

# SAFETY GRAM 4.0

March 2023



Aero Clubs,

Summer months are peak flying and training months. Let's revisit some basic tips to ensure the airplane and pilot *both* survive every one of our landings, without incident. We always joke that any landing you can walk away from is a good one, but someone who let crosswinds get the better of them, or had a hard landing that resulted in a prop strike might have a differing opinion. Pilots that consistently have good landings do three things: they fly stabilized approaches, they never stop flying the airplane, even after landing, and lastly, when necessary, they do a go-around when the landing isn't working out and do the first two things on their next landing attempt.

Let's examine the first key to a good landing: a stabilized approach to landing. An unstable approach makes it much more difficult, if not impossible, to land safely. Defining a stable approach is the key to recognizing an unstable one. From the FAA, "A stabilized approach is one in which the pilot establishes and maintains a constant angle glide path towards a predetermined point on the landing runway. It is based on the pilot's judgment of certain visual clues, and depends on the maintenance of a constant final descent airspeed and configuration." A stabilized approach provides a consistent position for landing, and this consistency/stability results in good landings. Simply put, a stabilized approach means you're fully configured, **on centerline, on glidepath, and on airspeed** when you transition to the flare and landing attitude. If those three things aren't stabilized, you shouldn't transition to landing...you should go around.

How do we recognize that? First, pick the point where you believe you should be stabilized and fully configured for landing – call it a decision point (or whatever works for you). At your decision point you should require only minor changes to heading, glidepath and airspeed. As a technique, I use 300' AGL as my decision point on a visual approach. If the approach isn't stabilized by that point or I'm not properly configured, I **will** execute a go-around. Why 300' AGL on a visual? Well, a 3 degree glide path puts me one mile from the end of the runway and about one minute from touchdown at 60 knots. It also prevents maneuvering too close the ground. 300' AGL is just my recommendation/technique.

At your decision point, evaluate the three main approach variables: airspeed, glidepath, and lateral deviation from runway centerline. Here are my general tolerances for each:

Airspeed: within  $\pm 5$  of planned approach speed

Glidepath: within  $\pm 50$  feet (1 dot of a PAPI,  $\frac{1}{2}$  dot on ILS glideslope)

Centerline: No more than wingspan off centerline

Important footnote to those tolerances: It's very important to note trends on each of those. If the snapshot looks good but the trend is rapidly decaying airspeed or a high sink rate, that doesn't count as stabilized. Also, I **MAY** adjust them based on the situation. For example, gusty winds, a very short, or a very narrow runway could require me to re-evaluate. Here's what I've found from experience: pilots that have at least 2 of the 3 variables stabilized within those tolerances, at 300' AGL, can fine tune the third approach variable for a good, stable landing (provided the third variable is close to those tolerances). If they have more than one variable outside of those tolerances, the landing attempt will be unstable (at best) and possibly very ugly. I've seen landing results that are predictable and repeatable using those tolerances at a visual decision point.

So what do you do if your approach isn't working out? GO AROUND! There's no shame in going back up to take another shot at it, but there can be plenty of shame in botching the landing. As a pilot, good judgement is a necessary skill. In situations like this, the "good judgment" to take a bad approach, and go around is always a positive, not a negative!

Some students develop habits to stop flying the aircraft in the flare, even after flying a nice, stabilized approach. They would give up and accept whatever the aircraft wanted to do at that point instead of flying all the way to the ground. The airplane can't be allowed to drift off centerline, develop a sink rate, etc. You're still flying the airplane; don't let it fly you! And almost as important, don't stop flying once you've touched down – don't release/neutralize the controls just because you're on the ground. You need those crosswind controls more than ever as you're slowing down. Your control surfaces are less effective as you lose airspeed (but you're still flying), so you will have to increase their deflection as you slow.

Having a decision point and evaluating tolerances at that point are great ideas. Both ideas are technique and not procedure. Flying a stabilized approach (on speed, on glidepath, and on centerline) and continuing to fly, even after touchdown, are good piloting procedures - period. Develop what works for you and talk your ideas over with other club members/instructors. Sticking to whatever decision point and parameters you set will help you achieve consistently good landings.

**Fly Safely!**