FLYING LESSONS for November 21, 2013
suggested by this week’s aircraft mishap reports

FLYING LESSONS uses the past week’s 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 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. 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:
What Were They Thinking?

Like the five stages of grief, pilots seem to go through Eight Stages of Response to reading or hearing about a fatal aircraft accident. You read it on the chat lines and see it on local TV news when reporters thrust a microphone into the face of a stunned fellow pilot who has just learned of a crash, often involving a friend or co-worker. The Eight Stages of Aircraft Crash Response are:

- Wow (if the person actually witnessed the crash)
- Stunned silence
- Denial, if the pilot or passengers are known (the “He was such a good pilot” or “But I was just talking to him yesterday” stage)
- Rationalization (“He did it because…” without waiting to hear any evidence [an occupational hazard of writing FLYING LESSONS])
- Acceptance, that aviation has greater risks than most people’s experience
- Resignation (the “He died doing what he loved” stage, much as I dislike that phrase)
- Transcendence (the “That was just stupid” and “I would never do that” stage)
- The Betterment (“I will change the way I fly because of what I learned”—a rarely attained stage of response because it is the only Stage that forces a pilot to confront the behavior and the risks he/she personally faces, and actually do something about it.)

See http://generalaviationnews.com/blog/2013/08/13/he-died-doing-what-he-loved/

Since most of us seem to progress only to Transcendence, which is really a form of denial characterized by emotional comfort and a feeling of personal superiority, when we review and study aircraft crashes we usually end up asking ourselves “what were they thinking?” that led to the moment of impact.

To get beyond this question and hopefully attain Betterment, let’s look at three “stupid” (I use this word only in the context of Transcendence) crashes that occurred in the past few weeks. Note that these synopses are from very recently posted U.S. National Transportation Safety Board (NTSB) Preliminary Reports. The investigations are far from complete and no Probable Causes have yet been assigned, nor Contributing Factors formally attributed. In the spirit of FLYING LESSONS, we’ll “[use] the past week’s mishap reports to consider what might have contributed to accidents, so you can make better decisions if you face similar circumstances.”

A Beech C90 King Air impacted terrain four miles southeast of the Springdale Municipal Airport, Springdale, Arkansas. The pilot and passenger were fatally injured and the airplane was destroyed. Visual meteorological conditions prevailed for the flight, and no flight plan had been filed. The flight originated from Pine Bluff, Arkansas, about 42 minutes before.

The pilot contacted Fort Smith, Arkansas (FSM), and advised he was en route from Pine Bluff to Bentonville (VBT), Arkansas. He was given flight following services. Later, the pilot said he wanted to change his destination to Fayetteville (KFYV), Arkansas. When the FSM controller asked the reason for the
destination change and if he required any assistance, the pilot stated he was low on fuel. The pilot requested the distance to FYV, and the controller told him it was nine miles away.

The pilot said he needed something closer. The controller advised that Springdale Airport (ASG) was at his 12 o’clock position and four miles away. The pilot reported ASG in sight and he was familiar with the airport. The controller then issued the pilot a frequency change to ASG tower.

The pilot contacted ASG tower and reported he was low on fuel. The ASG controller issued the wind conditions and altimeter setting and cleared the pilot to land on runway 36. Approximately 30 seconds later, the pilot advised ASG that he was not going to make the airport. The ASG controller attempted to get the aircraft’s position. No further transmissions were received from the pilot.

A witness saw the airplane descend, pull up abruptly, and impact the ground in a right wing-low, nose-low attitude. There were power lines about 300 feet short of the impact point.

Examination revealed no ground scars, only impact ground gouges. Control continuity was established from the flight controls to the center of the airplane. The right wing was destroyed. No fuel was observed in the left wing or nacelle tanks. The landing gear and flaps were retracted. Propeller signatures indicate the propellers were not feathered.

See www.ntsb.gov/aviationquery/brief.aspx?ev_id=20131101X04142&key=1

A Piper PA-28-140 impacted terrain while maneuvering near Talihina, Oklahoma. The Airline Transport Pilot, who was the sole occupant, sustained fatal injuries. The airplane sustained substantial damage. Instrument meteorological conditions (IMC) prevailed at the time of the accident, and a flight plan was not filed. The flight originated from the Searcy Municipal Airport (SRC), Searcy, Arkansas, about two hours before the crash, and was en route to Elk City, Oklahoma.

