

# Thomas P. Turner's Mastery of Flight™

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## FLYING LESSONS for February 6, 2025

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:***

*“PAT 25, do you have the CRJ in sight? PAT 25, pass behind the CRJ.”*

*“PAT 25 has the traffic in sight....”*

**An incredibly tragic** loss of life followed when a Regional Jet carrying 60 passengers and four crew collided with a U.S. Army Blackhawk helicopter carrying a crew of three. Only on the day I write this, six days after the crash, were the last victims pulled from the frigid Potomac waters and the first large sections of wreckage lifted from the muddy bottom. Despite rambling press conferences and the words of a multitude of pundits the actual investigation has just begun. Some factors seem to be obvious, but the full story is yet to be told. I'm certainly not going to try to explain it all here. I will, however, use it as the basis of this LESSON: what you're really saying when you report you **“I have the traffic in sight.”**

*For my international readers:* Check your regulations, but I expect they are very similar to the U.S. rules.

**Any time** you are in Visual Meteorological Conditions (VMC)—even if on an instrument flight plan—you are responsible to see and avoid other aircraft. You might be under positive Air Traffic Control but that doesn't change your see-and-avoid responsibility; if a conflict occurs you are authorized, and expected, to deviate from your clearance as necessary to avoid collision. Notify ATC as time exists.

**Controllers** will provide vectors or other navigation guidance to ensure separation between IFR and participating VFR traffic. This requires the controller to direct aircraft so they avoid each other by defined minimum separation distances and/or altitudes. This may mean being vectored well out of your way to remain separated from other traffic. Each aircraft has a regulatory buffer, a “bubble” of airspace around, above and below it, and it's the controller's job to keep one aircraft's bubble from overlapping with an others'.

**Except,** you can expedite your passage by relieving the controller of this responsibility. If you see the other aircraft and tell the controller you have **the traffic in sight**, both your protective bubble and that of the other aircraft disappear (relative to you, at least). **You** become responsible for maneuvering to avoid the aircraft and its wake turbulence. The controller may confidently assume you'll maintain separation but must still keep an eye on you.

**So what *exactly*** happens when you report traffic in sight? [FAA Order 7110.65AA](#), the so-called “Controller’s Bible,” tells us that in the terminal environment:

7-2-2. Pilot-applied visual separation.

(a) Maintain communication with at least one of the aircraft involved and ensure there is an ability to communicate with the other aircraft.

(b) The pilot sees another aircraft and is instructed to maintain visual separation from the aircraft as follows:

(1) Tell the pilot about the other aircraft. Include position, direction, type, and, unless it is obvious, the other aircraft’s intention.

(2) Obtain acknowledgment from the pilot that the other aircraft is in sight.

(3) Instruct the pilot to maintain visual separation from that aircraft.

(c) If the pilot reports the traffic in sight and will maintain visual separation from it (the pilot must state both), the controller may “approve” the operation instead of restating the instructions.

(d) If aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied.

(e) Advise the pilots if the targets appear likely to merge.

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**In territory more familiar** to most pilots, here is the regulatory basis for earlier statements about the pilot’s responsibility to see and avoid any time conditions permit visual detection of other aircraft. From [14 CFR 91](#):

91.113(b): When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear.

**In the context** of Instrument Flight Rules:

91.181 Unless otherwise authorized by ATC, no person may operate an aircraft within controlled airspace under IFR except as follows:

(b) On any other route, along the direct course between the navigational aids or fixes defining that route. However, this section does not prohibit maneuvering the aircraft to pass well clear of other air traffic or the maneuvering of the aircraft in VFR conditions to clear the intended flight path both before and during climb or descent.

See <https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-91#91.181>

**Further**, the *Aeronautical Information Manual* (AIM) tells us:

Section 4. ATC Clearances and Aircraft Separation

#### **4-4-1 Clearance**

(b) If ATC issues a clearance that would cause a pilot to deviate from a rule or regulation, or in the pilot’s opinion, would place the aircraft in jeopardy, **IT IS THE PILOT’S RESPONSIBILITY TO REQUEST AN AMENDED CLEARANCE**. Similarly, if a pilot prefers to follow a different course of action, such as make a 360 degree turn for spacing to follow traffic when established in a landing or approach sequence, land on a different runway, takeoff from a different intersection, takeoff from the threshold instead of an intersection, or delay operation, **THE PILOT IS EXPECTED TO INFORM ATC ACCORDINGLY**. When the pilot requests a different course of action, however, the pilot is expected to cooperate so as to preclude disruption of traffic flow or

creation of conflicting patterns. The pilot is also expected to use the appropriate aircraft call sign to acknowledge all ATC clearances, frequency changes, or advisory information.

