

Thomas P. Turner's Mastery of Flight™

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FLYING LESSONS for January 23, 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:

A planned work trip for my employer in the company A36 and an AIRMET for icing from the surface to 17,000 feet across my entire route of flight turned a two-hour flight into a six-hour drive (each way) for an industry conference, in turn leading to less time for this after-hours pursuit this week. So...on to the Debrief.

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Debrief

Readers write about previous *LESSONS*

Reader, well-known flight instructor and *FLYING LESSONS* financial supporter Mark Sletten writes:

Outstanding article, Tom. You really got me thinking about how I will teach power-on stalls from now on. In fact, I'm going to go back to past students and revisit this topic with them.

Mark's writing about "[Stalls in the Pattern](#)," which I wrote for *Aviation Safety* a few years ago and which *AVWeb* republished this week. This article was the result of reading an AOPA Air Safety Institute study I cite in the piece, and a couple of decades of personal contemplation on why, if power on stalls are seemingly so unrealistic, avoidable and hard to do, **power on stalls are far more common than the power off, base-to-final stalls** that represent less than 4% of the

NTSB total of stalls in the traffic pattern. [Take a read](#) and maybe you'll reconsider how you practice and teach stalls too. Thanks, Mark.

See:

https://www.aviationsafetymagazine.com/risk_management/stalls-in-the-pattern/

Several readers wrote about [last week's LESSONS](#) derived from an unusual scenario that could have been (and was) interpreted by the pilots several ways before a successful landing. Bill Moore begins:

My first thought was CO [carbon monoxide] leaking as well as I started reading your article. Thanks to [my flight instructor] Ron Timmermans, I now fly with the [Lightspeed] Delta Zulu headset and a Sentry 2, both of which provide various methods of warning of CO in the air.

Having had the prop[eller] seal replaced a time or two on my IO-520 [powered V-tail Bonanza] and learning from [my mechanic] Curtis [Boulware] that that seal can be challenging to get it to fit right away, some oil will seep after replacement but my last seal was having its issues leaving lots of grease (oil) on the windscreen. At first glance **it is unnerving to see any liquid like oil on the windscreen, [but] engines usually provide other clues.** Increases in oil temperature, decreases in oil pressure, etc. [I] wonder what the “rest of the story” will be for this accident. Hats off to the instructor as it was with only metal being damage.

I agree. Addressing a failure in flight involves checking all indications and seeing if a pattern emerges. On the other hand, it requires the pilot to **focus on flying with whatever capability remains** and not allowing him/herself to become distracted by trying to figure out “why.” Ultimately to get the airplane down, at night, with a student, with oil obscuring the windscreen and under the extreme stress of an inflight emergency, the instructor and pilot indeed did do a great job. Thank you, Bill.

See <https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-january-16-2025/>

Reader, author, business aviation safety advocate and former Air Traffic Controller Rob Mark adds:

This instructor handled the situation pretty darn well. It was also a great training scenario, except for busting up the airplane a bit.

One thing that jumped out at me in your tale and that you later mentioned was something I often saw when we'd be flying the box at FlightSafety or CAE. They'd throw one problem at us, and we'd try to solve it. Later, they'd throw us another failure, and we'd focus on that. **They almost never tossed multiple problems at us** during the scenario.

That's always a blessing since it's easy to overwhelm the trainee if you give them too many things to focus on. But **if we never see this kind of issue in training, how will a pilot ever learn?**

Sometimes, the crap hits the fan and makes the pilot (s) look in two places or more at the same time. We can't forget that.

Introducing distraction is a key element to effective flight instruction. So is presenting realistic scenarios. Sometimes it's realistic to have multiple emergencies, and throwing a few at the pilot (or crew) sufficiently proficient to handle them builds experience, knowledge and confidence. In the case of the Piper Arrow example that kicked off this discussion there was only one emergency (oil smell and on the windscreen) but **the pilot and instructor interpreted the indications in several different ways** as they gained more information while the scenario progressed. Realistic (or “almost” realistic”) multi-failure presentations in a controlled training environment—such as a simulator—probably help us deal with **accepting new information, discarding old theories and implementing new responses** in cases like this where there is no clear “I see **this**, so **that** is what has happened” answer. Thanks, Rob. Your comment makes me re-think presenting multiple, seemingly unrelated failures in training.

Reader Michael Long continues:

A comment on your *FLYING LESSONS* for January 16th: Having smelled leaking engine oil on hot exhaust manifolds, the hot, burning smell of fiberglass cowling caused by a bent propeller bulkhead creating friction, exhaust, non-aviation electrical fires, etc. I would add that **each of these types of hot smells is quite different**. If the smell difference is noted it could help a pilot have a better response to the emergency at hand.

Noting and using the difference in burnt smells didn't occur to me until after the hot fiberglass event. It smelled similar to very hot automotive brake pads. Just noting a burning smell is not enough. Identifying what material may be burning from the smell can be important for safety and diagnosing maintenance problems.

