



# **FLYING LESSONS for October 15, 2020**

*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 a scenario unfolds. 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 tragic, fatal mishap** highlights the need to recognize and respect the performance and limitations differences between airplanes and operations...and to recognize limitations and motivations in yourself.

### ***From an NTSB preliminary report***

On September 20, 2018, a Cessna 150H sustained substantial damage when it was involved in an accident near Festus, Missouri. The pilot and passenger sustained fatal injuries.

The pilot and his son were relocating the airplane from New York to Festus Memorial Airport (FES), Festus, Missouri. Fuel receipts showed that the pilot refueled the airplane three times during the trip. The first stop was Chautauqua County/Dunkirk Airport (DKK), Dunkirk, New York, about 19 miles from the departure airport, where the pilot obtained 13.4 gallons of fuel. The second refueling stop was about 226 miles away, at Knox County Airport (413), Mount Vernon, Ohio, where the airplane was fueled with 16.56 gallons. The third refueling stop was about 174 miles away at Greensburg Municipal Airport (I34), Greensburg, Indiana, where the airplane was fueled with 13.62 gallons at 1906. The distance from I34 to FES was about 275 miles.

The pilot and passenger communicated with the pilot's fiancée via text message during the trip. They told her that the airplane was experiencing a "small electrical problem" and stated that their estimated time of arrival (ETA) would be determined "at the next fuel stop... just before dark." After their fuel stop at I34 they estimated their ETA at FES would be about 2215 [local time]. They then asked her to ***stand on the end of the runway with a flashlight*** to help guide the airplane in for landing.

They also stated that they would attempt to activate the airport lighting system with a handheld radio, but they were ***unsure if the radio had enough battery power*** to perform the task. During the last leg of the flight, they indicated that they had "picked up a head wind" and further extended their ETA until 2220 ***[10:30 pm, at least two hours after sunset]***.

The pilot's fiancée reported that she went to the end of the runway with the flashlight on, and the pilot attempted to land, but she was unsure if the airplane touched down on the runway due to the dark night conditions. She further reported that ***the airplane was "blacked out"*** and did not have any exterior lights on.

The last text message from the pilot stated, "keep light on." After several minutes of not seeing or hearing the airplane, she tried contacting the pilot multiple times with no response before contacting law enforcement. The wreckage was located the following morning in a tree-covered swamp about 1/4 mile southeast of the departure end of runway 19.

## Pilot Information

At the time of the accident, the 56-year old Airline Transport Pilot was employed as an airline pilot. He previously worked as a helicopter air ambulance pilot and a military helicopter pilot. The pilot held a mechanic certificate with airframe and powerplant ratings. According to the pilot's employer, the pilot's most recent flight with the company was on September 19, 2018 [the day before the crash]. The pilot's last check ride occurred on August 24, 2018. Flight time: (estimated) 6733 hours (Total, all aircraft), 1122 hours (Total, this make and model), 6162 hours (Pilot In Command, all aircraft), 217 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft).

## Aircraft information

The Cessna 150H pilot's operating handbook (POH) stated that the maximum capacity for both fuel tanks was 26 gallons total (13 gallons in each tank). The POH further stated that the usable fuel amount for all flight conditions was 22.5 gallons total, and **the unusable fuel amount was 3.5 gallons total.**

The Textron Aviation Pilot Safety and Warning Supplements discussed electrical power failures. This document states in part:

The pilot should maintain control of the airplane and land when practical if an electrical power loss is evident.

If an electrical power loss is experienced, continued flight is possible, but should be terminated as soon as practical. Such things as fuel quantity and engine temperature indicators and panel lights may no longer work.

The wreckage was situated about one quarter of a mile south east of the departure end of runway 19 and about 440 ft above mean sea level. Flight control continuity was established for the airframe. All structural components of the airplane were located at the accident site. The airplane sustained substantial damage to both wings, the fuselage, and the empennage. Both wings sustained substantial impact damage from contact with trees. The fuel tanks remained intact, and **a total of about 2.25 gallons of fuel were extracted from the two fuel tanks.** The propeller blades did not exhibit chordwise scratches or torsional deformation.

The alternator and the voltage regulator were examined and functionally checked. The alternator performed normally with no malfunctions or failures; **the voltage regulator was inoperable. The voltage regulator was manufactured around 1976.** There was no life limit or replacement interval specified. Review of the airplane's maintenance records did not indicate how long the voltage regulator had been installed on the accident airplane.

With the exception of the voltage regulator, no preimpact mechanical malfunctions or failures with the airframe and engine were noted.

