll say that you are flying a non-complex aircraft.

**STEP THREE**

First, make a radio announcement giving your position, altitude, and intentions. Other aircraft flying in the



area will now know approximately where you are and can be watching for you and you for them.

**STEP FOUR**

The traffic pattern altitude is 1,000 feet AGL, so you need to lose about 3,500 feet (5,500- 2,070), but when do you do so? If cruising at 90 mph, reduce power by approximately 500 rpm, which will provide a 500 fpm descent at 90 mph. The descent will take seven minutes, so make the announcement and begin the descent approximately 10 miles out. This should put you at traffic pattern altitude as you approach the airport traffic area.

*An alternate rule of thumb can be used if desired. In aviation, the 3-to-1 rule of descent states that 3 nm of travel should be allowed for every 1,000 feet of descent.*

**STEP FIVE**

Before entering the traffic pattern, I have my students run through the pre-landing checklist. This allows time to comfortably complete the checklist without the potential distractions occurring in the traffic pattern.

**STEP SIX**

Assuming that local traffic is using Runway 27, fly a 45-degree entry to the downwind leg for 27. Now consider what the horizontal separation between the runway centerline and the downwind leg flight path should be. Some pilots are taught to fly a tight pattern, while others are taught to fly a wide pattern. Flying a single-engine land aircraft the majority of time, I teach a pattern that is close enough to the runway that should the engine quit, the aircraft can easily and safely reach the runway. This may vary somewhat based on the speed and efficiency of the aircraft being flown. I fail to see sound reasoning behind flying a traffic pattern that has a mile or more horizontal separation on the downwind leg. When entering the downwind leg, I'm already visualizing the base and final legs of the pattern.

Energy management is primary upon entering the traffic pattern. What power setting do you need to maintain a desired descent rate and approach speed? Establish the proper nose attitude, trim as needed, and continue with the pattern at the proper airspeed. It is far easier to slow the airplane on downwind or even on base than it is on short final.

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**STEP SEVEN**

Why do some flight schools teach a traffic pattern where the base leg turn isn't made until well beyond a mile or more from the runway approach end? Unless there is other traffic in the pattern, I see no reason to do so. How often do you observe aircraft on a 1- or 2-mile final with flaps partially extended and power at 75 percent, grinding away toward the runway? If the engine would hiccup for even a second or two, reaching the runway safely is definitely in question.

I practice and teach turning to base when at an approximate 45-degree angle off the approach end of the runway. Upon completion of the descending turn, I make a judgement call. If the winds are light at the midpoint of the base leg, I want to have 500 feet of altitude. This provides a relatively safe margin to work with while continuing my approach. Now I'm visualizing the turn to final, approach, and landing.

**STEP EIGHT**

As you perpendicularly approach the runway, don't wait until crossing the extended centerline to make the turn onto final. This is the point where potential trouble begins. If the centerline is overshot, uncoordinated rudder and aileron inputs are often made, which creates a cross-controlled situation that can lead to a stall and subsequent spin.

As an instructor, I have my student begin the turn onto final early using a shallow bank. This gives you the option of slightly increasing or decreasing the bank angle as needed to align with the runway centerline, eliminating steep turns or the possibility of establishing a cross-control configuration.

**STEP NINE**

Once on final, stabilize the approach via nose attitude, maintaining the desired approach speed for your aircraft. Pick an aim point on the runway, such as the painted numbers. Using the stabilized approach, descend at the appropriate airspeed and rate of descent. Flare at the numbers and you'll touch down approximately two runway stripes beyond the numbers.

**STEP 10**

Continue flying the airplane until clear of the runway. At that point you may pause for a minute to clean up the airplane, turning off carb heat, retracting flaps, etc. Then remain focused until the prop stops on the ramp or in front of your hangar. EAA

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