# Why Can't We Land?

By Wayne Fischer, ATP, CFII

***Aviation Safety***, the monthly journal of risk management and accident prevention, recently had an excellent discussion on "Why Can't We Land". According to AOPA's Nall Report, the accident record is filled with just about every type of accident you might imagine. Pilots with enough experience to know better are consistently touching down more than half way down the runway, bouncing hard enough to be launched into orbit, and somehow thinking the entire airport grounds are the landing sites. Landing short, landing long, departing the runway, with or without wind, there seems to be no end to the arsenal of methods we use to damage or destroy our airplanes.

While the article is a commentary on all of general aviation, the 1995 AOPA Safety Review of the Mooney M20 series concurs that Mooney pilots fit right in to the analysis. With both M20s and the comparison group, pilots had their share of landing mishaps and hard touchdowns. But there is a significant departure from the comparison group with the M20s higher rate of long landings-more than twice as many as our compatriots in the other group when expressed as a percentage of all landing accidents. The Mooney group had only one short landing episode compared to 59 in the other group. Of the 24 Mooney long landing accidents, three causes stand out like a sore thumb-(1) landed long/fast, delayed abort, overshoot; (2) landed long/high/fast, improper flare, overshoot, and (3) landed long, downwind/crosswind, delayed go-around, overshoot.

The ***Aviation Safety*** article concludes that the primary underlying cause of poor landings appears to be "lousy speed control". The summary of the AOPA Safety Review of the M20 Series concludes that the most significant factor in Mooney landing accidents is "approach speed, approach speed, approach speed!" There is a common misperception among much of general aviation that the Mooney is difficult to land. ***NOT SO!*** (Emphasis mine). The difference, of course, is that the results of airspeed mismanagement are more dramatic and sensational. With this background in mind, let's talk about landing a Mooney.

First of all, let's look at the objective of our speed control. At what point is the optimum speed most important and what is the configuration at this point. Take a look at the landing distance charts in your POH, and in the upper left corner you will see approach speeds for varying weights. This is the optimum approach speed, in the landing configuration (gear down, flaps full down). This is NOT the speed at touchdown! Let's try to find the optimum speed as we cross the threshold, and we will discover that the Mooney lands like any other airplane-nose high and slow!

In order to demonstrate, I will use the numbers for my airplane, but the exercise can be applied to any of the Mooney product line. First of all, let's pick a realistic landing weight. When was the last time you landed at maximum gross weight? If you are like me, probably never. My airplane maximum gross weight is 2900 pounds, but my average landing weight is usually comprised of two persons and one-half tanks fuel, or about 2600 pounds. Interesting how my POH has a number for 2600 pounds! The recommended approach speed for this weight is 71 kts. Is it coincidence or by design that 1.3 x 56 kts (stall speed in the landing configuration) is 73 kts? I'm sure it's widely accepted that 1.3 x Vso is an appropriate approach speed, but the question then is; what is an appropriate speed across the threshold, and when do we begin the transition to this speed?

In my judgment and experience, 1.2 x Vso, or 68 kts, is the target speed across the threshold. Again, look at the upper left corner of your landing distance chart, and you will see in the associated conditions that the power is at idle for landing. If you cross the threshold at about 35-50 ft, in the landing configuration, at 1.2 x Vso, power at idle as you transition to the landing attitude, you will land on the main gear first, as you gently lower the nose to the runway. There, my dear friends, is the secret to landing the Mooney, or any other airplane.
If you cross the threshold any faster and attempt to flare to the landing attitude you will balloon and float. Impatience will get the best, and in our attempt to force the airplane on to the runway we will see the classic bounce, leading to a porpoise, leading to a prop strike. A key component is the smooth and deliberate *transition* to the landing attitude. Any abrupt elevator input as you enter ground effect will be translated to an increase in speed as you balloon, and here we go again. This is particularly true in the long body Mooney.

**Remember, we make good landings when we want to fly and the airplane wants to land, and we make bad landings when we want to land and the airplane wants to fly!**

Fly Safe!