

Thomas P. Turner's Mastery of Flight

www.thomaspturner.com

FLYING LESSONS for January 4, 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:

A horrific collision could have been far worse. As has been widely reported, a Japan Airlines Airbus A350 collided with a Japan Coast Guard deHavilland Dash 8 on the runway at Tokyo-Haneda Airport. The Flight Safety Foundation's [Aviation Safety Network](#) reports:

The DHC-8, which was on its way to transport supplies to Niigata in response to the Noto Peninsula earthquake which happened the day before, had taxied onto runway 34R via taxiway C5 as JL516 was on final approach.

After touching down, the A350 struck the DHC-8. The nose section of the A350 suffered severe damage. The Airbus slid over the runway for about 1700 meters, until it veered to the right, coming to stop next to the runway just before the intersection with C11, and a fire erupted in both aircraft. All occupants of the A350 evacuated safely, 14 of them suffered minor injuries. The captain of the DHC-8 Japan Coast Guard aircraft also survived with severe burn injuries. The remaining crew of five were killed in the accident.

Communications released by Ministry of Land, Infrastructure, Transport and Tourism indicate that JL516 had been cleared to land on runway 34R. JA722A had been instructed to hold short on taxiway C5. This instruction was read back correctly.

See <https://aviation-safety.net/wikibase/349536>

The vast majority of FLYING LESSONS readers operate in a single-pilot cockpit at least some of the time. Without a second pilot aboard it's entirely up to you to maintain position awareness when taxiing, and to comply precisely with controller instructions without the safety backup of a second crew member to monitor communications and your actions. **Both at tower-controlled and nontowered (pilot-controlled) airports**, there are techniques that enhance precision and safety to avoid runway incursions.

Whether you're U.S.-based or not, the FAA's Advisory Circular [\(AC\) 91-73B](#) contains suggestions for safe taxi operations in single-pilot aircraft. The AC proposes standard operating procedures (SOPs) to incorporate into your aircraft ground operations. Chief among them:

- Review the airport diagram including taxiway "hot spots," which are areas where taxiways and runways converge and/or where the pattern of intersections may introduce confusion or has been known to cause confusion, before boarding the aircraft. Include unusual situations (such as changes in Ground Control frequency as you taxi at large airports) and any NOTAMs (Notices to Air Missions) regarding taxiways,

- Anticipate the likely taxi route from parking to the active runway...but be flexible when given taxi clearance so an expectation mindset doesn't cause you to violate ground control's directions.
- Have the current Airport Diagram available on paper or electronically to monitor your position and route. Adhere to any notes on the chart and with all airport signs.
- Brief your passengers on the "sterile cockpit rule" that is in force during taxi. Exception: if a passenger feels you are on or about to enter a runway without clearance, or sees another aircraft or vehicle on or about to enter a runway you're using, that person should speak up immediately.
- Complete checklist actions before taxi or while you're in the run-up area. Do not run checklists, perform systems checks or program navigators while the airplane is in motion.
- After landing, make no changes to the airplane's configuration or equipment until the entire aircraft has moved past the hold line and onto a taxiway.
- If directed to line up and wait (LUAW) on a runway, expect further ATC communication within 90 seconds. If it's been more than a minute and a half since you were given LUAW clearance and you've not heard back from controllers, get on the radio and ask.
- If you become uncertain of your location on the airport and you are on a runway, exit as quickly as possible while immediately telling controllers you are on a runway and are lost. If you are not on a runway stop immediately and call ATC, then work with controllers as needed to find yourself before moving further.

There are many other recommendations in the Advisory Circular, so [take a look](#).


See https://www.faa.gov/documentlibrary/media/advisory_circular/ac%2091-73b.pdf

My additional suggestions:

- Use georeferenced taxiway charts the same way you'd use a dashboard GPS in your car driving in rush-hour traffic. **Make quick scans** of the chart to confirm and monitor your location and to see what's coming up next, **but keep your eyes outside** the windows 98% of the time, never looking at the chart for more than two or three seconds at a time. Don't use a georeferenced chart like a video game to drive yourself around. **Moving an aircraft on the ground is a heads-up, eyes outside visual operation.**
- Once given taxi clearance, **mark or highlight your cleared taxi route** if the electronic diagram format permits. **Circle hot spots and hold short lines** along your route. This will make them more obvious in your brief scans as you taxi.
- Line Up and Wait (LUAW) is an Air Traffic Control clearance. It does not exist outside the ATC environment, so **don't taxi into position at a nontowered airport then dawdle** before beginning your takeoff roll.
- At a tower-controlled airport when given LUAW clearance, **line up a little off-center from the runway stripes and turn on all lights**, even in the daytime. It's hard to see an aircraft (usually primarily white) and its landing light (white) against runway markings (also white), so by offsetting and with your lights on you'll stand out more readily to an arriving airplane in your blind spot behind you.
- Coming in to land, when you have the runway in sight make a point not only to check that the runway is clear, but **look at the taxiway intersections for other aircraft, and any movement on other runways and elsewhere on taxiways** that might reveal an aircraft about to enter the runway (or a helicopter about to overfly it) with or without permission.

Situational and position awareness, and collision avoidance, begin before engine start and don't end until after engine shutdown. Do everything you can to avoid being the runway incursion problem, and to see and avoid the aircraft that is.

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




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An hour's worth?

Has what you've learned in *FLYING LESSONS* this year been worth it to you? How many hours of "dual" have you received from the weekly reports? If you've learned at least as much as you do in an hour of flight instruction, [please consider donating the amount you'd pay your flight instructor for just one hour of her/his time](#). The proceeds will help cover my out-of-pocket expenses for hosting and delivering *FLYING LESSONS Weekly*. If that's more than you feel it's worth, **donating even \$10 helps cover my continuing out-of-pocket costs**.

CONDITIONS OF FLIGHT	PILOTING TIME		TYPE O		TOTAL DURATION OF FLIGHT
	ACTUAL	PILOT IN COMMAND	DUAL RECEIVED	PILOT IN COMMAND	
5			2.5	2.5	2.5
2			3.1	3.2	3.2
4			1.4	1.4	1.4
7			1.7	1.7	1.7
6			1.6	1.6	1.6
4			3.4	3.4	3.4
7			1.7	1.7	1.7
5	0.0	0.0	3.1	12.3	15.5
6	10.2	0.0	13.7	3.9	65.6
1	10.2	0.0	16.8	16.2	21.1

(Although last week's link worked for some readers, others reported it did not. The link above is to my page that has a link to my PayPal account).

I only make this appeal two weeks each year. Please consider donating what you'd pay for **just one hour of flight instruction**, or even just \$10, to help me cover the costs of hosting, delivering and improving *FLYING LESSONS Weekly*. **Thank you** to all who have contributed through 2023, and all who will help now.

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Debrief: Readers write about recent *FLYING LESSONS*:

Reader and Mastery of Flight supporter Laurie McGavran clarifies:

If I understand correctly, you argue for [gear up emergency landings](#) in most cases for a couple of reasons. First is the destabilization of extending the gear and likely coming up short. Second is the possibility of the landing gear catching on something and stopping the plane abruptly and maybe flipping it. I can even see a cartwheel if one main stops suddenly. My question is, **“What about the propeller?”** If you have power, do you shut off the engine before landing? My Cessna POH doesn't have you shut off the ignition until after touchdown in that case. If you have no power, the propeller may stop vertically or windmill, in which case will it catch the ground with the gear up? I suspect it would; gear up landings damage props. What will the prop striking the ground do? Is it better or worse than having the landing gear hit something or dig in?

The almost hopeless proliferation of gear-up landings and other propeller strikes shows that a propeller blade will bend on impact, so it won't have any real impact on the airplane's direction of motion in a gear-up landing. A windmilling propeller, that is, one not turning engine power into thrust, will bend backward. A propeller developing thrust often curls forward—under power the outer end of prop blade bends forward along the airplane's longitudinal (fore-aft) axis. If the pilot holds the airplane off the surface (as she/he should) the back side of the forward-angled prop tips will impact first, curling forward. That suggests a spinning propeller has no effect on a off-airport, gear up landing. Thanks, Laurie.

See <https://thomaspturner.com/wp-content/uploads/2023/12/2023.1214-FLYING-LESSONS.pdf>

Reader and monthly supporter Erik Hoel writes:

Your [Never Forget article](#) was interesting – really hoping/praying that the wife survives. Nothing could be worse than losing your wife or children in this manner.