Preliminary radar data showed the airplane traveling to the west/southwest shortly after departure from SRC. Witnesses near the accident reported that they observed the airplane flying over the area on a westerly heading about 25 minutes before the crash. The last witness observed the airplane approximately 10 minutes before the crash. The airplane was observed flying at a low altitude in and out of IMC.

The accident site was located at 1746 feet mean sea level in densely wooded and hilly terrain. Several cut trees were noted adjacent to the main wreckage along a measured magnetic heading of 220 degrees. The main wreckage consisted of the fuselage, empennage, engine, and inboard section of the left wing. The right wing and outboard section of the left wing were separated and located within the debris distribution field.

Fifteen minutes before the crash, an AWOS approximately 23 miles northeast of the accident site reported the wind from 350 degrees at 8 knots, visibility two miles, heavy rain, and temperature and dew point 13 degrees Celsius.

See www.ntsb.gov/aviationquery/brief.aspx?ev_id=20131024X65945&key=1

A Beechcraft B36TC Bonanza was destroyed when it impacted terrain about two miles northeast of the Rick Husband Amarillo International Airport (AMA), Amarillo, Texas, during a missed approach at about 1 am local time on a Monday morning. The private pilot and two passengers received fatal injuries. Night instrument meteorological conditions prevailed at the time of the accident, and an instrument flight rules (IFR) flight plan was filed. The airplane departed from the Lubbock Preston Smith International Airport (LBB) about one hour and 10 minutes before the crash.

The pilot flew three previous flights that Sunday before the accident flight. The first flight departed Tradewind Airport (TDW), Amarillo, Texas, about 1424 and landed at LBB about 1502. The second flight departed LBB about 1536 and landed at the Collin County Regional Airport (TKI), Dallas, Texas, about 1716. The third flight departed TKI about 2123 and landed at LBB about 2317. The accident flight departed LBB about 2351 with TDW as the intended destination. IFR flight plans were filed for all four flights.

[Because I know you’re doing the math, that comes to a total of 5 hours 16 minutes of flight over a 10 ½ hour duty day, not counting flight planning and preflight time before the first flight—which began at nearly 2:30 in the afternoon.—TT]

During the flight to TDW, the flight entered a north/south holding pattern and flew two turns in holding. Air Traffic Control cleared the airplane for the Runway 35 RNAV approach to TDW. The radar track data showed that the pilot flew the approach, and subsequently the pilot executed the published missed approach at TDW.
The pilot then flew the ILS Runway 4 approach into AMA, which is about 6 nm from TDW. The pilot indicated the Hale County Airport (PVW), Plainview, Texas, as an alternate if landing was unsuccessful. Radar track data indicated the pilot flew the ILS Runway 4 approach and then attempted to execute the missed approach. During the missed approach, the airplane departed radar contact and impacted terrain.

At 2353 (about the time the pilot departed Lubbock) the surface weather observation at AMA was wind 170 degrees at 13 knots; 1/4 mile visibility; fog; sky obscured; vertical visibility 100 feet; temperature 8 degrees Celsius (C); dew point 8 degrees C; altimeter 30.24 inches of mercury.

At 0053, [just prior to the crash, about the time the pilot was at the Missed Approach Point for the ILS—TT] weather at AMA was wind 170 degrees at 10 knots; 1/4 mile visibility; fog; sky obscured; vertical visibility 100 feet; temperature 9 degrees C; dew point 8 degrees C; altimeter 30.23 inches of mercury.

During the approach to TDW, the air traffic controller provided the pilot with the current weather at AMA since there was no weather reporting at TDW. The current weather at AMA was wind 170 degrees at 13 knots; visibility 1/4 mile with fog obscuration and ceiling variable between 1,400 feet and 1,600 feet.

