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FLYING LESSONS for September 18, 2008

suggested by this week's mishap reports

FLYING LESSONS uses the past week's mishap reports as the jumping-off point 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.

Feel free to forward this message for the purpose of pilot education. *FLYING LESSONS* is also available in PDF through a link in the left column at www.thomaspturner.net.

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This week's lessons:

This week saw the first known instance of fuel starvation or exhaustion in a “glass cockpit” general aviation aircraft. AOPA has previously reported, and Mastery Flight Training research has confirmed, that to date the advanced fuel monitoring capability of integrated glass cockpit technology has seemed a panacea to the scourge of “running out of gas”.

Unfortunately we see again that cockpit technology is a fantastic aid to status monitoring and risk management, but it is not the ultimate solution to judgment-related mishaps.

Avoid fuel starvation by moving the “Fuel tank(s)—selected for landing” step of your Before Landing checklist instead to the beginning of your Descent checklist, confirming you have selected a tank with sufficient fuel for descent, approach, landing and a possible go-around or missed approach. Plan your flights to ensure you'll have enough fuel remaining in a single main tank at destination to be able to do this, with a healthy reserve. If you can't arrive in such a fuel state, change your power setting or fuel management technique, or resign yourself to the necessity of planning a fuel stop to ensure you can.

It's amazing how many fuel-related events occur very near or even on the destination airport. If you don't have sufficient fuel in your selected tank for all landing and go-around/missed approach functions, then frankly you've not done a good job of preflight planning or in-flight fuel monitoring and management.

It can happen even to the best-trained of us. Read about the “[Gimli Glider](http://en.wikipedia.org/wiki/Gimli_Glider)”, an Air Canada Boeing 767 that exhausted all its fuel and glided to land on a former military airstrip...carefully reviewing the chain of human events that led the crew to believe it had much more fuel than was actually on board.

See http://en.wikipedia.org/wiki/Gimli_Glider.

NTSB has stated it is taking a close look at volunteer charity flight safety as a result of three fatal accidents in this type of operation this year. Although this week's fourth event was not fatal, the fact the charitable flight organization was specifically named in the FAA preliminary report suggests that this focus is indeed under way.

All pilots must use extreme care to plan and fly within the safe margins of the airplane's performance envelope. When pilots extend their valuable services to unknowing and trusting persons in need, however, there is an even greater responsibility to act conservatively. It does no one any good for a pilot to generously offer aerial transportation to persons who cannot otherwise afford it, only to risk life, and tarnish the charity and all general aviation, by attempting to stretch beyond the airplane's, or the pilot's, capabilities.

Questions? Comments? Send me a note at mastery.flight.training@cox.net.

WHAT DO YOU FLY?

To help me better focus *FLYING LESSONS* to be even more relevant to you (and just because I'm curious <g>), please **send me an email** telling me

- **What type of airplane you most commonly fly**, and
- If you fly professionally *and* privately, **what type of private airplane you most commonly fly**.

Send your email to me at mastery.flight.training@cox.net. *Thanks!*

DEBRIEF—Reader comment on past *FLYING LESSONS*

We've had lots of good reader comment again this week. Here's some:

Cockpit alarms and noise-canceling headsets: Regarding the recent report reader Lew Gage chimes in:

Regarding the noise canceling headsets: I wrote a column regarding this subject about 20 years ago. I received more comments on the article than any other I have ever done. About 50/50 on agreeing and disagreeing. Of course what is someone going to do, say "I screwed up getting one of those" when they just laid out \$1000 of those big 20 year old dollars for a [noise-canceling] set?? Unless the gear warning is plugged into the headset these can cause someone not quite hooked up to their machine to miss that final advice about the gear.

While reader Justin Graff has other ideas:

I have not found that I do not hear the gear warning horn or other cabin devices (CO monitor, GPS beeps) with my...noise canceling headset. In fact, I think noise-canceling helps me hear higher frequency noises from the engine or airframe that might be drowned out otherwise. It clearly also helps with radio reception intelligibility. I have to think over time that it will help reduce low frequency hearing loss, though it is high frequency hearing loss that is usually the problem in the elderly causing problems commonly in understanding speech.

I'm only 41 and have good hearing, which is out of the norm for the typically elder [aircraft]-owner crowd. Perhaps some have warning horns that have become quiet with age?

I've told you once of [a maintenance provider] dragging the tail pipe of my new-to-me Bonanza on the runway. They blamed it on a non-functional gear horn rather than hearing. I agree that there are many clues, particularly a disconnect between IAS and usual power setting that should make a...pilot aware there's not something right. Their test pilot, however, flew many different airframes and was thus insensitive to this.

