



FLYING LESSONS for July 27, 2018

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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:

Some friends of mine flew together to Oshkosh. They had flown into an airport about an hour away the day before and planned to make the VFR run up to Wittman Field the next day.

According to one of the pilots I'll call **Pilot 3**, who was in back seats but had the most experience flying into Oshkosh, they checked the weather the morning of their final leg and found conditions at KOSH were variable. All recent reports were for marginal VFR conditions, with a broken to overcast ceiling averaging around 1400 feet and 10 miles visibility. Forecasts were for higher clouds, about 1800 AGL. Pilot 3 later told me they last checked the weather at 10 am.

The pilots had made this trip many times before. As a result of past experience they had set a personal limitation that they would fly at no lower than 1500 feet Above Ground Level (AGL) for their run up to KOSH. The ceiling at en route reporting points was as low as 1800 overcast...not quite high enough to permit them to maintain their personal minimum altitude and meet the required minimum 500 feet below the clouds. However, the Terminal Area Forecasts (TAFs) suggested they could fly a little lower than their personal minimum and still be legally VFR (operating under Visual Flight Rules).

Recall that METARs are observations of existing weather and TAFs are forecasts of what's to come. In both cases these weather products are only valid for an area five miles around the reporting point—usually an airport. Forecast weather *between* reporting points is reported on the Graphical Forecasts for Aviation, which recently replaced the traditional, textual Area Forecast with a series of pictorial, graphical forecasts.

Pilot 3 later told me if he had been Pilot-in-Command he would have had no qualms about maintaining their original 1500 AGL cruise altitude even though that would have put them in violation of VFR cloud clearance requirements. "Nobody is going to pop out of the clouds that close to Oshkosh," he told me after the fact. "Nobody is going to care, because the name of the game at Oshkosh is to get as many airplanes as possible on the ground." Pilot 3 encouraged the PIC to "go" despite the too-low-for-them clouds.

After once scaring themselves with airplane handling the pilots had also created a personal limit of 100 pounds of baggage. That was several years before, however, and over the years they had allowed this to creep back up even though the flight was loaded beyond what they considered safe. On this year's Oshkosh run the load in back was almost 150 pounds. But nothing had gone wrong when they overloaded themselves before, so they thought nothing of bringing along all this baggage.

The pilots boarded their aircraft and started up. They had taken their time reviewing their route and Oshkosh arrival procedures, and by now it was about 11:45 am. Awaiting takeoff clearance they had to wait further for a large transport category aircraft to make an emergency landing. While they waited **Pilot 2**, who was also in back, texted me on the grounds at Oshkosh telling me they were about to take off. I've not flown with these pilots before, but I was aware of their personal altitude minimum. I quickly checked the current KOSH METAR and told them it was 1400 broken with 10 miles' visibility, but that I could see rain coming in from the north.

Pilot 2 had copied a couple of other people on the text but all I saw were phone numbers, not names. So I do not know who they are. One of the unknown persons, probably a pilot also from what he or she wrote, replied something to the effect that a ceiling of 1400 was OK. I responded that a 1400 AGL ceiling meant they had to fly no higher than 900 AGL to maintain VFR cloud clearance requirements. That's 40% lower than their "personal minimum" cruising altitude. That also assumed that the ceiling was no lower anywhere along their route.

The heavy aircraft's arrival further delayed these pilots' departure. Around 12:15 pm I sent Pilot 2 another text: moderate rain had begun at KOSH and the weather was now 800 overcast, visibility 1 ½ miles.

That was almost the same time the flight took off visually toward Oshkosh. The airport was in Instrument Meteorological Conditions (IMC) and the VFR flight was heading right for it. Pilot 2 later told me he was very uneasy about departing visually in the conditions he saw at the time at the departure airport, let alone if he had known they were heading into known IMC. But he felt he was along for the ride and should not say anything to the Pilot-in-Command.

After taking off the PIC leveled off at 2100 feet (MSL), which is roughly 1300 AGL or 200 feet below their minimum en route altitude. During the course of the flight lowering clouds forced the PIC to descend a hundred feet, then a couple hundred feet more, to 1800 MSL (roughly 1000 AGL) and still, according to Pilot 3, closer than the FAA-required 500 feet below the bases of the clouds.