The pilot held a single-engine airplane land rating which he received on July 16, 1985. He held a third class medical certificate issued on October 24, 2013. During his medical examination on October 24, 2013, the pilot reported that his total flight time was 410 hours. Federal Aviation Administration records indicated that the pilot did not hold an instrument rating. See www.ntsb.gov/aviationquery/brief.aspx?ev_id=20131111X10005&key=1

Very briefly, what are the conclusions we’d normally draw about each of these tragic events?

In the case of the King Air, we’d talk about the need to fuel the airplane sufficiently for flight—the airplane did not have anything even close to minimum-required Day/VFR fuel minimums to begin the flight (computed fuel burn plus 30 minutes of additional fuel at destination). He had to have known he was at less than minimum fuel as he flew past a few airports in the hilly northwestern part of Arkansas. He delayed seeking an alternate until he had no remaining options. When the engines flamed out he did not feather the propellers, which would have significantly increase his glide range. And ultimately he spied power lines ahead in his final glide, he panicked and pulled up, quickly stalling the airplane—killing the highly experienced pilot and his wife. As we’ve noted in FLYING LESSONS several times, it’s not the engine failure that’ll get you, it’s the stall or the poorly executed glide.

The Piper Cherokee pilot appears to have attempted a cross-country trip under low ceilings and in visibility-limiting heavy rain, perhaps (if witnesses’ reports are to be believed) doubling back and re-attempting his westward flight, presumably because he lost visual contact with the ground. The flight ended in a somewhat predictable Controlled Flight Into Terrain (CFIT)—impacting obstacles and terrain under control in a near-level flight attitude at cruise speed. The anomaly is that the pilot held an Airline Transport Pilot (ATP) certificate, so he was skilled and instrument rated. We tend to think attempted visual flight in instrument meteorological conditions crashes (so-called “VFR into IMC”) happens to low-time, VFR-only pilots. So we begin the rationalization. The Transcendent pilot will try to explain away this anomaly by assuming the pilot had not flown IFR for a long time, or was not skilled in single-pilot operation. Perhaps the airplane he was flying was not instrument certified or equipped, or had inoperative equipment that rendered it VFR only. We can’t easily wrap our heads around the idea of a rated and current pilot in an IFR-capable airplane choosing to scud-run at very low altitude over long distances in poor visibility. Since we usually refuse to even consider “what he was thinking?” we don’t bother to ask more questions. Consequently we don’t really learn anything from his fatal experience.

The Bonanza crash, which killed the pilot, his wife and their teenage son—an entire family—is easy to rationalize away because the pilot was not instrument rated and deliberately launched into below-minimums weather, at night, after a very long day in the air (not to mention any wakeful duties before his 2:30 pm initial launch). I’d never do that, right? And I’m instrument rated. So this could never happen to me. What else might have happened? Did he fuel the airplane at any time during the five hours, sixteen minutes of flight? Did he account for the much higher fuel flows during takeoff and climb, or did his estimate fuel requirements based only on
We can only speculate about what the pilots may have been thinking as they prepared for their final flights, and as each flight progressed toward its awful end. But in these cases it’s obvious that they were not thinking about things like:

- **Responsibility to passengers.** Our passengers trust us implicitly. Many probably have no idea what it takes to safely conduct a flight, and despite their assertions have no frame of reference to know how good a pilot (or how bad) we are. They fly along believing we are as good or better than an airline pilot. It’s our job, then, to live up to that expectation.

- **Convenience vs. necessity.** Personal flying is an astounding expression of personal freedom. The utter convenience and speed of personal flight is a major reason flying is so astounding. It’s our responsibility to determine when necessity outweighs convenience. Get to the airport sooner to verify the airplane is airworthy and ready. Budget time to stick around after landing long enough to ensure the aircraft is properly fueled, even at that favorite vacation spot or before a business meeting. Build flexibility into your schedule so you’re easily willing to land for fuel or to wait out adverse weather en route. Be willing and able to delay or cancel a flight if conditions require.

