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FLYING LESSONS for December 4, 2025

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 most 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 in your success as the 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

From an NTSB final report:

> According to the flight instructor, the student pilot had previously completed three night landings to a full stop and taxi back during the dual instructional flight. On the fourth attempt, **the instructor elected to simulate a loss of engine power**. While on final approach, the student pilot aligned the airplane with the runway centerline, and the flight instructor thought that the airplane would be able to reach the runway threshold. As the airplane approached the runway, the instructor described that the airplane was in a "flat position" and **struck the ground, short of the runway.** The nose landing gear was displaced upwards and aft which resulted in substantial damage to the airplane's lower firewall. The flight instructor reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.
>
> The student pilot and instructor stated that they believed that the runway end identifier lights were not operating during their flight and that only the two outer left and right green lights were illuminated for the entirety of the flight, including the preceding three landings, which factored into their depth perception for touchdown. During correspondence with the student pilot following the accident, he provided an annotated aerial image where he circled the lights he believed to be inoperative at the time of the accident. According to the airport manager, the lights referenced by the student, which appeared to be the runway end and edge lighting, were operational at the time of the accident.
>
> **Probable Cause and Findings**
> The National Transportation Safety Board determines the probable cause(s) of this accident to be: The **student pilot's failure to maintain an appropriate glide path** and the **flight instructor's inadequate monitoring** of the landing approach, which resulted in the airplane contacting the ground short of the runway.

See https://thomaspturner.com/wp-content/uploads/2025/12/2025.0128-C172-GA.pdf

Next time you train

Flight instruction by its nature puts the Pilot Receiving Instruction (PRI) into new, unusual and—for the PRI, at least—unfamiliar situations. Whatever the PRI's experience, from pre-solo student to ATP in recurrent training, that's how we learn.

To manage that risk, when I'm briefing with a pilot before a training flight I define the PRI's role and responsibilities, and mine. My usual briefing goes something like this:

> On this flight you are the Pilot-in-Command. If you can't legally serve as PIC, fly as though you are. By that I mean make your own decisions. If you're flying a steep turn or

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setting up for a stall and you see an airplane out of the corner of your eye, break off the maneuver and evaluate whether there's a threat. If you're on final approach and think you need to go around, then go around. Tell me what you're doing, and we'll talk about "why" later, but you won't be wrong. If you see a high oil temperature or a low oil pressure, or some other unusual indication, point it out and act on it—don't think I've somehow changed the indication for training. If something doesn't feel right, do something to make it right if you can. Use me as a resource to help up to and including me taking the controls if you want. But your first job is to fly the airplane, and to learn from what you experience on this flight.

I continue by describing my role:

My primary responsibility is to assure the safe outcome of the flight. A high, secondary goal is to teach, but I'll sacrifice a training goal if needed in the interest of safety. I'll call for you to abort a takeoff or go around, to break off an approach or discontinue a maneuver, even cut a flight short and land immediately if required by an abnormal condition or an emergency. You'll hear me clearing traffic and confirming actions out loud, because safety is my first job as flight instructor.

Wrapping up this part of our briefing I'll state:

Your biggest challenge is to manage distractions as you learn. Mine is to remain focused and avoid complacency as I teach. If I think you're distracted I'll ramp down the training to help you focus. If you feel overwhelmed let me know. I'll work hard to remain alert and engaged, but if you think I look or sound unfocused let me know. Again, you fly and learn, and I'll ensure a safe learning environment.

Establishing roles and responsibilities for a training flight up front empowers the PRI to fly and even to make mistakes, knowing I'll be there to ensure any mistakes don't go too far.

The report that opened this week's *LESSONS* is NTSB's final, so it's unlikely we'll learn more about it. But in the context of PRI and CFI (certificated flight instructor) roles, what can we learn?

The flight appears to have been conducted near the end of training to qualify the 52-hours-total-time, 28-year-old student PRI for his Private checkride. Often the three hours of night instruction required before the Private Pilot Practical Test is saved for the very end of the process. The PRI held an FAA First Class medical certificate at the time of the crash, suggesting he was pursuing a professional flying career.

