

# **FLYING LESSONS** for October 14, 2010

suggested by this week's aircraft mishap reports

*FLYING LESSONS* uses the past week's mishap reports to consider what *might* have contributed to accidents, so you can make better decisions if you face similar circumstances. In almost all cases design characteristics of a specific make and model airplane have little direct bearing on the possible causes of aircraft accidents, so apply these *FLYING LESSONS* to any airplane you fly. Verify all technical information before applying it to your aircraft or operation, with manufacturers' data and recommendations taking precedence.

**If you wish to receive the free, expanded *FLYING LESSONS* report each week, email "subscribe" to [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).**

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## ***This week's lessons:***

**Don't give up** when the wheels touch the ground. I've seen it, I'm sure other instructors have seen it, and perhaps you've even seen it in yourself at times—after completing approach, flare and touchdown, the pilot exhales noticeably, and eases his/her grip on the controls.

**It everything's not perfect** the airplane will bounce and skip, and may quickly begin a porpoising or "hopping" maneuver, increasing stress on the nosewheel (if a tricycle gear airplane) or coming closer and closer to nosing over (if equipped with a tailwheel).

**If the porpoise goes uncorrected** the amplitude of the hops can quickly collapse a nosewheel, or cause the airplane to tip up on its nose.

**If the pilot steps in** there's a risk of a [pilot-induced oscillation](#)—"sustained or uncontrollable oscillations resulting from efforts of the pilot to control the aircraft." The trick is to firmly establish a pitch attitude that sustains climb, adding power to abort the landing, going around to set up for another attempt.

See [www.youtube.com/watch?v=XHPv0qt03aA](http://www.youtube.com/watch?v=XHPv0qt03aA)

**At the same time** the airplane may diverge from runway alignment, especially if there's a crosswind.

**My suggestion:** If the airplane bounces, add power and climb at least into ground effect. If the runway is short, establish a  $V_x$  climbout right away—one bounce and you're out. If sufficient runway remains, once you're at a safe speed and attitude in ground effect, you might elect to lower the nose and reduce power, returning to a flare and, hopefully, a more controlled landing. Bounce a second time and immediately go around—it's too challenging to recover and land a third time in the runway remaining.

**Avoid the hazard altogether** by flying the airplane...*all the way* through the landing. Speed, pitch and directional control (not to mention the airplane's structural integrity) depend on proper control of the airplane even after lift generation ends. Don't give up just because the wheels have hit the ground.

Comments? Questions? Tell us what you think at [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).

## **Debrief:** Readers write about recent *FLYING LESSONS*

Reader Charles Lloyd comments on our discussion of angle of attack:

I installed an Alpha Systems AOA in my Cessna 182. My approaches are more stabilized and landings at a 1,800 foot grass strip, SN65 hitting the touchdown zone show increased repeatability. The indexer mounted

in the center of the glare shield is in the pilot's line of sight. The traditional red and yellow chevrons surrounding the green donut present slow, on target and fast airspeeds for your approach. I installed the Legacy Vertical LED kit. The cost is \$1,500 plus installation. Check it out at [www.alphasystemsaoa.com/index.html](http://www.alphasystemsaoa.com/index.html).

I asked Charles if he now uses this as his primary pitch reference on takeoff and landing, or does he still primarily reference airspeed. Charles replied:

I use the AOA as primary pitch and power for vertical speed as I turn to base on approach. On final AOA target display is the "yellow chevron and the lower donut half" with airspeed as secondary. I transitioned from a vertical light bar AOA model to the current Legacy (chevron-donut) unit. The Legacy unit's location in our Skylane is similar to the [Cessna] Citation location and response.

I do not use the AOA on takeoff as much as approach to landing. On climb out it is an excellent Vy aid. My 1966 182 has a Horton STOL Kit plus over 35+ other STC's and Field Mods. The skimpy pre-GAMA operator's manual has limited value for my aircraft's configuration. I did a complete stall series and converted IAS to [Calibrated Air Speed] CAS. This permits me to verify by a second method the AOA 1.3 Vref calibration procedure.

I couple this technique with the 300 feet per mile calculation to achieve a 3-degree glide path to the touchdown zone. I do this by having the...runway threshold waypoints programmed into my Garmin 430 and 530. Then program an extended centerline and you have 1, 2 and 3 mile waypoint to check using the distance to the runway threshold. If I am landing at a high traffic airport...then I keep my airspeed higher until I am on a one mile final to stay out of the way of faster traffic where reduce power I confirm my approach speed with the AOA display.

Mark Korin is the Alpha AOA president and has a passion for flight safety. He feels that the Alpha AOA is a tool that gives pilots' an improved awareness of their aircraft performance. He tells me that his biggest challenge is educating the general pilot population to understand the advantages of AOA vs. airspeed to manage aircraft performance.

I live not too far from Mr. Lloyd. I plan to take him up on his offer to get together for a demonstration of the Alpha AOA device. Thanks, Charles!

Readers, I invite your reviews of this and other angle of attack sensors for general aviation airplanes. Send your thoughts to [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).

## Attitude flying

Last week we looked at an advertisement for a popular, modern single-engine, high-performance airplane. The ad's tag line is "I can't afford to wait it out because if I wait today, tomorrow might not happen."