- **Flight planning skills.** It seems that in all three of these cases the pilot took off without adequately planning the trip—fuel and weather planning being contributors to the greatest majority of fatal aircraft crashes. Take time to plan the flight. Learn enough to evaluate the weather, including en route observations and the advantages (and pitfalls) of weather data uplinks. Know engine management and fuel management so you can recite the differences between takeoff, climb and cruise fuel flows. Be positively insistent on arriving with sufficient fuel reserves, ready to exercise that “necessity” fuel diversion if needed.

- **In-flight monitoring and decision-making.** We’re usually taught that flight planning and go/no-go decision-making is something that happens before you take off. The reality is that takeoff is merely the beginning of a continuous process of gathering, observing, evaluating and responding to data. Fuel flow. Ground speed. Fuel remaining. Fuel to destination. Cloud conditions. Visibility. Surface winds. Outside air temperature. They’re all variables that are predicted before takeoff, but which change constantly once you’re in the air. Don’t let anything change without you knowing about it, and making a revised go/no-go decision with each piece of confirmed or new data. Thinking that flight planning and a go/no-go decision is only happens on the ground is analogous to using a printed checklist for engine start and run-up, then throwing the handbook onto the back seat where it’s unavailable for the rest of the flight. You never know when you’re going to need that information.

- **Fatigue.** We learn about medical conditions that could disqualify us from getting medical certification. We know less about conditions or medications that should cause us to temporarily ground ourselves. But fatigue is the big unknown in transportation safety. My American readers probably know about the very recent FAA policy change concerning body mass index (BMI) and sleep apnea—an extremely controversial policy that, if you care to learn more, you may read about at [www.aopa.org](http://www.aopa.org), [www.eaa.org](http://www.eaa.org), my professional responsibilities at [www.bonanza.org](http://www.bonanza.org), and probably most other aviation organizations, chat lines and bulletin boards. The truth is that there are very little data on how to adequately self-certify for fatigue state regardless of your physical condition or fatigue’s contributing factors. Not only do we need to accurately judge our current fatigue state prior to flight, we also need to forecast our probable fatigue condition at the completion of our trip, taking time of day, lighting conditions, and the challenges of the flight (IFR, mountains, oxygen requirements, etc.). We need to honestly evaluate our fatigue state before and continuously during flight—and have the discipline to do the right
thing before we're too tired to safety fly...or to approach, miss the approach if needed, and eventually land.

- **Diversions.** Pilots fall victim to what I call "magenta line thinking." Like the GPS' magenta line as we pass a waypoint, we throw away what's behind us and consider only what lies ahead. I wonder if that King Air pilot, knowing he was running low on fuel, ever considered turning around and going back to where he came from, so close but apparently forgotten. Your airplane's endurance isn't a straight line, it's the diameter of a giant circle drawn around your aircraft, made oblong by the winds and growing smaller with each gallon of fuel burned. Options are all around you.

- **Qualifications and currency.** A pilot's got to know his/her limitations. There's a reason for the Instrument rating and weather questions on written examinations and rules for recency of experience. Note these are *minimum* qualifications—we should all strive to do much more. Let the regulations be your conscience, the "hard deck" of pilot qualifications and currency beneath which we will refuse to operate without instruction or experience as needed to earn, retain or regain minimum qualification for the flight.

- **Day of the week, time of day.** Why do so many crashes happen on the weekends? Is that when we're flying more? Or are we under pressure to get home from where we went in the days before? When planning a trip consciously consider the external pressures that will result from waiting too long to try to get home. No one flying his or her family in a personal airplane really needs to be trying to get home at one in the morning, instrument rated or not. Do you suppose the Bonanza pilot needed to be back in the office first thing the next morning? Or that his wife or son had Monday morning commitments or school? Perhaps they should have made different plans.

- **Need help?** Ask sooner rather than later. Pilots admit the need for help only with great reluctance, and when we finally do we tend to understate problems. It's the Chuck Yeager syndrome of wanting to be confident, independent and in charge in a folksy, dismissive sort of way (General Yeager has described this pilot malady modeled falsely after his image as well). There's a difference between *urgency* and *emergency*. Yet pilots almost never advise controllers of the former conditions, and downplay the seriousness when they progress to the latter. No wonder we sometimes overload ourselves, when we could get a lot of help for the asking.