Thanks, gentlemen. The bottom line for all pilots is to verify that all cockpit audible alarms (stall warning, gear warning, etc.) are obnoxiously obvious in flight and while you're wearing your headset-of-choice. Please note I'm a big advocate of proactive hearing protection, including wearing earplugs when using power tools and mowing the lawn, in addition to in flight. But if a warning horn isn't enough to wake the distracted over the noises of flight, do something *now* (have warnings wired through the intercom, increase the horn's volume, discontinue use of noise canceling features near the ground, or *something*) to change that before you're in a situation where you need a last-minute warning you can't hear.

Wake turbulence report: Last week's *FLYING LESSONS* included a reader's report on his theory the recent, fatal Angel Flight tragedy may have resulted from a wake turbulence encounter. Justin Graff addressed this as well:

[I] appreciate the invitation to listen and watch from home the events leading to a crash. I'm no accident investigator, but even before turning downwind [the accident pilot's] voice sounded a little stressed. It looks to me like he flew through the localizer smoothly, then overcorrected back to the left. I would be more suspicious that he got distracted by this and got himself into a pitch oscillation, without having to invoke wake turbulence. What do others think?

To which I replied:

Well, that's what I think, too. It's comforting to be able to blame something on wake turbulence, especially in the clouds, because then it's *someone else's fault*. Personally, I still think this looks very much like a scenario I've seen a LOT in training--a pilot has loaded but not activated an approach into a GPS, the box does not indicate an interception and the pilot flies through the localizer, and then the pilot's all caught up in trying to reprogram the GPS while simultaneously trying to reintercept the localizer. If the pilot is using an autopilot coupled to the GPS it actually makes matters worse in that "uncertain" time when the GPS is being reprogrammed and the autopilot is opposing the attempt to reintercept the localizer. That's what I wrote about [in *FLYING LESSONS*] when this mishap first occurred. However, it IS possible wake turbulence was a factor, and at this point [that reader's] theory is as good as mine.

I'll echo Justin's question: What do *you* think? Let me know at mastery.flight.training@cox.net.

Pilot-induced oscillations: Lew Gage addressed the *FLYING LESSONS* on PIO in his response as well, saying:

Since most of us do not land on minimum length runways, and some of the broken nosewheels occur on long runways, training in a tail wheel airplane doing [full-] stall landings where it is "back, back, back" with the stick until it is FULLY back before touchdown is also good training in a tri gear airplane. Also, 30 minutes in the airplane (as you well know) is worth a ton of books about how to fly.

Thanks again, Lew.

DVD from MFT!

You know you've heard it: there are those who have, and those who *will* have a gear up landing. Become one of [Those Who Won't](#) with this DVD detailing **10 tips for avoiding landing gear-related mishaps**. By Master CFI Thomas P. Turner, the 15-minute DVD is the result of over six years of studying why pilots make landing-gear mistakes. Great for airport, flying club and FAASTeam safety meetings. \$25 plus shipping and handling [online](#) or by calling 316-945-1700.

See <https://secure5.webfirst.com/ABS/Store/#ThoseWhoWont>

For piston Beech pilots

Many *FLYING LESSONS* readers fly Beech airplanes and are members of the American Bonanza Society. I look forward to seeing many of you at the ABS Convention in Lexington, KY next week. Don't forget to read and follow the [special flight procedures](#) for KLEX during this period, and to exercise great care--and great risk management—getting to and from Lexington.

For more see www.bonanza.org/Events/2008/Convention/KLEX_procedures.cfm.

The September 18, 2008 Weekly Accident Update is now posted at www.thomaspturner.net, including these reports:

- A Duchess' landing gear collapsed....
- A G36 landed hard after suffering fuel starvation....
- A B55's gear collapsed on landing....
- A Twin Beech's landing gear collapsed during taxi....

For more information, commentary and analysis see the Beech Weekly Accident Update link at www.thomaspturner.net.

See www.thomaspturner.net/WAU_2008.htm

Fly safe, and have fun!

I welcome your comments and suggestions. Contact [Mastery Flight Training, Inc.](#)

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If you received this message directly (as opposed to through a digest or chat room) and wish to be removed from the *FLYING LESSONS* list, [tell me](#).

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Holder of an ATP certificate with instructor, CFII and MEI ratings, a Masters Degree in Aviation Safety, and **2008 FAA Central Region CFI of the Year**, Master CFI Thomas P. Turner ([resume](#)) has been Lead Instructor for FlightSafety International's Bonanza pilot training program at the Beechcraft factory; production test pilot for engine modifications; aviation insurance underwriter; corporate pilot and safety expert; Captain in the United States Air Force; and contract course developer for Embry-Riddle Aeronautical University. He is now the Manager of Technical Services for the [American Bonanza Society](#). With over 3500 hours logged, including more than 2200 as an instructor, Tom writes, lectures and instructs extensively from his home at THE AIR CAPITAL--Wichita, Kansas.



See www.thomaspturner.net/TTweb.2008.0619/Resume.htm