Each pilot who deviates from an ATC clearance in response to a Traffic Alert and Collision Avoidance System resolution advisory must notify ATC of that deviation as soon as possible.

**When weather conditions permit, during the time an IFR flight is operating, it is the direct responsibility of the pilot to avoid other aircraft** since VFR flights may be operating in the same area without the knowledge of ATC. Traffic clearances provide standard separation only between IFR flights.

See [https://www.faa.gov/air\\_traffic/publications/atpubs/aim\\_html/chap4\\_section\\_4.html](https://www.faa.gov/air_traffic/publications/atpubs/aim_html/chap4_section_4.html)

### Let's get real:

- If you see another aircraft **you have the choice** of continuing to accept ATC separation or taking personal responsibility for avoiding the other aircraft to avoid the possibility of a vector that takes you (slightly) out of your way.
- **Be absolutely sure** you have the aircraft you *think* you have in sight, in sight. Don't let down your visual scan and fixate on the one aircraft you're avoiding; **there may be others** and it's always possible you misidentified the aircraft that ATC pointed out.
- If you accept responsibility for visual separation **ATC must still monitor you and the other traffic** and warn you (both) if it appears you'll get too close.
- We're talking about **visual separation**, not "video-game" maneuvering using a cockpit traffic display. ADS-B, TIS, TCAD and even TCAS are designed to make it **easier for you to visually locate the other aircraft** by knowing about where to look. ATC doesn't want to know you have the traffic "on ADS-B" or "on the fish-finder." That does not trigger an ability to reduce the size of the protective bubble controllers are required to maintain between IFR and other participating aircraft. **Don't say you have the traffic in sight unless you have it in sight.**
- **Don't tell controllers you see the traffic if you don't.** I've been tempted to report "traffic in sight" to avoid being "seen" by the controller as unable to make a good visual scan. Luckily I know this is merely my own ego conspiring to put me and others in danger.
- **If you report traffic in sight and then lose sight of the traffic, tell the controller!** You can no longer maintain visual separation and you need the controller to step in to provide collision avoidance.

**The tragic collision** of AA 5342 and PAT-25 was most likely—as is the case with almost most aircraft crashes—to have been the result of several factors. It will take time for investigators to work it all out. That awful night 300 feet above the Potomac, however, reminds us of the awesome responsibility we accept when we utter the simple words, **"traffic in sight."**

Questions? Comments? Supportable opinions? Let us know at [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net).



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## Debrief

Readers write about previous *LESSONS*

Reader Jim Piper answers the call from last week's *LESSONS* derived from a ferry flight that ended in disaster:

Responding to your request for comments on the Cessna 310D ferry flight crash and would I have made the flight the answer is not only no, but HELL NO! For starters **I think it's lunacy to fly a light twin with questionable landing gear operation capability. Performance is too marginal** in light twins of that era **to risk an engine failure without being able to retract the gear.** I'm making the assumption that questionable landing gear operation is why the pilot opted to ferry with the gear down. Second, **the airplane was out of annual**, but for how long I don't think was mentioned. Third, there were just too many issues with the fuel system to guarantee a safe flight!

I've been flying for 65 years, nearly all of my adult life and I'm still here and still flying! One of the reasons (besides a lot of luck) is that **I take risk management and mitigation very seriously.** I received the Wright Brothers Master Pilot Award about 5 years ago and at the time I applied I had been flying **almost 60 years without an accident or violation** including almost 37 years with the airlines. My last 25 years in my A36 which I've flown over 3000 hours. Again, I'm not fooling myself, **a lot of my flying included some good luck but also some diligent risk management.** That's my story and I'm stickin' to it!

Looking at the pieces of your comments:

- Since this airplane was reportedly operating on an FAA-approved and mechanic-endorsed Special Flight Authorization (i.e., "ferry permit"), it would have been legal to fly on that permit with the landing gear extended. As the reader says, however, extended landing gear significantly reduces safety and performance in the event of engine failure. Most light twins—the C310 among them—cannot climb on one engine with the gear extended. The rate of deceleration in a climbs (or even in level flight) on one engine with gear extended is enough to slow the airplane to below  $V_{MCA}$  speed, resulting in rapid loss of directional control and roll-over into a spiral or steep descent. In the very similar Beech Baron I learned, and I've since taught for 35 years, that if an engine fails the rule is "gear down, go down." In other words, pull **both** throttles to idle (to remove asymmetric thrust) while simultaneously **pushing** the controls to enter a nose-low attitude to maintain "blue line" speed ( $V_{YSE}$ ) **and holding** heading with aggressive rudder input. Especially if flying an airplane with known discrepancies (legally, on a ferry permit), you want to stack the deck in your favor. Whether to accept the risk is the Pilot-in-Command's prerogative, but for one I would not want to do it.
- "...the airplane was out of annual..." On first read assumed, erroneously, that it was the out-of-annual status that drove the need for a ferry-permit flight. Reading the report more deeply I found the annual status was probably the result of the landing gear and fuel systems issues and not just an issue of timing. I can see the FAA signing off a ferry permit for landing gear issues (with the caveat of engine failure mentioned above). I'd be very surprised for a ferry flight permit be granted with major discrepancies with the fuel system.
- "...a lot of my flying included some good luck but also some diligent risk management.... I hope I can say the same if I reach 65 years' flying experience. Thank you, Jim.

