



# FLYING LESSONS for September 23, 2021

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 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:***

**While compiling this week's update** of piston Beechcraft mishaps—the [Beech Weekly Accident Update](#), which I've published since 1998—I added this FAA preliminary report:

AIRCRAFT TAXIING STRUCK A FENCE POST, MORGANTOWN, WV.

See <http://www.mastery-flight-training.com/beech-weekly-accident-updat-2.html>

**When adding this event** to the record I noticed there have been eight reported cases of Beech piston airplanes taxiing into an obstacle or another aircraft so far in 2021: three Bonanzas, three Barons, one Travel Air twin and one Beech Skipper. An additional Bonanza was struck by another aircraft while the Bonanza was unoccupied on the ramp.

**Nine reports**, about one per month so far. And, these are not mishaps that meet the reporting requirements of [NTSB 830](#). There is no requirement to report them at all...suggesting there may have been additional cases in which the pilot knew there is no reporting mandate, or in which the pilot simply chose not to report it whether or not he/she knew it was not required.

See <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VIII/part-830>

**It made me wonder:** how frequent are taxi collisions? Are they as common in other types of airplanes as well? **More importantly**, what should we be doing to prevent them?

**An internet search** revealed [this article in Aviation Safety](#). In it, the author writes:

A study of taxi accidents found an average of 50 accidents per year when pilots plunk slow-moving airplanes into stationary objects or get knocked over by the wind. To examine taxi accidents, we ignored anything that happened from the time the airplanes began their takeoff run to when they left the runway at taxi speed at the conclusion of the landing roll.

**Part of the record** explored in the article pertains to airplanes blown over by the wind. The author discusses the need for proper crosswind taxi control inputs to resist being tipped. But the unnamed author also addresses the topic of this week's LESSONS:

Tied with winds at 18 percent of the 149 accidents we analyzed [i.e., **27 events over three years, or nine per year**] were collisions with ground obstructions, notably buildings, poles, fences, trucks and parked airplanes. We eliminated the accidents that occurred as the pilot was maneuvering after making an off-airport landing, such as to a road.

The biggest hazard here was night operations on dark ramps where the airplane struck an unseen object. Given the short life of the taxi/landing lights installed in light singles and the poor lighting on most GA ramps, this is perhaps understandable. But **many of the accidents happened in broad daylight** when the

pilot either misjudged the wingtip clearance or was focusing on an obstruction on one side of the airplane and struck something with the other wingtip.

Hitting buildings and vehicles were about evenly distributed, with hangars and fuel trucks taking the brunt of the abuse. Poles, taxiway signs, fences and trees were also well represented.

Frustrating to many owners is the fact that **parked airplanes also take their share of abuse** as taxiing pilots either lose control or inadvertently smack into a prop or wingtip of an airplane that's unoccupied. For the innocent airplane, that often results in a damage history that devalues the airplane despite a competent repair.

Pilots frequently blamed the lack of depth perception on faded or missing taxiway striping, unfamiliarity with the airport or poor lighting.

However, investigators frequently found those claims hollow, blaming most of the accidents on impatient **pilots wanting to squeeze through an area of uncertain width** instead of waiting for the fuel truck to move, for example. **Another common error was for pilots to taxi off the pavement** and run into a sign or other obstruction in the grass, or head down an embankment.

**Progressive taxi instructions from the ground controller or a little study of the airport layout in advance would make most of these accidents history.**

See <https://www.aviationsafetymagazine.com/features/taxi-smack/>

**The Aviation Safety article** was published in 2002. The average nine reports per year then have been matched in only two-thirds a year and only in one model line of aircraft. Is this an anomaly, or are there that many more reported taxi mishaps now? What has changed since 2002 to account for this apparent increase?

**I am not blaming** a particular product, merely describing something insurance executives have told me years ago. Garmin's wildly popular GNS 430 moving map GPS/comm radio was introduced in 1998. By 2002 this "box" was beginning to become common in high-end piston airplanes. Now this device and all those that have followed, from a wide variety of manufacturers, are ubiquitous in light airplanes all the way down to Light Sport.



**How might this be** connected to an apparent increase in taxi accidents? GPS navigators require programming. They flash warnings that we naturally want to view and clear. They are mounted on the panel, drawing our eyes and our attention inside the airplane and away from what's around the aircraft.

**Another great technology** that still presents a distraction hazard is the georeferenced taxi diagram. A GPS-driven symbol representing your airplane is overlaid on an airport diagram for instant orientation and easy planning your route between the ramp and the runway (or vice versa). It's especially helpful on airports with complex taxiway systems.



**The down side** is that these devices do not depict other airplanes or objects on the taxi, and may not have the fidelity to keep you from taxiing off the pavement.