The inflight fire on takeoff stuck a chord. About two months ago, I was doing the preflight warmup in my N35 (N542T) with my CFII Earl Schofield when I noticed strange behavior when leaning the engine after startup (at KREI, elevation ~1550'). Typically, at 1000 rpm I would twist (half-turn) the mixture counterclockwise about 17-18 times to hit peak rpm prior to it declining due to overleaning. After about 5-7 half turns, I noticed that rpm never increased, and only started falling. We repeated this process a number of times, with Earl himself giving it a try or two. Given that I hadn't flown in six weeks (due to a partial Achilles tendon tear), we initially **dismissed this as the engine not being run recently** and proceeded to the runup area.

As we completed the standard warmup checklist, we again tried leaning the engine. Same as before. We then **decided that something wasn't right and headed back to the hangar**. We parked the plane and hopped out. The cowling was dripping fairly rapidly an absurd amount of fuel. Yikes.

We grabbed my A&P (Tony Higa – quite excellent) and he checked it out. After pulling the chine panels (not sure what they are called), he located the **sizeable leak from the throttle assembly**. There were several cups worth of fuel that had also pooled in the cowling area where a drain was not available at the low spot – probably 6-12" from the exhaust pipe. He looked at me and said I was having **the luckiest day ever**.

It was really smart to turn around when something seemed off – this was a big life lesson for me.

That was your good fortune—and a great decision. One of the most important *LESSONS* from the accident record is that, if you notice anything unusual or unexpected with the engine before takeoff, cancel your takeoff until you can **both** (1) resolve the issue, and (2) explain why it occurred and why it won't happen again. If that means taking it back to the hangar to visually check, so be it. If you can't **resolve and explain** it yourself, then get a professional—a mechanic—to resolve and explain it for you. Thanks, Erik.

See <https://thomaspturner.com/wp-content/uploads/2023/12/2023.1228-FLYING-LESSONS.pdf>

Reader/supporter Art Utay follows up on our discussion of [four-dimensional flying](#):

More on flying in the fourth dimension. I'm writing this from a hotel room in Athens, Ohio. The plan was to fly home to Hartford, Connecticut from the midwest, stopping (on this trip) at KUNI for fuel and such. The weather across the route was IFR, from 3000 to 5000 AGL, but blindingly sunny and smooth at our 7000 ft cruise.

Letting down, my F33A [Bonanza] picked up light rime at 5000 feet that quickly began to melt after we exited the cloud deck at 3000 feet. From the air, it appeared this two-thousand-foot-deep stratus layer extended a few hundred miles east. I know of many pilots who would launch in conditions like this, but something told me to call Flight Service. The briefer was seeing (and apparently hearing from other pilots) that **what looked to me like 2000 feet of clouds was actually an 8-9000 foot ice generating cloud wall**.

Even if the cloud deck was only 2000 feet thick, was there any intelligence in accruing some light ice, possibly carrying that ice for three hours in cruise, then maybe picking up more on the way down? There was also a possibility of flying away from the icing (going west), then circumventing the front, etc., but it all led back to the same realization: **the risk was way greater than the benefit**.

My wife is calling - she wants to know what local eatery here near Ohio University I'm interested in trying. The weather is looking better tomorrow morning, so we'll get a good night's sleep and see what the day brings.

Happy New Year everyone!

Even in airplanes certificated for flight in icing, it's not wise to continue in icing conditions. Just as most times we use an instrument rating to safely and legally get to "contact" visual conditions whenever possible (for cruise flight and, by definition before reaching minimums on an approach), we should use "known ice" capability to safely and legally get away from ice and to clear it completely off before slowing for landing. Without that capability and that assurance you can escape and remove ice accumulation, you made the right choice. Hopefully your time along in the southern Ohio hills provided a serendipitously relaxing time—time being the fourth dimension—for you and your wife. Happy New Year, Art!

See <https://thomaspturner.com/wp-content/uploads/2023/12/2023.1221-FLYING-LESSONS.pdf>

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NEW THIS WEEK: Jeffery Scherer, Allen Leet, Joseph Victor, Susan Wolber, Glenn Beavers, Bill Farrell, Scott Snider, Ken Newbury, Robert Gates, Surojeet Ghatak, David Peterson, Moshe Glenner, Kent Stones, Mark Davis, Gerge and Amy Steed, Shiva Mayer, Craig Simmons



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Flight Instructor Hall of Fame Inductee
2021 Jack Eggspuehler Service Award winner
2010 National FAA Safety Team Representative of the Year
2008 FAA Central Region CFI of the Year

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