

# Thomas P. Turner's Mastery of Flight

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## FLYING LESSONS for May 9, 2024

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.**

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### ***This week's LESSONS:***

**The FAA reported** recently:

The pilot of a Lancair Legacy FG died, and the high-performance Experimental/Amateur Built airplane was “destroyed” in a post-crash fire, when the aircraft crashed “under unknown circumstances while performing touch and goes.”

**I'm keenly aware** of the tragedy behind this simple sentence, and sensitive to launching into the wider LESSONS I draw from this crash. The FAA's description of the few facts known at the time, however, includes a common accident analysis trigger phrase—“touch and goes”—and opens up a common debate: the wisdom of practicing and performing touch-and-go landings.

**My readers and students** likely know my position, at least in the retractable gear aircraft I most commonly fly and teach. Yet I routinely taught touch-and-goes in fixed gear airplanes. **This time** I'm not going to pass judgment on touch-and-goes, nor make any recommendation for or against the technique.

**Instead**, I'll list considerations for doing, or not doing, touch-and-go landings. Use this as an opportunity to support **your** decision whether or not touch-and-goes are worthwhile and an acceptable risk. More importantly, take time to deliberately consider the other point of view. **You may confirm your current position. You might change your mind.** Either outcome is valuable.

**First**, what does the FAA say about touch-and-goes? The [Airplane Flying Handbook](#), designed to be the primary textbook for learning piloting techniques, says nothing. The [Aviation Instructor's Handbook](#), the Federal go-to manual for teaching flying, does not mention touch-and-goes specifically but does say this:

Full stop landings help the learner develop aircraft control, allow for careful checklist use, and allow time for detailed instruction.

**Under the heading** “Managing Risk While Teaching Takeoffs,” the *Aviation Instructor's Handbook* continues:

The time it takes for an aircraft to begin its takeoff and initiate a climb is only a matter of seconds. There may not be time to teach effectively during the takeoff...the learner's attention is placed almost entirely on trying to safely maneuver the aircraft.... The instructor should conduct the majority of their teaching...prior to contacting the tower or announcing their intentions on CTAF at a non-towered airport.

**And the Airman Certification Standards (ACS)**, the evaluation standard for pilots, that is, the minimum proficiency an applicant must demonstrate in order to earn a pilot certificate or rating, doesn't include touch-and-goes...but it does not specifically require full stop landings, either.

See:

[https://www.faa.gov/regulations\\_policies/handbooks\\_manuals/aviation/airplane\\_handbook](https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook)

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**Do them or not**, here are some things to consider when deciding whether to conduct touch-and-go (T&G) landings:

- T&Gs permit practicing the greatest number of landings in a given training time.
- T&Gs do not reinforce the completion of Before Takeoff or After Landing checklists.
- In retractable gear airplanes (note the accident airplane that prompts these *LESSONS* is a fixed-gear type) there is a high correlation between T&Gs and both gear collapse (inadvertent gear retraction on the ground) and gear up landings (forgetting to extend the landing gear, perhaps thinking the gear was down from the previous time around the circuit or complacency from multiple traffic patterns).
- T&Gs allow practice of technique for a go-around initiated after touchdown, for example, taking off to avoid an obstacle or a runway incursion further down the runway.
- T&Gs do not reinforce completion of a takeoff briefing to review performance expectations and takeoff/initial climb emergencies.
- T&Gs are not something done in most flying, running counter to the concept of “train like you fly, and fly like you train.”
- Some flight schools divide responsibilities between a Pilot-Flying (PF, usually the PRI, the Pilot Receiving Instruction) and the Pilot-Monitoring (PM, usually a flight instructor) when performing T&Gs. Commonly I've heard the PF handles flight controls and power, while the PM takes care of flaps, trim and cowl flaps, during the maneuver. This requires thorough briefing before flight and very careful coordination during the T&G. It does not reinforce habit patterns for when the PF is not working as a “crew” in this fashion, but in fact transfers negative learning.
- Most Loss of Directional Control events on the Runway (LODC-R), especially in crosswinds, occur during the low-speed portions of the ground roll when reduced airflow over the control surfaces decreases control effectiveness. T&Gs do not expose the pilot to the low speed/low airflow phase of landing or takeoff, and therefore do not fully train the pilot for crosswind operations or low-speed ground operation of tailwheel and some castoring nosewheel aircraft.
- The more complex the aircraft, the more opportunity for error exists during a T&G.
- In many airplanes, especially in when operated in the forward end of the center of gravity envelope or when making a short-field landing, the elevator trim position at landing is more nose-up than the safe takeoff trim setting. When power is applied in a T&G the airplane will tend to pitch up, sometimes sharply, and can mush or stall unless the pilot lowers angle of attack while trimming the elevator nose down. The FAA warns about the [elevator trim stall](#) (page 5-20) but does not require practicing or demonstrating proficiency in this maneuver.

