FLYING LESSONS for November 23, 2017

FLYING LESSONS uses recent 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 airplane have little direct bearing on the possible causes of aircraft accidents—but knowing how your airplane's systems respond can make the difference as a scenario unfolds. So apply these *FLYING LESSONS* to the specific airplane you fly. Verify all technical information before applying it to your aircraft or operation, with manufacturers' data and recommendations taking precedence. **You are pilot in command, and are ultimately responsible for the decisions you make.**

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This week's LESSONS:

I'm spooling up the FTA ("faster than airlines") drive for a Personal Aviation trip to see my family for Thanksgiving (non-US friends, come on up and have some turkey). While I update my Electronic Flight Bag data and rejoice that a *huge* high pressure system will cover my route on the way out tomorrow and on the way back three days hence, let's catch up on just some of the reader emails in this week's Debrief section. **Happy Thanksgiving!**

Comments? Questions? Let us learn from you, at mastery.flight.training@cox.net

Debrief: Readers write about recent *FLYING LESSONS:*

Reader Tom Cahill offers a correction to last week's *LESSON,* "Three Degrees of Separation":

> I am a CFI-I, MEI and have a Skylane, a Cessna 310 and a 1966 Debonair. I very much enjoy your writings as well as the fine work at ABS/BPPP. In your recent article concerning the VASI, I believe there is an error. I have always taught that Far 91.129, section 3 applies to all aircraft. Your article made me go back and re read the FAR, but my take remains the same:
>
> 91.129(2) (the glideslope section) by its own terms only applies to "a large or turbine powered airplane."
>
> 91.129(3) (the VASI section) by its own terms applies to any airplane ("an airplane").
>
> If you would re-read the section, I see nothing to indicate the section on the VASIs/PAPIs applies only to large airplanes. I would be very interested if you have a different take after rereading the far.

You're exactly right, Tom—in Class D airspace, *all* airplanes are required to remain at or above a visual glidepath when such equipment is available. I'm embarrassed to have misquoted the regulations. My main point, that all pilots should follow this guidance in *or* out of Class D airspace, remains the same. Thanks for prompting me to make this correction.

See http://www.mastery-flight-training.com/20171116-flying-lessons.pdf

Reader and 46-year Certificated Flight Instructor John Geitz adds some personal insights into the 2012 video that prompted last week's *LESSONS*:

> I read your item in "Mastery..." concerning the C172 and SUV collision on short final at my most local airport, Northwest Regional (52F) . Several items of interest that are not evident from the video that "impact" on the situation.
>
> (A) The airport is privately owned but, with restrictions, public use. The condition of the airport is rather poor. The pavement is only about 35 feet wide and in rather poor condition.
>
> (B) The aircraft is landing to the south. Not entirely evident is the **rising elevation under the final approach path**. The runway has a down slope. Typical displaced threshold would assume the height of the road as 17 feet. The displaced threshold would need to be about 510 feet beyond the road. What little marking of a displacement there is about 370 feet from the road. If 510 feet were used, the resulting landing length available would be less than 3000 feet.
>
> (C) The flight school at the airport actively discourages the use of flaps on landing (see the video). **Too flat and too fast approaches are too typical**. Landing operations to the south are still exciting today.

Thanks for the local view, John. You're right…even though the standard glidepath provides scant little clearance, the trend is for pilots to land at shallower angles yet. That's why I drew the diagram for "Three Degrees of Separation," and did the trigonometry to estimate the height above (flat) terrain at various distances from the runway threshold—the illustrate how important it is to remain *at least* on the visual glidepath, if not higher.

Reader Andy Smith adds:

> Towards the end of the learning statements was "Forget the regulations. Whatever you fly, stabilize your approach, trend toward and ensure you are on speed, in configuration, on glidepath, and in alignment with the runway on final approach, and remember that when you are on the proper glidepath you have a barely acceptable obstacle clearance, and very little margin for error beneath the glidepath guidance."
>
> I absolutely agree with 99% of this, and even the spirit of the last 1%. **Hitting performance goals during any approach, visual or instrument, gives you a safe, repeatable, "standard" by which you can also use to judge when to go around (as things deviate from your standard approach).** My exception is with "Forget the regulations..." Perhaps this is just a nit-picky engineer talking too much, but in today's lawyer language society, verbage can make a difference.
>
> Yesterday, I reviewed an article (http://www.rapp.org/archives/2017/11/stupid-pilot-tricks/) which highlighted multiple unnecessarily high risk decisions, a regulation bust, and endangering lives on the ground during these critical low-altitude times (takeoff/initial climb, approach/landing). 91.123(b) gives us the authority to deviate from regulation/ATC only to the extent necessary to maintain safe flight, per the judgement of the pilot exercising that authority.
>
> Again, thank you for putting together this publication every week.

You're correct, Andy. I should have said something to the effect of "Go beyond the minimums. Do more than the regulations require….," and reinforce the need to remain ***at or above*** the visual glidepath. That was the "spirit" of my "Forget the regulations" statement: not to disregard them, but to exceed their minimum guidance. Thanks!

Reader and retired Air Force pilot John Scherer addresses the "stabilized approach" portion of last week's *LESSONS*:

> Tom, I loved your article on stabilized approaches. In the C-5 we had a hard requirement of 50 feet over the threshold (for obvious reasons—keeping the aft landing gear out of the overrun). But, that kept each approach stabilized. Works in [my] Bonanza as well.
>
> Your Mastery Flight Training each week is the best 'think' piece each time I read it. After 48 years of flying, I can recognize what is worth the time you read. Yours ALWAYS is. Keep it up!

