



FLYING LESSONS for November 30, 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:

A reader wrote:

Tom, I wanted to let you know that I had a gear up landing in my Baron last week. The FAA and the local shop are getting ready to put the plane on jacks to look into a root cause. My normal mechanic will probably come over to look at it as well. I'll definitely keep you posted as to what you find so you can pass it along to other Baron flyers.



Two things are obvious from the raw [video](#) posted by a witness on FaceBook (and forwarded to me by the pilot):

- The amazing display of sparks (amid an impressive scraping sound) beneath and below the airplane as it slid down the runway. Twilight conditions made the sparks very visible. Although we do not see the sparks in a full-daylight gear up landing, they are there even in the bright light of day.
- The speed and efficiency with which the pilot, an adult passenger, and two young children evacuated the aircraft and moved well away, toward first responders. The visible sparks and smoke in the cabin, as reported by the pilot, emphasized the need to evacuate.

See: <https://www.facebook.com/christopher.e.oliver/posts/1721667184511397>

Although the sparks may not be as visible in full daylight, there is good reason to swiftly evacuate after a gear-up landing. Although it is rare, I have heard of several cases in which post-

gear up airplanes erupted into flame as much as half an hour after ending their runway slide (all Barons, but perhaps that's because I am entwined in the piston Beech community).

The rapid evacuation was no accident—it could only have been done with forethought, and then with active direction by the pilot.

In a local [television news video](#), the pilot is quoted as crediting annual training for the success of his landing.

See: <https://www.facebook.com/LSeabrookWFTV/videos/1701951856515657>

When the gear would not extend either normally or manually using the emergency extension procedure, the pilot told me, he used his training to plan and execute the emergency landing. This included a decision to divert from his destination, his home airport, to the Daytona Beach airport because of its rescue response capability and the length of its runways.

Investigation revealed a pre-impact mechanical failure of the landing gear motor. When the motor seized, the design of the Baron's gear extension system made it impossible to put the wheels down. Fortunately the gear was fully up when the failure occurred, the pilot told me, although he quips that he would prefer it to have stuck down.

This event serves to remind us that despite a pilot's actions machines sometimes break. When that machine is an airplane the pilot will have to make many decisions, perform many actions, and above all, uphold his/her responsibility to passengers—all while flying the airplane.

The pilot of the Baron was ready. Would you be?

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



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Improving record

AVweb's Mary Grady [recently reported](#) on a November 21, 2017 NTSB review of 2016 transportation mishaps. Ms. Grady writes:

The accident rate in general aviation dropped below 1 fatal accident per 100,000 flight hours in 2016, for the first time in 50 years, the NTSB reported on Tuesday. **Overall, aviation deaths decreased slightly**, from 416 in 2015 to 412 in 2016. Nearly 94 percent of those fatalities, a total of 379, occurred in general aviation accidents. Twenty-five people died in accidents in commuter and on-demand aircraft, including charter, air taxi, air tours, and medical services, operating under Part 135. The GA decrease occurred while other forms of transport — cars, trains, and boats — all showed increases.

Overall, general aviation accidents totaled 1,266 in 2016, the NTSB says, and 213 of those accidents resulted in fatalities. Based on an estimated 21.3 million flight hours, the preliminary fatal accident rate for GA in 2016 is 0.989 accidents per 100,000 flight hours. **The total number of fatalities in GA was up slightly from 2015, according to Bloomberg News, but the lower rate reflects an increase in the number of hours that GA aircraft flew.** There have been no fatalities for U.S. airlines since 2009.

See: <https://www.avweb.com/avwebflash/news/NTSB-GA-Safety-Best-In-50-Years-229951-1.html?ET=avweb:e3861:278475a:&st=email>

This is excellent, welcome news. I look forward to a more detailed breakdown of the general aviation rate by type of operation—**corporate** (professionally flown, usually turbine and often two-pilot crews), **business** (flown by a business owner or other pilot for whom flying is not their primary profession, increasingly in turbine aircraft but frequently in piston types, all almost exclusively in single-pilot operations), **instructional** flight, and **personal/recreational** use, often flying the same types of aircraft used in business aviation and sometimes in support of a business, but usually subject to fewer operating restrictions than other types of general aviation flight.

Data I've seen presented by the NTSB show that corporate flight operations make up more than 80% of all general aviation flight hours. The equipment, pilot training and redundancy of corporate operations have resulted in almost no fatalities in recent years—skewing the overall GA record downward (preliminary reports are that 2016 corporate aviation fatal accident rates are up). While the corporate and business fatal accident rates have been decreasing slightly (at least through 2015), the personal/recreational rate has been trending upward for the last several years...at about four times the overall GA fatal accident rate.

It seems the personal/recreational fatality rate may also have decreased, for the overall rate to have dropped when the majority of GA flying was already virtually accident-free. If that is the case:

1. *Excellent!*
2. So far this improvement is a one-time event. A one-year improvement may be an anomaly, or it may be the beginning of a trend. To date we have no way to know.
3. We cannot let this improvement lull us into complacency that sets us up for an increase in fatal accidents. If the improvement proves to be a long-term trend, it's because we've changed things and have a good result. To keep the trend going **we need to continue to be focused on risk management and recurrent training.**

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