See [https://www.faa.gov/sites/faa.gov/files/regulations\\_policies/handbooks\\_manuals/aviation/airplane\\_handbook/06\\_afh\\_ch5.pdf](https://www.faa.gov/sites/faa.gov/files/regulations_policies/handbooks_manuals/aviation/airplane_handbook/06_afh_ch5.pdf)

**Back to our example**, the Lancair FG tragedy: the [Aviation Safety Network](#) parrots the FAA preliminary report with one significant difference. ASN adds:

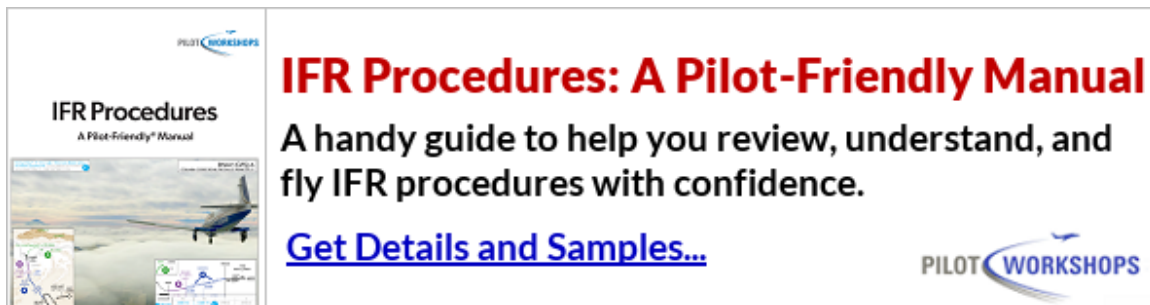
ADS-B data shows the aircraft on a base to final turn before the track ended.

**The investigation** has only just begun. But it may turn out to be a stall/spin in the turn from base to final. It may be a spiral entry in the same location that builds rapidly and prevents recovery before hitting the ground. Or that may simply have been where ADS-B data was lost.

**Unless ADS-B data** was interrupted at the lowest altitudes above the runway, the mention of a touch-and-go in the FAA preliminary report may be entirely moot. **Regardless**, this crash serves as a good reminder to **look objectively** at whether the benefits of touch-and-goes are worth the risks, and if so, what to consider when performing a touch and go.

See <https://aviation-safety.net/wikibase/386833>

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

Readers write about [last week's Debrief](#), itself a commentary on the previous week's *LESSONS*:

From reader and corporate flight department consultant Jim Lara:

This morning, [my wife] Darlene and I experienced, perhaps, a similar frustration with the weather that you had trying to get to “The Bash.” For weeks, we have been planning a trip in the Baron to Chandler, Arizona with an RON [Remain Over Night] stop in Roswell, New Mexico. We have been carefully watching the weather Progs and long-range forecasts. As late as last night, it looked GREAT for a series to 2-hour jaunts from Knoxville [Tennessee], to Walnut Ridge, Arkansas, to Chickasha, Oklahoma, then to Roswell.

The alarm clock sounded at 5:30 AM this morning. I pulled up the “My Radar” app on my phone and what did I see? What are all of those Green, Yellow, Red and TRW [Thunderstorm/Rain Showers] symbols? Could that possibly be correct considering the fact that the forecast, as late as last night, was for “smooth sailing”? No, it can’t be. So, let’s have a look on the desktop computer with a big screen monitor. Even worse! Both the 1<sup>st</sup> and 2<sup>nd</sup> fuel stops were impacted with severe weather. How about the Sequence Reports? Yep, BAD!

Well, could we go around the southern end of the thunderstorm line? Maybe, south of Dallas? But the line was growing. And that diversion would add hours to our enroute time.

Okay, how about the Knoxville departure weather? Hmm... 200 foot overcast, visibility ¼ in fog. The runway at KDKX (our base) is 3,499 feet with no centerline lights, just medium intensity runway lights. The takeoff alternate would be KTYS [Knoxville’s commercial airport], but it was also impacted with fog and low visibility. Bottom Line, suitable departure weather may now exist until 10 AM, two hours later than our planned departure time. We probably wouldn’t make Roswell before my duty time was up for the day.

Okay, what are the “driving factors” of this trip? We were going to Chandler in support of a class that Darlene is scheduled to begin on Friday. We needed to be there this Thursday (tomorrow),

before noon local time. The Lord was sending us a message. Really clear and simple: “Don’t fly the Baron today!”

What’s a grounded light twin pilot to do with the urgency to get to Chandler? Well, as painful as it was, the conservative answer was ...call Delta! We did. Darlene is now booked on a DAL flight Thursday morning. I will be keeping the home fires burning. The Baron will be sitting in the hangar.