The 68-year-old, 4400-hour total time CFI also held a First Class medical with an unspecified Special Issuance, and had nearly 2000 hours in Cessna 172s at the time of the crash…all suggesting a highly experienced flight instructor.

At the likely stage of the PRI's training he should have had a good grasp of the sight picture and aircraft control required on final approach. The twist was that this time it was dark, and the student was learning to apply his experience to this new and challenging environment. It was the CFI's job to guide the PRI through this transfer of experience with a high level of alertness for the student's control inputs and his management of airspeed and the flight path.

The PRI may have been distracted. Chances are excellent he had less than three hours of night experience, and the lack of familiar visual contact flying would skew his reactions and divert much of his attention. Runway edge lighting may not have been working, affecting him further, or if the airport manager's dispute was correct the PRI's post-crash report would indicate an even greater distraction and loss of situational awareness in the moments leading up to the crash.

The CFI may have been complacent, not monitoring the airplane's energy state or flight path closely. He may have assumed too much from the PRI's performance if the student had been exemplary on previous flights. The FAA limits CFIs from conducting more than eight hours of flight instruction in a 24-hour period, but there's nothing limiting other activities, even

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noninstructional flying, and no “alarm clock to engine shutdown” maximum duty day limits—the instructor may have simply been tired and wanted to go home. The CFI may not have had much more night flying experience than the student, or any recent night experience. If the runway edge lights were indeed malfunctioning he was susceptible to visual illusions from that as well.

We don’t know how these variables (or others) may have been in play for both the PRI and the CFI. Could a preflight discussion of roles and responsibilities have helped avoid this crash?

If the student—even as a student pilot—***knew he had authority*** to go around without his CFI telling him to do so, if his final approach wasn’t working out, if he felt distracted, or even if the approach just “didn’t feel right,” he might have gone around before the airplane impacted short of the runway.

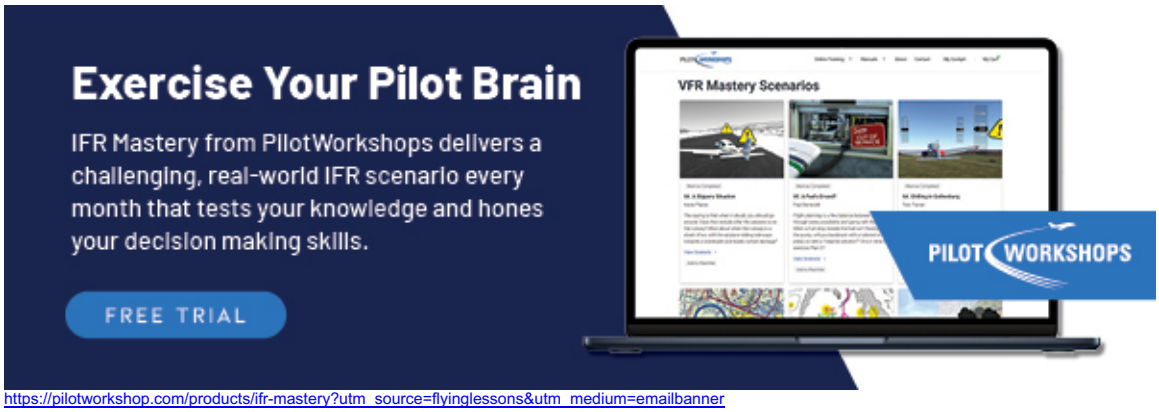
If the instructor had reminded himself his ***primary responsibility is to assure the safe outcome of the flight***—he may never have even considered it that way—he may have been more focused on the overall combination of student experience and aircraft control and flight path management. He might have stepped in with suggestions for better controlling the approach, called for a go-around if the PRI did not, or even taken the controls and gone around himself if needed, with the added bonus of demonstrating that he would not have tried to salvage the landing but saw the need for and wisdom of climbing away to try again.

This is all consistent with the NTSB’s Probable Cause for the cited mishap, if you’ll read it again:

> The National Transportation Safety Board determines the probable cause(s) of this accident to be: The **student pilot’s failure to maintain an appropriate glide path** and the **flight instructor’s inadequate monitoring** of the landing approach, which resulted in the airplane contacting the ground short of the runway.

