



The art of landing

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Does your flight instructor like to draw diagrams to illustrate points about aerodynamics or maneuvers? Now you can turn the tables, while likely acquiring some insights that will turn your landings into masterpieces.

You need not be a talented artist to tackle this drill. But if you can pilot a pencil around a piece of notebook paper and sketch out the desired pitch attitude of your trainer during the phases of a final approach and landing—and say a few words about the angle of attack at each phase—your talent for flying will earn wide critical acclaim.

Before you start your work of art, spend some time watching airplanes land. Then sketch out a side view of some aircraft completing their final approaches. Document details: the pitch attitude, glide angle, the aircraft's height above the runway during roundout and flare. Show the approximate pitch attitude at touchdown. Give a general idea of the angle of attack at each phase. From the roundout through the flare it should be increasing, reaching maximum just at touchdown.

From your observations you will learn to recognize when the angle of attack of an approaching aircraft is a mismatch for its landing phase. If pitch is too low (airspeed excessive) the aircraft may float, skip, or even touch on the nosewheel. If pitch is excessive for the height above the runway, the aircraft is at risk of mashing toward the ground in a semi-stall or dropping in—audibly—from a few feet in the air (unless a go-around is commenced).

Both errors have the same fundamental cause: failure to achieve the appropriate attitude (and therefore, airspeed) for each phase of the landing.

For you and your flight instructor, the goal is to determine whether you have the right impression about this basic concept. Some trainees do, but it turns out that they simply lack the confidence to make the necessary control inputs. That's not

the same learning challenge as a misunderstanding of the concept, and requires a more abstract approach to licking the problem.

Creating the diagram is a good way to grade your grasp of the goal. It's also good practice for the day when you must exhibit your knowledge for the designated examiner on your flight test.