Again, I mean no disrespect to the people owning and flying the advertised airplane, nor those who very safely and competently represent the advertising manufacturer. I do ask readers, however, to put yourself in the mindset of someone thinking about buying their first airplane, perhaps someone without a lot of high-speed, cross-country flying experience. Does the wording of this advertisement suggest a pilot attitude that encourages new owners to dismiss the realities of flight planning and decision-making? How does this mesh with the NTSB and AOPA studies that show a higher rate of fatal mishap in "glass cockpit" airplanes that in the same models with traditional instrumentation?

*FLYING LESSONS* asked readers to suggest alternative wordings for an ad that supports the message the manufacturer really wants to say: that, *within limitations*, this airplane is a superb business tool that outshines commercial air travel and ground transportation. Here are your responses so far:

- Alternate wording for airplane advertisements: "Time to spare? Go by air!" Truthfully, that's best advice for anyone flying piston aircraft. Scott Crossfield discovered that with his [Cessna] 210 when he flew into a thunderstorm. Just last weekend another highly capable pilot, French Air Force Captain and Aerobatic World and European Champion Renaud Ecalle died when his single-engine wood-and-fabric Jodel 1050 flew into "severe weather". Just read the accident reports. Great pilots pile 'em up regularly when hubris overcomes good sense.

- GREAT messages in the weekly lessons. Spot on. While I generally agree on your position regarding the ad, if it was Gulfstream pushing their G5 I would have a more difficult time taking issue with it compared to say Cirrus. Depends on the equipment - assuming the pilot is qualified.

For the record the ad in question is not by or for Cirrus airplanes. But it is aimed directly at the business owner/pilot who flies himself in a single-pilot IFR environment, whose responsibilities go far beyond planning and execution of safe aerial transportation.

- The wording can stay. Just a line at the bottom needs to be added: "I'm calling my agent to make sure my life insurance is paid up!" Or maybe, "My family will get along fine without me and my income!" What is the old saying? "There are old pilots and bold pilot, but there are no Old, Bold pilots." More for your amusement, but I am serious about it. Even in Known Icing equipped aircraft, I think too many wrong decisions are made. I like the plane [that's being advertised], [but] hate the lack of training its pilots do.
- I had the same response to this ad! Not only that but I'll go farther...the continuous insinuation that single-engine GA airplanes make great business "tools" is simply absurd. They do not, especially when flown by the guy or gal doing the business. When I have a meeting to attend, and there are real stakes involved, after several intense hours I'm stressed and tired. In short, I'm not at my best for a flight (in conditions that circumstances have probably not let me choose) and probably don't have much reserve left. I do occasionally use my airplane for business trips, but never when I'm using the plane because "I have to get there" or because of some time advantage (real or imagined) that it might have over driving or going commercial.

I'm a big supporter of personal air transportation (as I hope the time I devote after-hours to *FLYING LESSONS* attests). But I contend that flying yourself for business or time-sensitive personal reasons (family reunions, weekend trips, weddings and funerals, etc.) only makes sense if you are the one who has the ability to schedule the flight, either by authority to schedule and cancel business appointments without consequences (or you are ready and willing to accept the consequences of canceling), or if you are willing to budget an extra day or so on either end of the trip to get there early or delay on the way back because of weather, fatigue or other no-go issues. If you are the schedule-setter or don't build in enough time as a buffer for the outbound and return trips, then you will eventually be tempted to go when the weather's a little iffy, or you're a little tired, or you have too much business or personal distraction on your mind...or worse, a combination of these factors. How you deal with fatigue and outside stressors will determine whether flying yourself makes sense for a given trip on any given day.

- I am not sure I would be overly concerned by the wording in the ad. At some point the buyer of an airplane will interface with the instructor community. That is where the new owner will learn the regulations and the limitations of himself and the airplane. At that point he will start a basis for acquiring judgment.

All the more reason for professional CFIs well versed in the nuances of pilot psychology and instructional technique, who can act as interventionists for pilots who may resist their urges long enough to earn a certificate or rating, but turn themselves lose once out of the instructional environment. In this regard the instructor providing Flight Reviews bears the greatest responsibility for detecting and correcting habits not only in stick-and-rudder skills, but also in detecting and perhaps modifying pilot attitudes...turning the only required recurrent training for pilots not directly employed in aerial transportation into true quality control checks. Are we producing flight instructors who have the skills necessary to do this with authority, yet with tact and finesse necessary to affect pilot attitudes?

Great discussion! Let's keep it going at [mftsurvey@cox.net](mailto:mftsurvey@cox.net).

**Required Reading:** Your *FLYING LESSONS* homework for the week.

### Practice Makes Proficient

What does it take to be proficient? *FAA Safety Briefing* editor [and *FLYING LESSONS* reader] Susan Parson discusses [the 10,000-Hour Rule](#) and how it applies to general aviation. Parson discusses FAA resources that can help you squeeze the most proficiency out of your flight time or your next flight review. See [www.faa.gov/news/safety\\_briefing/](http://www.faa.gov/news/safety_briefing/)

## Whatever Happened to Practice?

“No amount of instruction or encouragement will ever displace the value of simply doing it yourself.” Read Paul Bertorelli’s latest blog on [what it’ll take](#) to improve the runway loss-of-control record. See [www.avweb.com/blogs/insider/AVWebInsider\\_Practice\\_203402-1.html](http://www.avweb.com/blogs/insider/AVWebInsider_Practice_203402-1.html)

*Fly safe, and have fun!*

Thomas P. Turner, M.S. Aviation Safety, MCFI  
2010 National FAA Safety Team Representative of the Year  
2008 FAA Central Region CFI of the Year



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