Although I was no longer communicating with Pilot 2 I continued to watch the METARs and listen to ATIS (Automatic Terminal Information Service). Oshkosh was back up to 1400 and 10, but the rain shower that took the field to IMC was blowing toward the approaching pilots, and more isolated rain showers were on radar just upwind of Wittman Field.

The flight proceeded until they were about three miles out. Just then another rain cell rolled over the Oshkosh airport. Tower advised that the field was closed to visual arrivals, and called my friends directly waving them off (telling them they must divert elsewhere).

The PIC elected to divert to nearby Fond du Lac, a recommended backup airport. But the PIC had no plan for getting from near Oshkosh to KFDL. Not anticipating the possible need to divert, the PIC had not reviewed the Oshkosh NOTAM (Notices to Aviators) as it applies to this other airport, and did not even know that normally nontowered Fond du Lac has a temporary control tower in operation during AirVenture. At least this is what the other pilots told me.

Despite these lapses in planning the PIC was able to locate KFDL. The CTAF (Common Traffic Advisory Frequency) is monitored and anyone checking in is alerted to the temporary tower frequency. Dozens of other aircraft were in the airspace near Fond du Lac with KFDL as well, either as their planned destination or after diverting from Oshkosh because of weather.

Amazingly, there were no deadly collisions in that visibility reduced, airplane-intense airspace around Fond du Lac or on its runway.

The pilots landed at KFDL. They had to wait all day but were finally able to make the short hop to KOSH shortly before the airport closed for the night.

I have not spoken to the PIC. Pilots 2 and 3 told me those items I attribute to each above. All the pilots express that they were successful and safe in flying to Oshkosh, in part as a result of

the superior flying ability they exhibited while making this flight in hazardous conditions. Several pilots of other airplanes who were making similar Oshkosh runs about the same time as these pilots say they were also very concerned about the weather along this route. A very few pilots demonstrated risk management skills and elected not to take off. Most dismissed their unease about the weather because they were focused on flying into Oshkosh and felt their skills were sufficient to do so safely.

I have a personal opinion of the “success” of this flight’s eventual arrival into Oshkosh, and specific ideas about the decision points that led to the outcomes along the way. I’ve been very frank with Pilots 2 and 3 about this (I have not had the opportunity to speak with the Pilot-in-Command), and several other pilots who are also aware of the circumstances and who have approached me in person specifically asking for my opinions.

Instead of telling you what I think outright, however, I think this week’s *LESSONS* will be more effective if:

- **You think about the decision points and options** along the timeline of this event, and then
- **You tell me what you think might or should have been done differently** (if you feel anything should have been done differently at all).

Send your ideas and opinions to mastery.flight.training@cox.net



How Much Flight Risk Should You Accept?

[Watch this video](#) for a thought-provoking answer to this important question.



See https://www.pilotworkshop.com/how-much-risk?utm_source=flying-lessons&utm_medium=banner&utm_term=&utm_content=&utm_campaign=risk&ad-tracking=fl-risk

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Debrief: Readers write about recent *FLYING LESSONS*:

A reader identified only as Rick B. writes about [last week's LESSONS](#) on fuel management and flight planning priorities:

*It never ceases to amaze me, in a negative way, how some pilots are so concerned about fuel prices. I would love to see the statistic about fuel starvation accidents because the pilot didn't top off someplace they could have because it was a few cents too much. **The price for fuel should never be a consideration when it comes to safety.***

I agree, Mr. B. My thought: use fuel pricing to determine where you'll stop for fuel if you wish, but never use price as a consideration of *when* you must add fuel or *how much* you need to add. In others, get the fuel you need regardless of the price. Thanks.

See <http://www.mastery-flight-training.com/20180720-flying-lessons.pdf>

Boyd Spitler writes:

Much is said and repeated regarding decision making in aviation in all categories of aircraft, most of it being useful counsel on conservative consideration of options. The sum of all of it is, and should be, that **the PIC has the final call and must make it for the system to work as it is designed.**

However, there is one more thing in the consideration which is too often left unspoken. After "what is the right/best decision?" and "how certain am I that this is the right/best call?" I add, "**what does it cost if I am wrong?**"

Pilots at all levels of experience and operations must overcome the primordial dread associated with catastrophe and premature death and include in the **analysis the cost of failure.** If the "cost," of all kinds, is unacceptable, then another option should be chosen. It follows that, if there is no good option, one chooses the one which minimizes the totality of consequences. This extremis is not so uncommon in wartime, but is often not considered ahead of time in routine operations. It should be part of every significant decision made, prior to and during flight until the paperwork is completed at the end.