See https://www.avweb.com/news/leadingedge/leading_edge_23_stabilized_approaches-199047-1.html

Thanks very much, John. It's been said that everything you learn in smaller airplanes applies to larger ones. It doesn't always work the other way 'round, but there is still much we lightplane pilots can learn and adapt from those flying the very heavy iron.

An anonymous but highly credentialed reader writes about "It's In the Way That You Use It," from the November 9 *FLYING LESSONS Weekly*:

> I have a few comments about your…recent newsletter, particularly as it concerns the Halladay Icon A5 crash. I loved the Eric Clapton reference, as it is one of my favorite Clapton songs.
>
> 1. "It does not appear that there is necessarily anything wrong with the airplane design." I realize you are trying to use recent and relevant accidents and incidents, but this sentence would make it appear that the aircraft design did not play a factor. ***Until a crash investigation is complete, we won't know if it did or if it didn't.*** **FAR 23 has certain stall characteristics requirements that LSAs don't have to meet.** If the pilot got close to the water in a high bank angle, realized his descent rate was excessive, he may have pulled hard and effectively snap rolled into the water. I don't know that that is what happened, but I don't know that it didn't, either. Could he have gotten away with that reaction in a J3 on floats? My guess is – yes. My point is that the aircraft design could have been a factor, and when I saw the video, that was my first reaction, not that he just misjudged his altitude and descent rate. I would have left any mention of the design out of it.

Point taken. My intent was to use this as but one example. In most cases of low-altitude maneuvering crashes, the airplane would probably have crashed regardless of its make and model…it is indeed "in the way that you use it," not what it is, that is causal. However, you are exactly correct: **we don't yet know** what happened in this particular case. And you bring up the point of differences between FAR 23 certification standards and the industry consensus approach permitted in Light Sport types…a difference most pilots are not aware of, or at least do not consider. That's one of the many hazards of using specific examples when discussing topics that are top-of-mind to pilots in the short term. The reader continues:

> 2. Robert Sumwalt was wrong when he said that you can't fool yourself. In fact, **most people believe that they are above average in everything. It's called *illusory superiority***, and there have been a lot of studies about it. (Just Google "illusory superiority" and there will be hundreds of studies.) One of the most famous is the Dunning-Kruger tests, and their paper is aptly titled, "Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments". It's a good read. It has given rise to the term "confident incompetents". When I was a Designated Examiner, I gave over 1,000 checkrides, and I saw this all the time. **The average pilot CANNOT self-assess, any more than the average person can.** Fun fact: 80% of drivers believe they are average or above-average drivers while they are texting; 36% think they're above average!
>
> Enjoyed the newsletter, had to vent.

No problem. Thanks for taking the time to let us all learn from you, anonymous sir!

See:
http://www.mastery-flight-training.com/20171109-flying-lessons.pdf
http://psych.colorado.edu/~vanboven/teaching/p7536_heurbias/p7536_readings/kruger_dunning.pdf

It's been a long while since this Debrief item came in, but I like the wisdom reader Geoff Zuber describes so I belatedly pulled it from my back emails:

> As I read the fuel discussion I was taken back more than forty years and a "chat" with my 25,500+ hour father who had time in everything from Tiger Moths to Spitfires, and many airline aircraft plus some 600 hours on Barons and Bonanzas.
>
> **Dad's Rule 1:** You can only have too much fuel when you're on fire. Take less payload, not less fuel. Obviously more complicated than that in reality, so a long and wonderful dissipation with real life stories followed.
>
> **Dad's Rule 2:** It's better to have too much oil and burn it off than takeoff with the minimum allowed and have less time to land if it starts leaking out. Flying Connies and the like certainly cemented this in my father's mind, but he used the same rule in every aircraft.
>
> **Dad's Rule 3:** The fuel tank is the worst liar one will ever meet. Never believe what it last told you. Check for the truth before you fly, every time, even if it was only a short $300 hamburger trip and at an airport "just over the way" and only a few gallons away. We have certainly had fuel disappear from the tanks.

Unlike my father I'm a low hour pilot and will be doing my the Aussie BPPP next month. Can't wait!

Thanks, Geoff. I hope you enjoyed your Bonanza training last March, shortly after you wrote this.

Questions? Comments? Suggestions? Let us know, at mastery.flight.training@cox.net

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When I get new students, I have them sign up for two things immediately: AOPA and *FLYING LESSONS*. Keep up the good work, and keep the faith! - Paul Sergeant

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NTSB Requests Industry Feedback on Strategic Plan

From www.ntsb.gov: The NTSB has developed a draft strategic plan for Fiscal Years 2018-2022. We are seeking industry feedback on this plan to help us ensure we are taking the right approach to advancing the mission of improving transportation safety.

The newly revised strategic plan, required to be updated every four years, reflects our priorities and addresses three strategic goals: safety leadership, engagement, and synergy. The plan summarizes our analysis of the internal and external environment impacting NTSB; evaluates NTSB programs and risks; and provides goals and objectives for the next five years.

We have set up a page on our website that offers more details and provides instructions for how to provide feedback. Feedback is requested by November 30.

See https://www.ntsb.gov/about/Pages/strategic-plan-engagement.aspx

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Thomas P. Turner, M.S. Aviation Safety
Flight Instructor Hall of Fame 2015 Inductee
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