## Conditions

Conditions at the accident site were Visual Dark Night Conditions, sky clear with 10 miles visibility and five knots surface wind. According to information from the U.S. Naval Observatory, sunset at FES on the day of the accident occurred at 1902 and the end of civil twilight was 2206. Moonrise was 1656 waxing gibbous with 83% of its visible disc illuminated.

**We don't know** what specific pressures the pilot was under to make it to Festus that night. The ATP-certificated pilot had come off an airline trip the day before so chances are good he was not scheduled for the next day. We don't know that for certain either, and given that many airline pilots live far removed from their domicile (airline place of employment) and "commute" to work, it's possible the pilot had only this one day to get the Cessna to Festus and then to get back home to New York. Any number of pressures, external or put upon the pilot by himself, could have been influencing the pilot to complete the trip that night.

**The pilot's son**, the passenger, had a current FAA Third Class medical certificate but "did not hold any airman certificates and did not have any reported flight time on the date of his [medical] examination." A photo in [an online report](#) shows the pilot in his airline uniform and the son apparently wearing his father's airline uniform jacket and hat.

See [http://www.kathrynsreport.com/2020/08/fuel-exhaustion-cessna-150h-n7152s.html?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+KathrynAviationNews+%28Kathryn+Aviation+News%29](http://www.kathrynsreport.com/2020/08/fuel-exhaustion-cessna-150h-n7152s.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+KathrynAviationNews+%28Kathryn+Aviation+News%29)

**We might speculate** that the son was planning to begin his pilot training in this Cessna 150 in Festus. Alternately, the presence of the pilot's fiancé, apparently living near the accident site in Missouri, might suggest differently. **Such is the nature of NTSB investigations: they are very good at reporting what happened at the time of the accident, but investigators do not have the resources to develop the full picture that includes motivations, fatigue state, and other less scientifically discoverable factors.**

**We all want** to be the hero and complete a "mission" in a way that we can brag about with our pilot (and nonpilot) friends. So when electrical power faded and, behind schedule, the pilot knew he was going to land well after dark, he elected to continue on the last 275-mile (almost three-hour) leg to his goal. But at what point does a pilot think texting his fiancé to stand at the end of the runway with a flashlight while you land without lights or electrical power is a good plan?

**Some LESSONS** we might consider, prompted by this report:

- **It always takes longer than it takes.** Allow yourself time—*days*, in the case of a trip across a third of the continent in a slow, VFR airplane. If you can't comfortably complete your trip in a day, make sure you have more days to get it done.
- **Stress and fatigue are co-conspirators.** The longer it takes to get to destination the more stressed you may feel to complete the trip. At the same time cumulative fatigue makes you less capable of making good decisions, especially to stop and delay attaining your goal for another day. Just like the airlines do with their crews, set an arbitrary duty day limit so you stop before you go too long.

I personally use a **12-hour duty day**. If the final leg of my flight will be in **instrument conditions or at night, I use a 10-hour duty day**. My duty day is **alarm clock to engine shutdown**; it would be a very rare day when I fly all day, but it's not unusual for me to fly later in the day after accumulating fatigue doing other things.

- **Night flight is very different.** There is a palpable difference between flying in daylight and flying at night. Everything becomes more challenging not only when you can't see outside well, but when you also cannot see well inside the cockpit also. Anything you try to do with an airplane is going to be substantially more difficult after dark.
- **Rationalization is easy.** It's in our pilot culture to overcome obstacles. In and out of aviation, human factors research proves we will reject outright or even ignore completely evidence that does not support the actions we wish to take.
- **Doing the right thing can be hard.** Sticking to the requirements of airplane certification and flight-rules regulation should be clear-cut and easy. It is, if you uphold your command authority and discipline yourself to do the right thing. Trouble is, life—and ego—often gets in the way. That's why when I speak about **Mastery of Flight** I talk about mastery of **three things: the aircraft, the environment** (weather, airspace, etc.) **and yourself** (the human factors of decision making).
- **Experience comes from what happens to you.** The professional pilot of an aeromedical helicopter turned fixed-wing turbine airline pilot has tremendous experience. None of it, however, likely included landing a blacked-out Cessna 150 on a remote, dark runway while aimed at a single, small flashlight held in who knows what direction. Pilots may be able to correlate experience to new situations, but they are still **new**. Give yourself a huge margin, or better yet, use **your experience to avoid getting into situations** such as this.
- **Make time for adventure.** Don't shy away from epic flights like delivering a Cessna 150 from New York to Missouri. Instead, **make time to experience new things** in aviation. But **do it right**, with good risk management, good decision making, and good flying.