Next time you are the PRI, start a discussion of the unique hazards of flight instruction, what you see as your role as student and what you need and expect from your instructor. Sometimes just saying out loud that **your enemies are student distraction and instructor complacency** makes all the difference.

Questions? Comments? Supportable opinions? Let us know at mastery.flight.training@cox.net.



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Debrief

Readers write about recent *LESSONS*:

Frequent Debriefer and multiengine instructor/training company manager Dave Dewhurst continues last week’s Debrief discussion:

> This is in response to the poor fellow who had a problem with multi-engine training. We do initial rating, transition, and recurrent training in 20 different makes and models of multi-engine airplanes. Our lowest time success was to take a gentleman with 300 hours into a C421. He was

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> safe and insurable. There is no reason for a fellow with 1,000 hours not to have achieved the rating. That is not a limitation for him.
>
> I do not object to the term Drill. All flying is a series of Drills and they are not all for emergencies. Given an event, the plan needs to start somewhere. Start with a memorized list that secures the situation, then deal with what needs to happen next.
>
> The airplane we use for the initial multi rating intentionally does not have a GPS. We want to deal with the issues of the airplane, not get lost in fancy avionics issues. Avionics training can happen later and will be specific to the airplane the pilot will be flying.
>
> Depending on the airplane, we teach single engine stalls, delayed Vmc recovery, and delays in securing a failed engine. That is along the lines of dealing with a sudden emergency by first winding the clock. Also, depending on the airplane, we teach actual engine failures, not simulated, and an engine failure below 500 feet on takeoff.
>
> A lot of what we do is providing teaching techniques to instructors that are already CFI-ME rated. That is usually where the instructor has a client with an airplane new to the instructor. Keep up the good work, my friend.

That's the difference between a minimum-standards approach to flight instruction and training aimed on proficiency and **mastery**. The problem is that customers usually want results fast and at the lowest possible cost. They make the argument that the FAA only requires so much and anything more is a waste of time and money. They sometimes feel the instructor is "milking" them for extra instruction time and fees they don't really need.

The U.S. multiengine rating, which as discussed last week requires demonstrating proficiency in a fairly short list of topics with no minimum instructional time requirement, is especially affected by the minimums vs. proficiency argument. Minimums win out most of the time as evidenced by the "standard" three-day multiengine rating course. The FAA has to draw the line somewhere, and it has done so where it feels a pilot has done the minimum necessary to safely fly the airplane. This is a situation where earning the rating really is a license to learn.

I'll ask you for a follow-up, Dave, for my benefit as well as that of other readers: How do you approach the "minimums vs. mastery" discussion with your students in a way that causes them to choose training to your standards? Do pilots sometimes go elsewhere when presented your approach? Thanks, Dave.

See https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-november-27-2025/

Reader, instructor and Air Safety Investigator Jeff Edwards writes about the November 13th *FLYING LESSONS Weekly*:

> Let's just admit the Third Class medicals along with the Medicare mandated annual exams are a joke. They are more paperwork exercises than medical examinations. The FAA study you cited shows no significant difference in BasicMed and 3rd Class accident data. The conclusion I draw is what do we as a GA pilot community recommend? How about eliminate the Third Class examination requirement and remove the flight and equipment restrictions on BasicMed.

Your Medicare comment may be off topic unless you are inferring insurance medical requirements based on a pilot's age. But there is an argument to be made that BasicMed does as much (or as little) to predict future incapacitation issues as a traditional FAA Third Class physical, so why not simply expand BasicMed for all operations currently conducted with a third class. The recent U.S. change to dramatically expand the type and capability of aircraft that may be flown by a Sport Pilot with no medical requirement beyond holding a current driver's license suggests the FAA may be open to such a change to BasicMed. Thanks, Jeff.

