

# **FLYING LESSONS** for March 15, 2012

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. You are pilot in command, and are ultimately responsible for the decisions you make.

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

**The airplane diverted** due to an issue with the window or door. According to the NTSB, it was on final approach when another airplane was on the runway. The accident airplane was then observed attempting a go-around, subsequently impacting terrain.

**The distractions of abnormal events** like an open door or window may make it challenging to control the airplane. But control it you must...even if a second abnormality, like an obstacle in your intended landing zone, forces you to change your plans.

**The aircraft was apparently controllable**, because the pilot was making what appears to be a normal approach and landing that was thwarted only by the need to avoid a collision on the runway. But the power-up and go-around quickly led to loss of control and a fatal crash.

**The need to fly through distractions** is one of the primary reasons we need to regularly practice basic airplane control and maneuvering—including balked landing/go-around procedures. A go-around is not an emergency procedure; you should be so well-practiced in the maneuver that you can establish the power, climb attitude and configuration without having to think about it.

**In that way** if additional abnormalities demand your attention, such as an open door or window, you can handle any unusual twist that puts on your well-practiced procedure.

**So practice a go-around** from short final in the landing configuration every few weeks. That way you'll hit your power, attitude and configuration targets without having to devote so much mental bandwidth to the process that you cannot handle the other demands on your attention.

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**There were several airplanes and a helicopter** in the traffic pattern, according to the NTSB Preliminary Report. They were performing simultaneous operations to parallel runways around the time of the accident.

**The accident pilot contacted the tower** from a position five miles south of the airport and requested a full-stop landing. The pilot was instructed to report when on the downwind leg for runway 9R. Shortly after, a similar aircraft on an approximate five-mile final approach for runway 9R, was cleared for a touch-and-go landing.

**A minute later**, the tower controller advised the accident pilot to extend the downwind leg for the aircraft on final approach. The accident pilot then requested a long landing on runway 9R in order to reduce taxi time to the fixed-base operator (FBO), and the tower cleared the accident airplane for landing on runway 9R.

**The tower then radioed** the accident pilot to confirm that he had visual contact with the straight-in airplane, now on a one-mile final for runway 9R. The accident pilot replied that he was on a "real short base" for the same runway. The controller then instructed the accident pilot to "cut it in tight" to runway 9R.

**Several witnesses described** the airplane as it entered a steep bank, followed by a vertical, uncontrolled descent. The airplane disappeared from view into wooded terrain short of runway 9R. The airplane was equipped with a whole-aircraft recovery parachute system it appears the pilot attempted to deploy, but the airplane was too low for the 'chute to inflate before the fatal impact.

**Runways by definition** are the narrow end of a funnel into which many aircraft will fly. Tower-controlled or not, it's the pilot's responsibility to maintain separation from other traffic when in visual conditions. Even in marginal weather or IMC, if you report the traffic in sight you are assuming responsibility for avoidance of the aircraft and its wake turbulence.

**A preliminary look** at this mishap, however, suggests that the pilot felt rushed to arrive. He requested to land long "in order to reduce taxi time," possibly also thinking that landing long would permit the controller to clear him to land at the same time as the other aircraft. And it might have worked, if the pilot hadn't tried to turn too steeply, perhaps subconsciously trying to force the airplane around the turn with excessive rudder. What appears obvious is that one wing went beyond its critical angle of attack and stalled, or the pilot let the airplane fall into an incipient spiral from which there was no chance of recovery.

**Fifty-one weeks of the year** and at approximately 13,999 other airports and prepared landing sites in the U.S., we are *not* landing at Wittman Field during the largest airshow in the world. We don't need to be landing long to avoid another airplane landing short, "aiming for the red dot" or some such. We should fly normal patterns to the normal touchdown zone, extending or going around if needed to maintain safe separation from those with whom we share the airport.

**We fly airplanes to fly fast** in most cases, but we don't need to be in so much of a hurry we don't follow standard pattern procedures.

Questions? Comments? Let us know, at [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net)



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

Our discussion on fuel management continues. Reader Mike Massell writes:

As always Tom, a great publication. Excellent work. One more thing regarding your fuel: I wonder how many pilots, if any, ever look at the [fuel] gauges after a fill up and **compute the total amount of fuel** (what they indicate versus what the aircraft can hold)? Consider this: If the aircraft can only hold 12 gallons for example, but the gauges say 13, would you figure that you have 13 [gallons] onboard and do your fuel calculations [based on] that number? If so, you might find yourself running short. Just a thought as it can only hold what it was designed to hold, and no more.

Thank you, Mike. Another example of this *FLYING LESSONS* axiom: **Fly the airplane you're flying, not the airplane you wish it to be.**

More on fuel...

From you friendly neighborhood anonymous aviator. Tom -- excellent series of exchanges on fuel management, fuel starvation accidents and avoidance. Two items stick out in my mind as essential to any philosophy or practice, and we've heard 'em before:

First: [you] can't do anything accurately or consistently without knowing

- (a) what you actually consume and
- (b) how much you actually have to consume.

For the latter, the only way to accurately assess that number is testing--and yes, a selective, controlled dry-tank exercise for each tank. How else will you learn that the 30-gallon tank lets you use 28, for example -- when the POH says "Useable fuel: 30 Gal."

