

Thomas P. Turner's Mastery of Flight

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FLYING LESSONS for September 28, 2023

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 most 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.**

FLYING LESSONS is an independent product of MASTERY FLIGHT TRAINING, INC. www.thomaspturner.com

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Construction of the new Mastery Flight Training website is under way! This edition will be added to the pdf archives when the new website launches in October. Thanks for your patience.

This week's LESSONS:

Last week our Debrief included a note from Ben Sclair, publisher of [General Aviation News](#), suggesting I ask readers for examples of decisions done right. Frequent Debriefeer Lorne Sheren rose to the challenge:

At risk of being self-righteous...

Coming back from Nashville, Tennessee to home base in New Jersey (KSMQ) after a friend's wedding. On board the B36TC [turbocharged Bonanza] was my wife and daughter with her fiancé who was enjoying (think) only his second flight in a General Aviation aircraft. Also on board was luggage consisting of the wedding clothes, etc., perhaps 150 pounds of luggage.

Bonanza operators will immediately determine that this was **a lot of payload** (my useful payload being 1250 pounds and me having the aforementioned luggage plus 700 pounds of humans). The B36TC has a fuel capacity of 102 gallons but I departed KJWT [Nashville's John Tune Airport] with about 70 gallons (burn is nominally 16 GPH) with **a plan to stop [for] gas somewhere (my personal minimum is 20 gallons on board at touchdown)**.

Well, the direct route would have required penetrating a line of reds and yellows, but that line ended somewhere over South Carolina. So my strategy was **fly east until I could head north ahead (east) of the line**. As we droned on **the line kept building** (not so much moving as building. Rapidly.) To the south I kept pace by altering course heading further south. **Clearly this strategy wasn't going to work.**

After 2 1/2 hours **I was starting to become concerned about fuel (which I always consider a bad sign)**. I was handed off to the CLT [Charlotte, North Carolina] controller who confirmed what I was seeing on the NEXRAD that the entire area east of CLT was a mass of red and that **approach wasn't clearing anyone into that area**. So I'm thinking, it's been 2 [hours] 45 [minutes], I have my family on board, and what will Tom write about when he covers this?

And I look down and see KCLT directly below me. A giant airport! Right there and still in the clear, the precip having already passed over the field. So **I told ATC I was diverting to CLT**, told the family the plan, and flew a visual approach to CLT **where everyone was happy to get out of the "box."**

Checking the weather, and once again fueling to 70 [gallons], I told the family the weather precluded getting back to New Jersey today but **we would fly as close as we could**. We had some snacks at a very hospitable FBO and ended up flying to Harrisburg, Pennsylvania (KMDT) which had a large number of rental cars. **We drove back to New Jersey** (1 [hour] 30 [minutes]). I drove the rental back to KMDT the following morning and brought the plane home. A friend and [retired TWA captain] Tom Rosen told me years ago, *“When the NTSB comes to look at the wreckage the next day the weather is always great.”*

The *LESSON* learned is *having the resources (fuel, etc.) to be flexible and not to stretch my personal operational criteria* (especially the 20-gallon rule). And *let your passengers know what your plan and thinking is so they can be part of the solution*. They like that.

See www.generalaviationnews.com

All good LESSONS, Lorne. Thank you. This reminds me of several *LESSONS* I've published over the years, including:

Go as far as you can, and make a new plan when you get there. As a high schooler and while in college I often flew standby (“nonrev,” for non-revenue, or “Space A” for “space available”) as a dependent of my father, a Honolulu-based United Airlines mechanic. In those days before frequent flyer programs and automatic upgrades it was much easier to travel on standby. But it still presented challenges, especially in the holiday periods when I was on break and flew back and forth from college in Ohio. There were also far fewer flights than there are now. With busy holiday flights, weather and sometimes scarce connections there was a definite strategy to getting home and back again. A *LESSON* I learned then was *“never let an empty seat leave heading the general direction you want to go.”* I carried this strategy over into my own flying and use it to this day...as did Lorne.

The best thunderstorm strategy is to remain in visual conditions. Modern cockpit weather technology makes it easier to maintain the recommended 20 miles from heavy storms (and in a light airplane, all thunderstorms should be considered “heavy”). But datalinks do not change aerodynamics and an aircraft's tolerance for wind shear, turbulence and hail. If you're close enough to heavy echoes that you're inside the cloud, you're probably too close—and you have no way to stay clear of the hazards. Even if your airplane has active onboard weather radar, using it correctly takes training and expertise...as well as time to use it in flight. There's a whole lot more to adverse weather avoidance, but **the most effective method is to stay in clear air so you can avoid the threat visually**. Lorne did that, landing visually at Charlotte.

Be conservative with fuel, especially when weather or other factors may cause delays or diversions. For example, I make a trip for work once a year to a popular fly-in event in central Tennessee. It takes a little less than four hours nonstop in the usual autumn winds—if I manage power and fuel tank selection carefully I can make it nonstop. But if the weather is anything less than excellent I'll make a stop a little past halfway so I can top off the tanks. This allows me to arrive with more than two hours in the tanks. **Why?** Because I know it's likely others will be arriving at the nontowered airport around the same time I will, so somebody is going to have to hold for their turn at the approach. I've had to do this several times. Lorne's experience reaffirmed this for him.

Personal minimums are useless if you discard them when they become inconvenient. In fact, that's when it's most important to hold yourself to high standards. Lorne's flight reminded him of that as well.