See https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-november-13-2025/

We'll wrap up this week with a comment from reader Rick B, also responding to the November 13 *LESSONS* and the report from the week before that:

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> Back in my earlier days of IFR training about 15 years ago, I flew, with my CFII from Indiana to Florida and back. Each way we encountered thunderstorms and turbulence. I was told by my CFII to keep the wings level and **adjust power so as to keep my Archer III at around 100 knots** as we encountered significant (50'-200') ups and downs for roughly 10 minutes. We made it through both ways using this technique and I learned a lot, but **I wasn't pleased with my CFII's decision making getting us into this mess in the first place**. I've since never allowed myself to get that close to thunderstorm turbulence, but if I ever do **I'll know how to deal with it**.
>
> As a side note, there was another aircraft considering going through the weather and he asked ATC what he thought, and ATC said "Well an Archer just made it through."

Hopefully the controller stated that as a matter of fact and the other pilot did not interpret it as encouragement or even a dare to enter the area of weather. Did you think to ask the controller if you could give the other pilot a PIREP of your experience?

Your instrument instructor's guidance is spot on for turbulence penetration: slow to a speed far enough below Turbulent Air Penetration Speed (V_B) for the aircraft at its current weight so that at the "high" end of speed excursions in bumps the indicated airspeed is still below V_B, but not so slow that the "low" end of speed excursions is close to flaps-up stall speed.

Most light aircraft manufacturers do not publish V_B for light aircraft, so it's generally accepted to use V_A, Design Maneuvering Speed, instead. V_A by definition is at maximum weight so there is no handbook adjustment for flight at reduced weights. If you have no other guidance reduce the V_A speed by 2% for every 100 pounds (45 kilograms) below maximum gross weight as an approximation.

On speed, focus on maintaining wings level and a constant attitude, accepting altitude excursions that may result—ask ATC for a block altitude if you can't stay within 200 feet of what's assigned. In retractable gear airplanes (I know the Archer is not), extend landing gear (unless you've also entered icing conditions, a risk management *LESSON* for another day). Extended gear lowers the airplane's center of gravity and in many cases moves the CG forward, both changes being stability enhancers. The extended struts may add a little "stabilizer area" to dampen out yaw excursions. And if the airplane does get disturbed nose- or wing-down, the drag of extended landing gear resists acceleration.

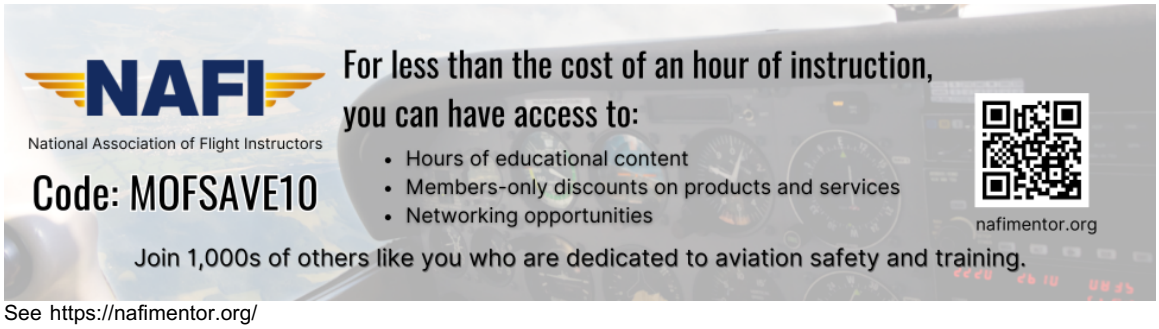
Of course you had all these benefits built in with the Archer's fixed landing gear.

By telling you to slow to 100 knots and to focus on keeping the wings level, your CFII was teaching you how to fly through what you might decide to be an acceptable amount of turbulence (moderate or less), and an emergency escape technique should the turbulence exceed your risk tolerance and certainly if it affects your ability to control the airplane.

I agree with your instinct: avoid the conditions your CFII had you fly through, and use this experience to give you a way out of unexpected turbulence penetrations. Thank you, Rick.

See https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-november-6-2025/

More to say? Let us learn from you, at **mastery.flight.training@cox.net**



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NEW THIS WEEK: Arthur Utay

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Happy Thanksgiving to my U.S. readers, and safe and enjoyable flights to readers around the world.

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