[Second]; the only consistently accurate way to apply a consumption figure to that supply knowledge is some sort of totalizer or fuel-metering system. Knowing book numbers is only a good start, but being able to see, accurately (or better, a bit conservatively) what the engine uses, has used and has left to us, in real time, can make the other plans work. If the totalizer works with a GPS, better still -- but [this is] not necessary to get the basic benefits.

An excellent totalizer can be installed for less than the cost of about 10, 12 hours of flying in a lot of GA airplanes; the costs of misjudging fuel is always higher.

But even with the best instrumentation available and concrete knowledge of supply and the best-intended philosophy available, it still takes discipline -- the steel to ignore those nasty little voices that urge you to go beyond your comfort zone *just this once*.

David Heberling comments on last week's *LESSONS* about accidentally moving one control when you think you're moving another, specifically the Citabria in which the front-seat student adjusted the trim full nose-down when he was trying to advance power to correct for being low on glidepath:

I was taught that when **on final approach, your hand should be on the throttle(s)**. That way, if you need to fiddle with the trim, your hand has to go from the throttle to the trim control and then back again. This is especially true on short final where no trim adjustments should be made. That is what probably made this a difficult situation for the flight instructor as it happened very close to the ground. Given sufficient altitude, I think the instructor could have overcome the trim by pulling back on the stick and adding power, then retrimming as needed.

You are correct that all pilots should familiarize themselves with the particular layout of the power and trim controls for the airplane they are flying. Flight instructors should emphasize this issue, especially where a mistake can be easily made. I know that when I first got my [Beech] Bonanza, I grabbed the wrong control when in cruise. In this case, it was the throttle I started to dial back instead of the mixture as I was trying to lean the engine. I soon realized my mistake and corrected myself. I remember reading stories by Ernest Gann. Those pilots had to **sit in a cockpit with a blindfold over their eyes and be able to reach for everything without error**. This would be a good exercise for any pilot even today.

I had to pass a "blindfold cockpit check" before I could take my first instructional flight in U.S. Air Force pilot screening. Indeed, we should restore this practice to initial training and type checkouts.

Writing about American Champions last week, I expected to hear from aerobatics instructor Anthony Johnstone, who teaches in a Decathlon. Sure enough, Tony chimes in:

Enjoyed your newsletter as always! The lead article on the Citabria accident was particularly relevant to me, I have around 1100 hours dual given in the Decathlon, [and] the trim control has always been an issue.

Whenever I start with a new student, **I stress the possibility of exactly the scenario described**, having the left hand inadvertently resting on the trim during approach and landing, and potentially applying full down elevator trim when meaning to apply power. Both knobs are identical and no more than a hand-width apart.

Incidentally, the trim is not accessible from the rear (instructor's) seat, at least not with your hand when strapped in. I use my left toes to move the trim, I always warn the student ahead of time (particularly if they are female!!) that if my foot comes up along their thigh I am not being excessively familiar!

The older Aeronca/Champion aircraft had a similar trim system, but the knob was located on the left cockpit roof and was reachable from both seats. When the glasshouse roof was added the control was moved to the present position with the potential for the described accident. I did discuss this with the American Champion guys at Oshkosh some time back, making the suggestion that the knobs might be made different shapes. But nobody really seemed too interested. I (and, I suspect, most other experienced Citabria/Decathlon instructors) **make a point of checking the student's hand is on the throttle as we turn final**. So far nobody has managed to drive us into the ground but it is always a possibility.

Your other comment about the [Beech] Sierra was also timely. I was giving a flight review in a [Piper]

Cherokee Six some time ago. As we were climbing out the owner/pilot reached over and started rolling back the mixture vernier control. I initially assumed he was intentionally leaning (it was a hot Kansas day) but he kept moving it and frowning at the tachometer. You guessed it: he thought it was the prop control, which is identical and right next door. Both were black in colour, it would certainly be an easy mistake particularly if not flying very often. Most modern airplanes seem to have colour-coded and different shaped controls, but these are the things that can reach out and bite you if you don't pay attention!

Thanks, Tony. Good reminders to think about last week's *LESSONS* often. Incidentally, I agree there is merit in differently-shaped engine (and trim) controls so the pilot can identify the correct knob by feel. I think color-coding the knobs looks great but is more cosmetic. We're not likely to look at the engine control when moving it, although I suppose it might help if you had doubt and made a quick scan to cross-check the control type.

Reader Tom Allen observes:

Sometimes I think you fly around with me and see all the mistakes I have made. My flying buddy and I have both grabbed the mixture when intending to change the power setting and it usually is on final.

Maybe I've just made some of the mistakes too, Tom. Read on...

Reader Dan Secord commented humorously on my typographical error last week, about the propeller control of the Sierra being to the left of the throttle instead of the right, which I corrected in a follow-on email. Dan quips:

Maybe that's why you only owned the airplane for 6 weeks?

I guess I deserved that <g>. No, I did not crash the Sierra, or do something stupid in it. About six weeks after becoming partners in N400LE with *FLYING LESSONS* reader Kelvin Roots, whom I believe now flies a Piper Seneca, I was laid off from my job. My first call was to tell Kelvin I needed out of the partnership. Although I've done a lot of things worthy of writing *LESSONS* about, crashing is not one of them! Thanks for a good laugh, Dan!

Readers, your inputs are always welcome. [mfitsurvey@cox.net](mailto:mfitsurvey@cox.net).

**Share safer skies. Forward *FLYING LESSONS* to a friend.**

***Flying has risks. Choose wisely.***

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