Asking this question provides greater closure and confidence in the decision made and **allows the mind of the pilot to then focus on execution of the decision made rather than second guessing.** It does not preclude a *change if conditions change*, but reduces clutter in the forebrain for the task at hand.

On the topic of declaring an emergency...folks generally choose to minimize contact with regulators, whether local law enforcement or the FAA...unless we need their assistance. Scat approaching the fan is such a time. Declaring "minimum fuel" has no definition in the pilot controller glossary and means different things to different operators. Cultural considerations must be allowed as well, noting the [Avianca 707] that ran out of fuel and crashed on Long Island a number of years ago. Although the crew knew their fuel was dangerously low and they said as much, they accepted vectors at low altitude...grossly consumptive in a turbojet...from a New York controller...sometimes its own cultural challenge... and never declared "emergency" which would have compelled the prioritization of their flight in sequence. **The PIC must clearly communicate his needs and intentions** and conduct his/her operation in the safest manner amid the challenges. *If you are there for the investigation, that is a good thing.*

I'm reminded of retired Air Traffic Controller, flight instructor and *FLYING LESSONS* reader John Foster, whose presentations at Oshkosh and elsewhere include the acronym **BATH**...which stands for **Be Alive at The Hearing.** Boyd continues:

Regarding the use of "PAN", it is defined but is most appropriately used when a loss of capability affects the ability to comply with clearance but does not rise to the level of "EMERGENCY". Example: oceanic flight where loss of equipment compromises navigation. It is so seldom used, especially in CONUS [Continental United States] operations, that most controllers will be initially confused and need clarification anyway. Clear and concise is best and the communications technology now available allows open comm with controllers to get the timely assistance you need. **Using the word "EMERGENCY" makes all of [controllers'] assets available in a timely manner to your situation.**

Excellent reminders, Boyd. Thank you.

Frequent Debriefer Anthony Johnstone reminisces and fuel and fly-ins as well:

Regarding the fuel minimums issue: A personal anecdote, I was enroute to Oshkosh several years ago to meet up with some friends who had departed earlier the same day from Winfield [Kansas] (KWLD) in a [Cessna] 172. They had basic camping gear, I worked in the morning and left around 1400 with the heavy stuff including food and (most importantly) beer on ice! I planned a fuel stop at Mineral Springs, Wisconsin, with departure to coincide with arrival after the airshow. There is a window (as I am sure you know) for arrivals between the end of the airshow (around 1830) until 2000, when the field is closed for the night. I could have made it in one leg, but after multiple trips through the OSH arrival I wanted to minimize anxiety.

I refueled, waited until 1715, then launched for the 100-mile flight to the Ripon arrival. On monitoring the OSH arrival ATIS, I was taken aback by the announcement that the airport was closed to arrival until further notice (turns out that a famous NASCAR owner rolled his Premier [jet] into a ball after stalling out at the end of [runway] 18). So I built myself an impromptu holding pattern about 25 miles away, and cruised around in an oval in my Twin Comanche for about an hour until they announced that the airfield was closed for arrival for the night. Went back to Mineral Springs, took the crew car to town and found a motel and went in the next morning. The beer was warm by then, but they were happy to see me.

If I had been trying to get in with about an hour of fuel remaining, I think the process might have been a little more interesting. You can never have too much fuel (unless you are wanting to teach aerobatics in a Decathlon with a 200-pound guy in the front seat)!

Thank you as well, Tony.

Questions? Comments? Suggestions? Let us know, at mastery.flight.training@cox.net

I'm still at EAA AirVenture with the time getting late and three full days yet to go, so I'll keep *FLYING LESSONS* short this week. I'm working in the American Bonanza Society test across the street from Theater in the Woods. Look for the red-topped ABS Air Safety Foundation A36 Bonanza I'm privileged to fly. I'm also presenting "**From Proficiency to Mastery: Safety is the Outcome**" in the **FAA Safety Center** tomorrow (**Friday**) at **1 pm**.

Thanks for reading, and more importantly for thinking about what you've read and responding so I (and everyone else) can learn from you. I hope to see you at Oshkosh.

Share safer skies. [Forward *FLYING LESSONS* to a friend](#)



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