I agree. This is the sort of thing that can only come from experience. As I've defined here several times before,

- **Experience** is learning from the things that have actually happened to you.
- **Training** is learning from the experiences of others.

Reading and "what if-ing" accident reports like we do in *FLYING LESSONS* is one form of training. Online courses, videos, ground school and actual flight instruction are others. I've only had one "fire" in flight, an electrical overheat that stopped as soon as I turned off the Cessna 152's battery and alternator. I can smell that odor now just because writing this "sparked" a memory. Unfortunately, I don't have any other inflight experience to evaluate burning smells (if that could be considered unfortunate). Readers, **how can we address this in training?**

Reader Brad Wolansky writes:

OK, after 35 years I'm still not a fan of **night flight** at all. Why? Many reasons but the simplest is: **adds more variables for things to go wrong**. That's it. *I don't need more variables*.

Then: it's 14°F outside. That's another life-threatening variable. And singles have notoriously poor heaters sometimes. Why add yet another variable on top of night flight variables?

Poor judgment (what you were getting to in your article comments) to start with. Never should have done the flight.

I've heard legendary aviation educator and *FLYING LESSONS* reader [Rod Machado](#) once say, "Do you know why there are so many more accidents per flight hour at night? Because it's dark!" Rod was joking, but he makes the same point: Most human responses are designed around the ability to see, and at night that ability is severely restricted. Further, engine and other systems **failures are not any more likely to happen at night** (or over mountains, or over water, etc.). **But the consequences of a failure at night** (mountains, water) **are far more dire** because you have far fewer options and in a reduced-sensing environment. I don't fly at night any more. I don't have to be anywhere that bad, and if I do I choose a different way to get there. Did night flight make sense for the Arrow pilot and instructor? Different pilots with different experiences and in different places in their lives will give you difference responses. But **if you choose to accept the added risk, accept and mitigate those very real additional threats**. Thank you, Brad.

See https://rodmachado.com/?aff=659&qad_source=1&gbraid=0AAAAACaSoTphLcsQD6W7fiYbOuGi2td_l&gclid=Cj0KCQIA7se8BhCAARIsAKnF3ryol2QpXnVo06px6EO9wOCMoHY-nfncPiz4dlSIFi8NUVETyBwhHdMaAtzTEALw_wcB

New reader Bill Post wraps up this week's Debrief:

Though I would certainly like to have more information, from what was provided and the experience of 40 years of flying in Alaska, I'll share some thoughts. **Odor** - CO is odorless (though it's possible it was mixed with another gas). **Icing** - I would not expect it at those temperatures and weather conditions. **Night X/C flight instruction** - I have to assume they have wingtip strobes and they will immediately announce the presence of any cloud penetration. **"Brown river"** [of oil on the windscreen] - I've seen that and the engine held together long enough to get to a suitable landing site but my problem was from a failing cylinder.

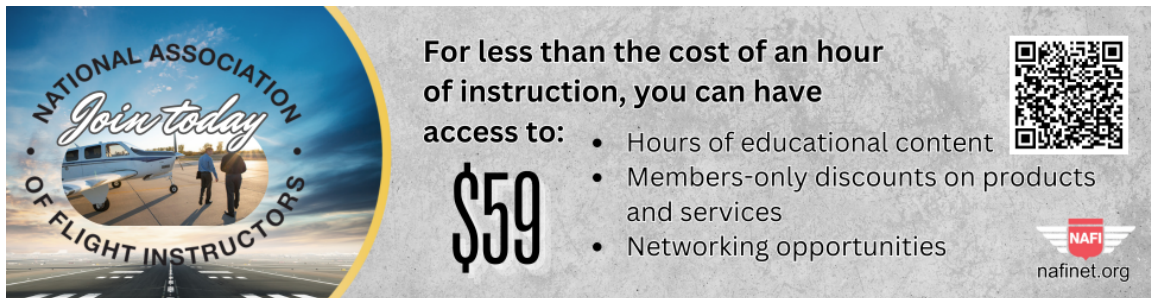
My first thought here is that if they didn't take the same simple precaution we do in Alaska, they could have suffered a **frozen/plugged crankcase breather tube** which would pressurize the crankcase and cause an engine seal to blow. **Hypothermia** - whether airborne or on the ground - though the advice is not always followed, the strong recommendation is that you **wear on the airplane clothing adequate to give you some protection on the ground**. The warm jacket does not have to be zipped up but a warm pair of gloves and a hat are in the pockets; at least light hiking boots replace running or dress shoes, etc.

This is my first exposure to *FLYING LESSONS* and earlier I watched my first [SchiffShow](#). I commend you both for your long term efforts to make us all more aware and better prepared for the joys and responsibilities of being PIC.

Great cold-weather insights, Bill, especially the thought of an ice-blocked crankcase breather tube. That's a distinct possibility, one most pilots and instructors in the Lower 48 might not plan around, maybe even those based in Wisconsin. Thank you, and welcome aboard!

See <https://www.theschiffshow.tv/1/>

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