**Promote Yourself to Captain**

Let's wrap this up with another illustration. My (slightly) younger brother Tracy is currently in his first week of First Officer indoctrination training with a major regional jet airline (congratulations and good luck, Trace!) As an aside, a third of his class is over age 40; after 25 years as an engineer my brother tells me seniority dates within his class are handed out on the basis of age, so he's at the top of the bottom of the flight department heap right now. Way to go, career changer!

**Flying to Houston** for training last Sunday, Tracy’s flight from Cleveland to Chicago was delayed and eventually diverted because of severe weather at O’Hare. After a ground-stop delay at Cleveland, the ERJ crew flew some ATC-assigned delaying tactics before lining up for the approach, only to miss from very near touchdown because of a tornado reported in the immediate vicinity. The crew diverted to Indianapolis, Indiana, where passengers sat until the line of storms eventually blew through there as well. Many O’Hare-bound jets diverted to Indianapolis, so many that some passengers rode out the heavy storms still on airplanes because there were not enough gates to accommodate them all.
The crew of that Regional Jet knew before they left Cleveland that the weather was going to be bad. They launched with the plan of beating it to O'Hare, but had an “out” if they needed it. As soon as the situation required a change in plan they were ready and willing to execute.

Although it’s possible the flight deck crew thought about passengers missing their connections, hassles of landing at an airport not really prepared to accommodate them, and their own inevitable duty-day limitations growing ever nearer, in reality they probably didn’t care. And frankly, we don’t want them to. We want our professional aircrews to get us where we’ve paid to be, but even more importantly we want them to make safety-of-flight decisions without the distractions of considering the individual pressures and schedules passengers face. We expect nothing less of a professional flight crew, especially the person indentified as the all-responsible captain.

No matter what you fly, when you act as pilot-in-command you are the captain of your aircraft. Put on your virtual captain’s hat and wings and act like it. At some point as the time of a flight approaches you stop being a spouse or a parent or a businessperson or a friend. You become the captain of your aircraft, with all responsibilities that go with it. Your decisions must be made on the basis of safely arriving at your destination or, if the situation turns, making certain your passengers safely arrive at some destination—even if that’s the point of departure.

So promote yourself to captain for the time from flight planning through postflight chores. Make decisions to uphold the motto of the Airline Pilots Association: “Schedule, with safety.” Act like a professional flight crew...because as far as your passengers know, you are.

Comments? Mastery.flight.training@cox.net

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Walking the walk

Next week is Thanksgiving in the United States, and I’m planning to fly my wife and son in an A36 Bonanza from Wichita, Kansas to Dayton, Ohio (about four hours by Bonanza). Perhaps we’ll
stop at St. Louis, Missouri along the way to see my wife’s family. It’s the perfect use of general aviation. This time of year, however, weather hazards and especially the threat of ice mean we won’t know until it’s time to fly whether we’ll be able to make it as planned.

So I’ve already begun the process of reducing external stress. I’ve repeatedly told my wife and son, and at least as importantly, all my family in Ohio that there’s a chance we’ll be late, might have to leave early, or maybe we won’t be able to come at all. From a “flying standby” airline family, my mother, brothers, sister, nieces and nephews understand. And my wife’s parents know the score too, having been around general aviation through me even if they’ve rarely participated themselves.

What are you doing to educate your family, friends and co-workers about the benefits and limitations of travel by personal aviation? With just a little discussion of the realities of your own limitations and those of the airplane you’ll fly, you can dramatically reduce the external pressures that might urge you to make bad decisions when the day to fly comes.

This week’s FLYING LESSONS has been several weeks in the making, with a few more recent items obviously thrown in. It’s longer than normal so I’ll leave recent Debrief items and other links and comments for next week’s report. U.S. readers, have a safe and happy Thanksgiving holiday. Everyone, thank you for reading, and for all who support FLYING LESSONS through your valued insights and your donations.

“Thanks for reminding me of all the things I have learned and hopefully will not have to relearn.”

--Tom Allen

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Thomas P. Turner, M.S. Aviation Safety, MCFI
2010 National FAA Safety Team Representative of the Year
2008 FAA Central Region CFI of the Year

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