Keep your passengers and family informed about the factors that affect your go/no-go/continue decisions. **Nonpilots probably don't appreciate the hazards** you face, the limitations of the aircraft, or the need to evaluate not only what the weather looks like “here” and perhaps what it's doing “there,” but also conditions that exist between departure and destination, and how they'll all change between now and the time you'll encounter them. **That is, unless you teach them**. I've found I've perceived stress from family and passengers when in fact they fully understand your decisions if they know why you must make them.

It's far more common to use airplane accident reports as the inspiration for *FLYING LESSONS* that make us all safer. That's because accidents are reported and investigated, so we have at least some information with which to work.

We don't usually document successful inflight decision-making. When we do, however, it's equally possible to learn and perhaps expand on the *LESSONS* demonstrated. Thank you, Lorne, for your example. **Readers, do you have more?**

Questions? Comments? Supportable opinions? Let us know at mastery.flight.training@cox.net.

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PILOT WORKSHOPS

Debrief: Readers write about recent *FLYING LESSONS*:

Reader Sam Dawson writes about last week's Debrief and mention of [the recent Russian Airbus off-airport landing](#):

Another good Debrief on fuel. The Russian Airbus crew might have made some mistakes in their fuel planning during the emergency (I will wait for their final report) but **ultimately they made the correct and difficult decision to put the airplane down in a controlled manner** rather than sticking their heads in the sand and running out of gas. That can be a tough decision. I actually wrote an article about making such a decision that was published in *Flying Magazine*.

I think one of the things that can help pilots in this decision making is to **place hard barriers ahead of time to force their hands**. Also, **don't be afraid to declare "minimum fuel", then "emergency fuel."** At my airline, as an example, we define "minimum fuel" as being committed to land at a specific airport due to fuel state. It is **NOT** an emergency, but it lets ATC know you can't take further delays and is passed on to subsequent controllers. We define "emergency fuel" when the calculated fuel on landing **at the nearest suitable airport** will be less than the planned "final reserve fuel" (FAA mandated reserve fuel). I've had to declare "minimum fuel" once in the past and there were no issues. Same with "emergency fuel". I once had to declare it while IMC in a UH-1 due to no fault of my own (unforecast weather and a maintenance issue). Again, I never heard a peep from the FAA.

Thanks for expanding on last week's *LESSONS*, Sam.

See <https://www.bbc.com/news/world-europe-66785897>

Reader, instructor and airshow performer Doug Rozendaal takes us back a few weeks to *LESSONS* prompted by a gear-up off-runway landing in one Bonanza and a gear-down off-runway landing in another Bonanza the same week, in which the gear-down airplane flipped over. Doug writes:

Here is what I say and teach about gear up vs. down on off-airport landings:

Unless you are willing to bet your life and more importantly you friends or families lives on the quality of the surface, land gear up. Have you watched [the Power Loss video that I did with Martin Pauly](#)? I talk a lot about off airport landings.

We have an entire generation, maybe two, of pilots who are afraid to land on grass, much less a perfectly coiffed pasture or harvested bean field. *Pilots who grew up flying out of hayfields and off of roads are much less concerned about off-airport landings, and you can be sure will have better success when it happens.*

And then there is the whole denial thing. I know way too many people who believe that because they have a Beechcraft, an engine analyzer, and read BeechTalk, they are immune from an engine failure. **Totally unwilling to acknowledge the risk, and therefore at greater risk.**

If you ever want to do a loss of power podcast, I would be happy to do that. Or on any other subject. Martin's channel is making an impact. I seldom take a trip without someone coming up to me and introducing themselves to say thank you for the videos. They are more work, but I think podcasts and videos are the best way to get the message out to the widest audience.

I have watched your power loss video, and some of the others. I don't have time in this after-hours effort to do much of that sort of thing myself here, although I am a guest this week on EAA's webinar series, on the topic "[Collision Avoidance in the Traffic Pattern](#)." Yes, I'd very much like to do something with you sometime.

Your comments reinforce my *LESSON*, that **the default engine-out touchdown should be gear up** (assuming a retractable gear airplane), **unless the landing is on a prepared runway surface** (grass included). Meanwhile, consistent with the airplane's design characteristics (prop clearance, robustness of landing gear) and (I have to say it) insurance coverage (many policies on retracts exclude coverage on other than "paved, public use runways" except in case of emergency; read your policy), **find a well-maintained grass runway and get some practice, perhaps with an experienced instructor at first**, on something other than asphalt or concrete. As Doug says, it helps build confidence in case of emergency later. It's also a lot of fun. Thanks, Doug.

See:

<https://youtu.be/7DUE8Eh5IUy?feature=shared>

https://pages.eaa.org/2023-09-27WBN_Collision_LP-Registration.html

What do you think? Let us learn from you, at mastery.flight.training@cox.net.



See www.nafinet.org.

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You're even more awesome!

Generous readers came through and have donated enough to cover the entire cost of the new www.thomasturner.com. Launch is expected by mid-October. **Thank you so much** for your generosity as I dig out of the mess created by my past web designer.

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Of course I'm always grateful to my regular monthly contributors and other donors that cover most of the "normal" expenses of hosting and delivering the weekly reports. **Thank you, too!**

One time or once a month, if you're so inclined to help cover the costs of hosting and delivering the weekly reports [please donate through this secure PayPal link](#) that is independent of the old Mastery Flight Training website. **Thank you once again.**

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2010 National FAA Safety Team Representative of the Year
2008 FAA Central Region CFI of the Year
Three-time Master CFI

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