**Generic Landing©**

The landing climaxes at the point of touchdown but will not end there. Furthermore, the beginning of a particular landing occurred at some past landing where a lesson was learned when the pilot was high, low, fast, slow or out of control. The mistake of the past is avoided, corrected and blended into a successful landing. Not perfect, just satisfactory.

The satisfactory landing begins with aircraft control. Aircraft control is the pilot's ability to perform the four basics of climb, descent, level, and turns within a predetermined tolerance level. Aircraft control also includes the ability to use the four basics to position the aircraft in the landing pattern within another predetermined tolerance level of distance and altitude. The last element of aircraft control has to do with configuration. Wind and terrain are used by the pilot to select the optimum configuration for the situation. The so-called stabilized approach to landing begins far before turning final. The amount of tolerance allowed by an instructor is a variable based on how close you are to doing solo landings.

In the landing practice pattern the takeoff and climb to downwind can be just a precise as any other part of the pattern. The lift off occurs at Vso or slightly higher in crosswind conditions. Climb is delayed until Vy unless Vx is a requirement. Runway alignment is maintained with crab as appropriate with at least one visual check around 300 feet. Takeoff ranks #2 behind landings as a source of accidents. You can't achieve a successful landing without first making a successful takeoff.

The turn to crosswind is initiated after visually clearing the turn area and selection of a visual or heading reference. In the turn the eyes and head are not turned but are used to maintain attitude, bank and airspeed until the visual point comes into view. Very slight forward pressure is used both during entry and recovery from turns if a constant airspeed is to be maintained. At the thirty-degree point of bank, back pressure is used to maintain airspeed. All climbing turns are with coordinated controls at altitudes according to local practices at Vy. Entry and recovery from the turn bank is coordinated with anticipated rudder and aileron as required by the direction. Begin turn recoveries 15 degrees early. Left and right climbing turns are significantly different and should be practiced equally.

Just where the turn to downwind occurs is usually determined by wind and terrain conditions but occasionally traffic may require turns sooner or later. The width of the downwind must be adjusted wider for any wind that blows the aircraft toward the runway and closer to prevent a wind from blowing the plane too wide. This downwind adjustment is a critical flight positioning of the pattern which can only be made with repeated exposure to varying conditions. A short base is a prelude to tragedy.

Leveling the aircraft at pattern altitude and anticipating the amount of trim required must be done according to the downwind speed desired. There is no one best way to select this speed. My personal preference is to use level cruise speed for several reasons. Trainers are the slowest aircraft in the air. Using a slow trainer speed downwind places unfair hardship on non-training aircraft in the pattern. The cruise speed is a familiar trim, power, and sound condition. The reduction of power at the numbers while maintaining heading and altitude gives a relatively constant key position for the base turn. Most urban airports require (request) that pattern altitudes be maintained until turning

base. This technique allows each aircraft to select its pattern key position according to its performance.

There is a helpful logic behind ATC always requesting that you report a two-mile final or two-mile base. A 45-degree entry to downwind to a mile-long runway would allow a mid-field downwind turn 1/2 mile from the numbers. A 45-degree entry to downwind to a shorter runway should be made at the departure end to prevent the optical illusions that lead to close-in downwind patterns. With a half-mile to do the pre-landing before reaching abeam the numbers, another half-mile to slow down and reach the key position, still another half-mile base, and a half-mile final we have adapted the ATC two-mile base and straight-in to the basic downwind entry.

On downwind you should make a preliminary decision as to the flap configuration you will use. The POH standard is to land with full flaps if wind conditions allow. Just how you set the power, apply flaps, and trim for an airspeed is multi-task variable. Whatever you choose to do should have a consistency. Only in simulated emergency or short-short approaches should power be taken all the way off. Shock cooling the engine is a relatively dangerous practice. Whatever the power and flap setting the trim should be adjusted for the hands-off airspeed desired. Do not accept trimmed airspeeds off the desired speed. Most trainers use the same approach speed from the key position, to base, to final, to the round-out. Beyond the trainer, aircraft will use two or three different speeds from downwind, base, and final.

One variable that often occurs in downwind is an ATC call or situation that puts you as #3 to land or a need that you extend your downwind. In both cases you initiate the slow-flight procedure immediately even before using the radio. You want to avoid getting too far from the airport if possible. You hand-fly the slowflight by using the same trim as you would have but add about 500 rpm to hold altitude and 10 degrees of flap to improve over the nose visibility. Resumption of the approach requires only reduction of power.

My preference is to reduce power to whatever setting will give me 1500 rpm when I reach the key position. At the key position I will have maintained altitude and trimmed for my base approach speed, I put in one notch of flaps hold that airspeed with forward yoke and retrim while turning base. I have learned to put in flaps, apply forward pressure, and trim without looking any place except over the nose of the aircraft. I have begun my descent and am trimmed hands-off. Once my aircraft is under control I look to see the airport. A major fault of those who lose control is mixing up their priorities.

I make most of my approach adjustments on base. I may add a second notch of flaps, fly a wider base, or one closer in. Occasionally, ATC may ask you to make an adjustment by asking that you, “square your base” or “fly directly to the runway”. Regardless of what you do, do it at a constant airspeed. Only by having a constant airspeed can you develop the skills needed in determining a stabilized approach angle.

On final and on final approach airspeed I use the nose as a sight to make my high/low decisions. By aiming short of the runway a hundred feet you can become experienced in the use of ground effect. Being high offers the most corrective options; I can add flaps to maximum for wind conditions; I can reduce power in increments of 100 rpm or more; or, I can reduce my approach speed to cover less ground for altitude lost. Runway permitting I assume normal approach speed just prior to round-

out.  The universal solution for being low consists of adding full power while holding approach speed for an estimated time needed to intercept normal glide path.

Other opinions to the contrary, small additions of power can cause a pilot to enter into a condition known as ‘the constantly decelerating approach’.  As the power is added, the speed drops until there is not enough power to maintain altitude.  You are behind the power curve and with the ground close by you have run out of options.  The worst thing that could happen to a low-time pilot is to ‘get away’ with additions of power that lead to the decelerating approach.  Next time you may not get away with it.