### The **LESSONS?**

1. Keep your eyes outside the airplane while taxiing. Program the GPS before you begin to taxi, or taxi to the runup area and come to a complete stop before setting or clearing out messages on the GPS/comm.
2. If you use a georeferenced taxi map to plan your taxi route and track your progress while moving on the airport surface, use the display like you'd use a GPS in your car while driving on a busy interstate highway: scan the device quickly for situational awareness and to fix and confirm your position relative to runways and taxiways. But keep your eyes outside the airplane 95% of the time or more. Scan your position, but keep your eyes outside the airplane.

Suggestions? Questions? 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*:

Several readers who sent comments about last week's Debrief like this from Stan Stewart:

For reader Rick McCraw and anyone else flying without a voltmeter, Sporty's has a cigarette lighter type USB outlet (plugs into the cigarette lighter type power outlet) which includes a voltmeter and operates on 12 or 24 volt systems. Its LED screen blinks when voltage goes below 12 volts or between 18 and 24 volts, as appropriate. I recommend [this](#) for anyone without a voltmeter and for pilots who use rental aircraft. Cost is \$18.95.

There are several options available to add a bus voltage indication without an actual installation. Thank you, Stan, and everyone who sent similar notes.

See: <https://www.sportys.com/flight-gear-dual-usb-quick-charger.html>

A reader who asks to remain anonymous writes this note in response to my [July 8 LESSONS](#) concerning the Controlled Flight Into Terrain (CFIT) crash of a G36 Bonanza in extremely high elevation in Colorado:

I write this with a heavy heart but there are *LESSONS* to be learned. I have always enjoyed your newsletter and the way you present topics for discussion. It has changed my flying.

I wish this to remain anonymous. This past week my brother was killed in a terrible accident in [location] for you if you want to investigate but please not in publication. I believe his accident was preventable. Four lives were lost. In the past three weeks or so another fatal accident occurred in my area with a Skyhawk based in a nearby mostly flat state. They filled up here in the afternoon on a very hot day at 3200 feet elevation with two passengers, and crashed into the hillside after entering a canyon nearby. [The] cause [is] still under investigation but likely to be too heavy to climb out in a high density altitude with a low performance plane. No one around here would take a loaded C172 into our mountains.

My brother died in an older Mooney M20J as a passenger with the owner/pilot and two passengers. The plane was based in the LA area and flown a lot there but apparently little in mountainous terrain. They were going for pleasure to see some real estate. My brother was a Private Pilot working on his instrument rating. I don't know the owner pilot except it is said he had more than 2000 hours and had owned the plane a long time.

That strip is under 2500 feet, in a riverbed at around 2500 feet elevation and they took off at noon with four passengers. It is surrounded by hills and trees. It was a witnessed accident per news reports, and the plane barely took off at end of runway, I believe to the south. It then tried to turn right and clipped a tree and turned over. There was little left of it after an intense fire.

I think these two accidents share **the problem of pilots in flat country, low altitude, minimal terrain issues, not understanding the real difficulties of mountain flying** (not backcountry) with density altitude performance issues, longer takeoff distances, and hazards all around the airstrips at small airports in the mountains. Then there is poor visibility from smoke with my flight today full on IMC despite a sunny day due to all the fires.

I own a modified 300hp STOL and IFR capable Cessna 182 for backcountry [flying] and I am instrument rated and train constantly. The Mooney appears to be a fast, fuel efficient plane but with small engine and a 1000 pound payload, but only 675 pounds with [a] full [fuel] tank. With four adults in the mountains, unknown temperature, that is cutting it very close or, more likely, they were overweight. With a high density altitude of possibly 4-5000 feet, the POH rates takeoff distance at or greater than runway length (I

downloaded a 1978 Mooney POH online). I don't know the temperature at the time but has been hot all over the west. And those distances are with a new engine and test pilot as we all know.

**I hope others can learn from these accidents.** The tragedy is not just his death but the forever effects on wife, children, parents, siblings, friends, coworkers. It is truly a tragedy that 'keeps on giving'. While NTSB has yet to rule on both of these, they appear to be similar and fully preventable. Maybe others can learn.

Everyone makes mistakes and pilots get complacent as the hours build up without incident, myself included. But the consequences may be enormous.

Thank you for your newsletter and wisdom on so many topics.

I'm very sorry for the loss of your brother, and for all who were affected by the accidents you describe. Flying at high density altitudes is very different from low-elevation airports and terrain. Programs by the [Colorado Pilots Association](#) and others are invaluable to learning the skills needed to safely operate in mountains and extreme density altitudes. Part of these skills involves strict adherence to weight and balance limitations, and operating the airplane as light as possible to maximize the available performance in this environment. Thank you, reader.


See:

<http://www.mastery-flight-training.com/20210708-flying-lessons.pdf>

<https://coloradopilots.org>

Questions? Comments? Send them to [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).

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I will not publish *FLYING LESSONS* next week, but I'll be back the first week of October.

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Thomas P. Turner, M.S. Aviation Safety  
Flight Instructor Hall of Fame 2015 Inductee  
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2008 FAA Central Region CFI of the Year  
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