



SHORT FIELD APPROACHES AND LANDINGS SHORT FIELD APPROACHES AND LANDING

On your checkride you want to land short and land well

BY DAVE WILKERSON

When students gather to discuss a designated pilot examiner's testing habits, short-field landings often monopolize the discussion—and for good reason. Private pilot applicants have not yet developed the experience to draw on when an examiner points to the runway and says, "Assume this runway is 900 feet long. Show me how you will land."

You, like others, can draw only on your training. Today, student pilots often fly from paved runways that are many thousands of feet long. Examiners, especially if they are older and have been flying for some time, remember tire-worn grass runways that measure only hundreds of tree-edged feet. These airstrips still exist, so every pilot needs good short-field landing techniques. On your checkride you want to land short, and land well.

Students tend to fly their approaches with excess speed. Examiners attribute this to tricycle landing gear (which do not demand as much control and concentration as a tailwheel configuration), flaps (often misused as air brakes to lose airspeed), long runways, good brakes, and fear of an inadvertent stall/spin. The private pilot practical test standards (PTS) don't exactly encourage precise speed control on approach because it says it's acceptable to fly within a speed range from 10 knots over to 5 knots below the target airspeed.

The acceptable speed range is one of 12 objectives in PTS Area of Operation IV, Task F. Examiners judge short-field approach and landing performance on how well you meet these objectives.

The old PTS allowed an applicant to make a long, low approach slightly above stall speed and control the glide path with power. Crossing the threshold, you close the throttle and drop the aircraft, at stall speed, onto the touchdown point with little forward momentum. Examiners still see this technique occasionally, and their reaction is an FAA Notice of Disapproval.

The current PTS, in objectives 4 and 5, insists that you establish the recommended approach and landing configuration and the recommended approach airspeed. If the airplane flight manual (AFM) or pilot operating handbook (POH) doesn't recommend a speed, fly no faster than 1.3 VSO. In either case, you factor wind gusts into your approach speed and adjust pitch and power as required.

Flat, power-on approaches just above stall speed don't account for obstacle clearance, and if the engine fails, you have no options.

Examiners observe how an applicant uses his (or her) options. Your first option is deciding to fly the short-field approach. Objective 3 requires you to consider wind conditions, landing surface, and obstructions and to select the most suitable touchdown point. A wet or icy runway should make you pause. A well-planned and executed short-field approach, coupled with a touchdown approximately at stalling speed, maximizes your available stopping distance. Examiners appreciate pilots who know that a wet or icy runway increases stopping distance regardless of the effect of the use of full flaps.

When you extend the flaps tells the examiner about your understanding of the actions needed to perform a good short-field approach and landing. Some applicants mechanically apply one stage of flaps near the end of the downwind leg, add another after rolling out on base, and—even though the runway is out of the airplane's power-off reach—extend full flaps immediately after turning wings level on the final approach. This technique isn't likely to impress an examiner. It's advisable to sit down with your instructor before the checkride and explore the answers to two questions: Why use flaps on a short-field landing? How do you know when to add flaps during a short-field landing?

A short-field approach and landing calls for intense concentration and control—which is why some examiners like to test your mettle by introducing distractions such as talking to you. Because Federal Aviation Regulation 61.47 makes you the pilot in command during a checkride, you have every right

to ask a talkative examiner to hold the questions until after the landing. It would be wise to invoke this authority.

It's only natural for an applicant who makes a hard touchdown to try to minimize the effect. "I normally land softer than that!" they say. The truth is, trying for a soft touchdown on a short-field landing wastes precious runway. Examiners care more for safety than softness. When the runway resembles a postage stamp, proper short-field landing technique is all that matters.

PTS objective six is the transition between a short-field landing's airborne and groundborne portions. By smoothly alighting on the runway centerline at the approximate stalling speed and within 200 feet of a specified touchdown point, you show your examiner that you are indeed master of your aircraft.

The distinction between "smooth" and "soft" is important when evaluating short-field landings. The dictionary defines "smoothness" as an even, uninterrupted movement or flow. "Soft" is the attribute of being gentle or mild, producing agreeable sensations. You (and the examiner) want smooth, and if you get soft, consider it a bonus, not a necessity.

Most trainers have landing flaps that can be raised during the landing roll to shorten stopping distance. However, the PTS doesn't discuss any flap actions during rollout. The PTS does require the applicant to "Apply the brakes, as necessary, to stop in the shortest distance consistent with safety."

An airplane's POH/AFM may recommend flap retraction after landing to increase the brakes' effectiveness. This recommendation requires a ticklish division of the pilot's attention. Many examiners subdivide a short-field landing into three segments—closing the throttle, raising the flaps after touchdown, and applying the brakes. These actions happen so rapidly it's unlikely an examiner can observe them individually. Instead, the examiner judges your prompt, safe dissipation of kinetic energy.

If flap retraction is part of the recommended short-field after-touchdown procedure for the airplane you fly, the examiner may take the opportunity to test your knowledge with a question such as "Why do you raise the flaps after touchdown?"

The examiner is probing your understanding of the concept that full flaps produce lift along with drag. During a short-field rollout, you want the maximum amount of weight on the wheels to

increase the effectiveness of the brakes. Retracting the flaps decreases lift, which increases the weight on the wheels. Your answers to these and other questions, coupled with your handling of the airplane, demonstrate to the examiner that you understand and can perform short-field approaches and landings. Congratulations—another checkride task successfully completed.

Dave Wilkerson is a designated pilot examiner, writer/photographer, and historian. He has been a certificated flight instructor for more than 23 years and is a single- and multiengine commercial-rated pilot.

Article collected and share by:

David Key
Safety Officer
Mighty Mule Flying Club