

The whys of poor landings:©

Of late there have been a number of students who have indicated that just prior to the checkride that they begin to have difficulty making landings. There are many extraneous factors beyond the basics of airspeed, configuration, and attitude that can cause sudden loss of landing skill. I will try to come up with a few and hope that others will fill out the picture from their experience by posting on rec.aviation.student.

Begin with the pilot who is supposed to be 80+% responsible for all problems. Stress is a factor that can be very insidious in its ability to affect performance both physical and mental. A certain amount of stress is good but the individual has no way of knowing when the stress cup runneth over. Fatigue, sleep deprivation, nutrition, and chemicals can have effects on both reaction and anticipation flight performance. As often as not it is an unasked question that is the source of a problem. An unasked question can be a matter of knowledge, emotion, or just personality. If your landings are not what they should be, begin your search for reasons by checking yourself out. Begin by asking questions of yourself and your instructor.

The set up your arrival to a runway makes considerable difference in the adjustments you must make. The standard 45 degree to downwind entry gives you the best opportunity to anticipate any adjustments that may be required. The straight-in requires a higher degree of approach slope perception than other landings that keep you closer to the runway. There are more adjustments to being high on the glide slope than when low. High means you can put in maximum flaps for conditions, reduce power, and even slow-up. Full power is the best universal correction for being low. Knowing how to get to there from here even in the pattern is a skill that comes easily to some but must be acquired in steps by most.

You must become familiar with reading wind directions and velocities. Begin by comparing your estimate with the ATIS or AWOS wind. After a few tries you will get pretty close. Now look to the windsock and note how it is performing. Relate the stiffness of the windsock to wind velocity but become familiar with the differences that exist since there are windsocks designed to become stiff at different velocities. Reading the wind effects on your aircraft is an essential skill. Low level drift effects in light winds are the hardest for students to detect and correct. Work on 'seeing' the wind.

The variables of weather can have dramatic effects on even the most experienced pilot. The first hot day of summer shows how quickly a flaring plane can run out of ground effect. The calm wind often makes ATC keep a noise abatement runway in use often with a light tailwind. On such occasions everyone lands long, at least on the first try. The strong wind right down the runway over 15 knots require that the pilot make many anticipating adjustments on the downwind, base and final. Failure to stay close and high will require full power to make interception of the glideslope possible. Don't be concerned about being high in such a wind. Use the wind; don't let the wind use you.

The crosswind requires that the pilot make an initial estimate as to how he plans to configure the aircraft. Use the minimum flaps for the wind and your experience. The less flaps the easier will be a go-around. As in all landings, the go-around should be the first option when things are not going well. Basic skills for the crosswind, in addition to

airspeed and configuration , are the Dutch roll and side slips. Always fly a crabbed heading into the wind to achieve a much wider downwind any time the crosswind is blowing you toward the runway. Failure to do so means that you will be exposing yourself to illusions conducive to the stall-spin accident. If you are unable to keep the nose parallel with the runway using the rudder on final, you have winds that have exceeded the crosswind rudder control required. You have the option of increasing the approach speed or power so as to improve rudder authority. The side slip is used to keep the aircraft aligned with the extended centerline of the runway. Basic skill is the Dutch roll.

Some difficulties related to the sudden onset of poor landings have to do with being exposed to unfamiliar runways or pattern direction. If you have learned to land by relating specific points and altitudes in the pattern direction at a particular runway, this knowledge will not transfer readily to another airport or runway. The size of runway presents an optical perception that can confuse the most experienced pilot. For years I used a beautifully numbered and painted model airplane runway to confound my students when doing simulated emergencies. Use your charts and guides to get runway dimensions before taking off. Required information by FAR, you know. The normal tendency is to fly much closer to small and unfamiliar runways. Try flying twice as far away as you think you should and you will be about right.

The unfamiliar airport and runway at night is exceptionally difficult since there are no visual references other than the runway lighting system. If at all possible visit an airport in the daytime before going there for night landings. The illusions of size, layout, slope, and taxiways are compounded at night. Don't try for the full stall landing at night. Accurate depth perception at night is most difficult.

The last area of student difficulty is the human ability to focus on one factor of concern to the elimination of all other factors. Tunnel vision they call it. Under stress a pilot concentrates on an area of concern such as, "Will the airport stay where it is?" As a result of this focus such unimportant things as power reduction, trim, altitude, heading, flaps, airspeed, and aircraft control get out of sequence and position. Flying is a skill that requires multitasking capability. The pilot coming in to land must have division of attention to all the factors above along with awareness of the big picture that comprises the runway, airport pattern, and other traffic. Doesn't sound easy, and isn't. Just necessary. You are not ready to solo until you can do all of the above, talk/listen on the radio and have enough emotional and intellectual energy left over to carry on a side conversation much as you would in an automobile.

It takes some pilots longer to reach solo than others. The reasons are usually hidden in weaknesses of the basic skills of aircraft control, situational awareness, misconceptions, or preconceptions. There are always solutions, they just sometimes take longer to find.