You know that old adage: “There are no Old, Bold Pilots”! I want to get very, very old!

The more you fly the more you’ll delay, divert or cancel. The airplanes certainly do that. The difference, I read somewhere, is that the airlines do no care whether you get to Jimmy’s soccer game or Grandma’s funeral...or to attend or deliver a presentation. That takes tremendous stress off the decision-making of captains and dispatchers. When the pilot-in-command (PIC) is also the person with the compelling reason to complete the trip on schedule, there is almost a conflict of interest when the weather gets bad. The PIC must be willing to rise above this stress and recuse him/herself from the “must be there” part of the go/no-go decision...as you did, Jim. Thank you.

Reader and professional pilot Mark Sletten adds:

Good stuff in your latest *FLYING LESSONS*, Tom. [My wife] Lisa and I use our airplane to travel as much as possible. It's not any cheaper than flying commercially, but we really enjoy not being tied to someone else's schedule. And we find **the unpredictability of GA travel takes us places we would never have visited otherwise**. Some of our most memorable trips were completely unplanned.

That said, there are *times when we have to be somewhere* on a specific date. As you know, this is often the beginning of a tragic GA story. We have devised a strategy to completely eliminate the pressure to fly in these situations: we **purchase refundable airline tickets**. I keep tabs on the weather in the days leading up to the event and we make a final go/no-go decision 24 hours ahead of our planned departure, when there is absolutely no pressure whatsoever.

***Flying is supposed to be fun. I get that a challenge is fun for many, me included. But challenges with deadly consequences for failure should be reserved for emergency situations, and creating an emergency just for the challenge of it isn't my idea of fun.***

I have begun buying refundable tickets before trips also, but for various business reasons I had not done so before the Beech Bash trip. Next time I will. Thanks for the great strategy pointer, Mark, and especially for that last paragraph in your note.

Reader/instructor Fred Pond continues:

Excellent article, thank you for sharing. I’m at the BeechBash now [as he wrote this]. I “drove it” from Ohio. My issue was returning home with forecast of gusting crosswinds up to 30 knots. I communicated with Eric Bradley, my instructor, on the best methods to set up and land in the forecasted severe cross winds. I went through all different flap settings, touchdown airspeeds, and prayers that have worked for seasoned Bonanza pilots. He had a very simple response: “**Land at a different airport** with a runway that favored the winds.” I laughed at his response, then myself, and realized I have more to learn to become the “seasoned” Bonanza pilot...and so I drove. My wife said I could take her comfortable car. I look forward to seeing you at Oshkosh.

The Bash was more than a single day’s driving distance by the time I was a flying no-go, and I had more compelling business reasons to be at work the Wednesday before and the Monday after than I had for attending the fly-in, regretfully. I have another recent story to relate that does involve some significant drive time, which I may use in a future *LESSON*. Thanks, Fred. See you at Oshkosh.

Wrapping up this week’s Debrief, reader/instructor/Air Safety Investigator Jeff Edwards commends last week’s Debriefers:

Excellent article as always. **The pilots who posted on this topic are some of the wisest ones I have seen on this subject.** This would be a great topic to have a panel of them talk about it at AirVenture, ABS convention, or NAFI Summit.

I, too, have many stories like them about "weather flying" in both military, corporate and GA flying. As always it concerns the study of the weather conditions, the go/no-go decision, alternates, technology (pre- and post-ADS-B, XM weather), etc. My days in my K35 [Bonanza] with no autopilot, no in cockpit weather and only Mk I eyeballs were more challenging than today. But, as [airborne radar instructional legend] Archie Trammell used to say, "**You have to use the technology to get your eyes on the weather.**" As I have upgraded in equipment I have found that *the weather is still in charge.*

More importantly, **the pilot-in-command is in charge of what he/she does with the weather.** Thank you, Jeff.

See:

<https://thomaspturner.com/wp-content/uploads/2024/05/2024.0502-FLYING-LESSONS-1.pdf>  
<https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-april-25-2024/>

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Jim Lara, Joseph Stadelmann, Dixon Smith, Barry Warner, Wayne Mudge, Joseph Vandenbosch, Ian Campbell, Jay Apt, John Kimmons, Derek Rowan, Michael Maya Charles, Ron Horton, Lauren McGavran, Gerald Magnoni, Amy Haig, Rod Partlo, Brent Chidsey, Mard Sasaki-Scanlon, SABRIS Aviation (Dave Dewhirst), Edmund Braly, Joseph Orlando, Charles Lloyd, Michael Morrow, Abigail Dang, Thomas Jaszewski Danny Kao, Gary Garavaglia, Brian Larky, Glenn Yeldejian, David Yost, Charles Waldrop, Robert Lough



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