**I flew a similarly long** Cessna 150 cross-country back in 2015 that I described in [The Bugsmasher Chronicles](#). In it I detail 15 *LESSONS* I learned from the experience, including a downward adjustment to my duty day—all part of **the miracle of flying slowly**. Take some time to [relive the joy and the LESSONS of that amazing experience with me](#).

See <https://www.mastery-flight-training.com/20150827-flying-lessons.pdf>

Thank you to reader Pete Tracy for suggesting we derive *LESSONS* from this accident. Readers, what other *LESSONS* do you draw from this report? Have you ever found yourself in similar circumstances?

Questions? Comments? Experiences of your own to relate? Send them to [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).



See <https://pilotworkshop.com>

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

Reader Jack Spitler continues [a recent Debrief discussion](#) about uncontrolled airport radio methodology:

In my recent work in a Citation doing critical medical transport, most of our operations are to airports close to hospitals/patients in sparsely populated areas... i.e., small uncontrolled fields. At such places, inbound, I announce the usual distance, direction and runway intentions plus type and extra position calls in order to **alert listeners to performance differences** since these places see limited jet traffic. Outbound, for the same reasons, especially due to performance differences in climb and closure. Complacency due to our routine ops may omit the extra calls since we are “so important and we do this all the time.”

Many years ago at a small airport in Alabama a scheduled high performance airline departure complied with clearance to climb to 5000 in good VFR and call for radar ID, only to have an unfortunate interaction with a Cessna doing instrument proficiency hood work under VFR at an IFR altitude in the wrong direction with an non-qualified “safety observer.” There was lots wrong with the Cessna operation, but even properly done, **most GA operators do not anticipate 6000 ft/min climb rates from departing aircraft at small airports.**

Thanks again for your efforts.

Thank you, Jack. I appreciate that you make an extra effort to warn other pilots who may not realize how fast you'll climb (or descend), or how quickly you'll close on the airport from a 10-mile final. At nontowered airports it's all see-and-avoid, and not everyone will have the equipment to show up on ADS-B. Especially as business traffic seems to be picking up, with more companies using private aviation in lieu of airlines because of health concerns, we have a wider variety of aircraft performance at what are usually sleepy little airports. Fast or slow, look and listen.

See <https://www.mastery-flight-training.com/20201001-flying-lessons.pdf>

Reader Don Pevan sent a note a few weeks back about a *FLYING LESSONS* from a few weeks before that. Don writes:

One thing (that is along the lines of the analysis that you provide at the end of [\[the August 27\] LESSON](#) but not mentioned specifically) is that since there are many rules that are in place which apply only to the carriage of passengers, like three takeoffs and landings in the last 90 days, mandatory pretakeoff briefings, etc., **it is not a large leap from there to convince yourself that ALL of the pesky rules are meant for the protection of passengers and don't have to be applied to the pilot himself when he is flying solo.** You could think, "I can take myself flying without having made three takeoffs and landings in the last 90 days, so why can't I take myself flying without a medical and with half the gauges not working?"

That's a very interesting point, Don. We have wide latitude to fly as long as we do not expose passengers to those risks. But we still have boundaries, rules that are almost universally the result of a fatal crash where someone did what the rule now addresses. It's a freedom-vs-responsibility issue, with "responsibility" not only to ourselves but to future of private aviation as viewed by regulators and a risk-averse public. I'm a little concerned that the relaxation of Flight Review and other requirements during the COVID-19 National Emergency might have a similar effect.

See <https://www.mastery-flight-training.com/20200827-flying-lessons.pdf>

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

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## New webinars online

These webinars I delivered last week are available for free viewing in online archives:

### Flying Stabilized Approaches in Beech Airplanes

Delivered for the [American Bonanza Society](#) Air Safety Foundation and available [here](#). Although the focus of this program is on Beech piston airplanes, most of the information is applicable to any single-pilot aircraft.

### Beyond Proficiency: Five Exercises for Pursuing Mastery of Flight

Hosted by the [Smokehouse Pilots Club](#)

Most aviation training and evaluation is done to minimum standards. Safety, performance, and efficiency are greatly enhanced when you go beyond the bare minimums of proficiency and strive for mastery of the aircraft and the environment in which you fly. Here are [five specific techniques](#)—not often taught in the rush of certificate and ratings training—that will significantly improve your flying performance and help you pursue **mastery of flight**.

See:

[www.bonanza.org](http://www.bonanza.org)

<https://www.absweb.org/21.html>

[www.smokehousepilots.org](http://www.smokehousepilots.org)

[https://youtu.be/QITGs\\_QXPMg](https://youtu.be/QITGs_QXPMg)

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Thomas P. Turner, M.S. Aviation Safety  
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2008 FAA Central Region CFI of the Year  
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