An anonymous reader adds:

Thank you for this thought-provoking scenario. I'm an "older" student pilot [who's] yet to solo. Not sure I understand the nuances of the report, but from a simple point of view will contribute my thoughts:

1. What might have motivated the pilot to attempt this flight?

Commercial pilots are paid to perform such jobs, ferry a plane. The motivation is income.

2. What outside stresses may have influenced the pilot's decision to fly?

Again, not sure why this question, since the plane was deemed worthy to fly with the special flight permit. (assuming this is correct). *If not*, then stresses may include bills to be paid, the plane's owner may have pressured him with more than the usual payment for such a flight, an over inflated ego [feeling] who can manage any flight?

3. What "red flags" might have caused the pilot to rethink beginning the flight?

The pilot calculated the fuel on board was sufficient for the 250+ NM flight. The flight path was over/near airports where he could have landed to refuel as precaution knowing the leaks.

I don't understand why the pilot did not stop to top off the tanks that could hold fuel. 250 miles with **at least one stop to refuel wasn't going to add much more time to the total day and a simple way to prevent fuel exhaustion.**

**If the plane was given a certificate for the flight by a certified mechanic after inspecting the plane for other issues, then there would have been no red flag.**

*But if* the certificate was given without further inspection, and only as a "free pass" to get from point A to B, then I'd have second thought and not take the job.

4. Once the airplane was airborne, what indications may have confirmed a "go" decision or caused the pilot to divert to land?

*If* he found switching tanks didn't work, or if only one tank had fuel left, or any reason not to believe he had more than sufficient fuel, then why didn't he land to refuel knowing fuel leaking is a problem?

Ask yourself one more, with an honest answer:

5. Knowing only what the pilot would have known before engine start, would you have been tempted to make the flight?

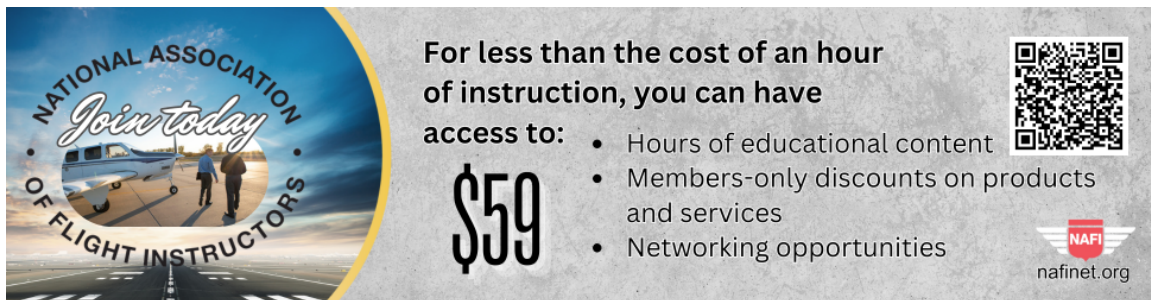
*If* the ferry certificate was by a mechanic after confirming the only serious problems was fuel leakage, then I would go.

*If* the ferry certificate was just issued to allow an unworthy plane to be ferried, then I'm really not sure what I'd do. [I] would want to know much more, but then I'm not paid for that.

This scenario includes a lot of "ifs." Most challenging decisions do. You're right, it's easy to presume that a valid ferry permit, which requires a mechanic to inspect the airplane and endorse the permit stating the aircraft that the aircraft is safe to fly within the conditions listed in the permit, suggests the decision should be "go." I'd be sorely tempted myself. Instead, perhaps we can view a signed ferry permit to be the equivalent of a valid annual inspection in the context of making it legal for the pilot to determine whether it is safe to fly after inspecting it her/himself.

I'm impressed that as student pilot is thinking things through and that she/her is reading *FLYING LESSONS*. Thank you, anonymous reader. You're well on your way to a lifetime of safe flying.

More to say? Let us learn from you, at [mastery.flight.training@cox.net](mailto:mastery.flight.training@cox.net)



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