

Thomas P. Turner's Mastery of Flight

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FLYING LESSONS for February 15, 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:

It's been a while, but a couple of months ago reader Joe McLaughlin wrote:

It would be great to read your take on [this accident](#) in a future *FLYING LESSONS*.

See <https://aviation-safety.net/wikibase/345913>

Here's a synopsis of the cited crash, edited from [the ASN report](#) linked above and the [NTSB preliminary report](#):

On September 25, 2023, about 1250 Pacific daylight time, an experimental amateur-built Sling 4 TSI, N135WT, was substantially damaged when it was involved in an accident near San Pedro, California. The pilot and instructor were seriously injured. The airplane was operated as a Part 91 instructional flight.

According to Automatic Dependent Surveillance Broadcast (ADS-B) data, the airplane departed about 1223. After a flight near the coastline, the instructor turned to a northerly heading to return to the airport. About one minute later it began a descent from an altitude of about 2,400 ft mean sea level. At 1246:46, the pilot reported to air traffic control that he had **“an engine failure”** and requested approval to land. The controller immediately cleared the airplane to land and the pilot acknowledged the clearance. He then asked the pilot for his desired runway and the pilot responded with the “south runways”, referring to runways 29R and 29L. There were no further transmissions from the pilot.

A witness video that recorded the accident flight from about 1249 showed **a trail of white smoke behind the airplane** as it maintained a northerly heading. Approximately 12 seconds later **the smoke ceased and the airplane subsequently began a right descending turn. The airplane then entered a steep right turn in a nose down attitude** and rapidly descended towards the ground as it disappeared from view. The airplane impacted a field about 3 nm southeast from the pilot's destination airport, Zamperini Field Airport (TOA), Torrance, California.

See <https://thomaspturner.com/wp-content/uploads/2024/02/2023.0915-Sing-CA.pdf>

Reader Joe McLaughlin comments:

To me, [this accident] has a number of intriguing circumstances. I'm in the process of building my own Sling TSi, so my personal interest is obvious. There are also an array of conflating factors.

This aircraft was equipped with a Magnum parachute, but it was *not deployed*. Based upon available evidence, it appears it could've been deployed over or around the Pacific coast, but subsequent decision making seems to have eliminated that as an option as the situation

deteriorated. The PIC [Pilot in Command], an instructor in this aircraft, sounds **very calm announcing the engine failure to ATC and the intention to return to the airport**, presumably having every expectation of making the airport environment in an aircraft with favorable glide characteristics. I've read that some have analyzed the winds and other conditions and concluded that **the glide may not have been possible**. From the ADS-B data, **it appears the PIC concluded they would not reach the field, turned to approach the soccer field crash site, and then fell into a stall/spin at low altitude** into the field while attempting to land there.

The environment surrounding the crash site is very densely populated, both residential and commercial, with some dangerous industrial properties (fuel storage facilities), yet there are also two golf courses, at least one of which could have been in range, perhaps both.

The good news is both PIC and student passenger are alive, though both are dealing with critical injuries. The student extracted himself from the wreckage and was conscious, but the instructor (PIC) was unconscious and required personnel who arrived on the scene to assist. It also seems **the airframe was able to absorb a good deal of the impact**, which is good to see for an experimental aircraft.

It's easy for me to armchair quarterback after-the-fact, but with all of the factors here, especially the lack of landing sites, **I'd like to think I would've deployed the parachute as close as safely possible to the shore**, rather than chance a return to the airport with such densely populated and dangerous territory between the shore and KTOA. Are there *LESSONS* to be learned about **where and how best to setup for and initiate a parachute deployment in an aircraft so equipped** when in such a densely populated area?

I'm sure they'll be much more to learn about this once the investigation is complete. Your insights are most welcome in the interim. Many thanks for the great work you do in promoting aviation safety.

My friends in the Cirrus Owners and Pilots Association ([COPA](#)) have the most experience in teaching when and how to use a ballistic parachute. I encourage the several prominent Cirrus instructors among *FLYING LESSONS* readers to add to my response. Much of COPA's expertise is behind its website paywall, so although I'm a COPA member I won't pierce that veil. COPA does publish this quick [review of Cirrus Airframe Protection System \(CAPS\) successes](#). This public page includes the COPA parachute mantra "Pull early, pull often," which is the attention-getting line that encourages pilots of aircraft with a ballistic parachute system to use it at a point in an inflight emergency when it provides the best chance of survival.

A few years ago *FLYING LESSONS* reader and Cirrus instructor Mike Radomsky invited me to review his Cirrus simulator, an experience I documented in my COPA magazine article "[A Bonanza Pilot Flies the Cirrus Sim](#)." This experienced confirmed that the Cirrus community is far more thoughtful and disciplined with CAPS deployment than it is given credit for in the larger flying community. There are times when COPA says you should *not* use the parachute, times you should *use it without hesitation* and, for most of a flight, times you should *consider* CAPS use. [Read my article](#) for more on this briefing.

See:

www.cirruspilots.org

<https://www.cirruspilots.org/Safety/CAPS>

<https://www.cirruspilots.org/Publications/Articles/a-bonanza-pilot-flies-the-cirrus-sim>

But let's focus on the questions posed to me. Should the pilot have deployed the Sling's ballistic recovery parachute over the Pacific beach and not attempted to glide over inhospitable terrain (the heavily developed area around the Torrance, California airport)? How does a pilot best determine when to stop attempting to glide and exercise the parachute option?

Friends who have spent time as flight instructors in the military tell me the one of the hardest things to teach is when it's the right time to "punch out." Flying seems to attract confident problem-solvers who (admit it) fanaticize about using their superior skills to overcome emergencies. We intellectualize the idea that **the airplane should be sacrificed for the safety**

of those aboard, and **when an emergency begins it's the insurance company's airplane**. But the real flying culture lionizes the pilot who gets the burning hulk down with pieces falling off the wings and tail. We want to save the aircraft. In short, bailing out—or using a ballistic parachute—isn't seen as being heroic.

Let's look at the bigger picture, one that encompasses all aircraft, not just the very few with an airframe parachute system. Faced with engine failure away from almost directly over an airport ask yourself two questions:

1. Are you *certain* you can easily glide to the airport or your chosen landing zone?
2. Are there options closer to you—a golf course, a road, an open field, a stretch of beach?

If the answer to (1) is “no” (or “maybe”), you need to immediately aim for an answer to (2). If there are no good options nearby that does not make attempting to glide to the out-of-range airport the best option. It means you have no good options and need to aim the aircraft for the least objectionable option within easy gliding range.

That might mean ditching the airplane in the water in the case of this coastal crash. It means choosing the golf course adjacent to the airport if you're not certain you can make it to the runway. If the airplane has a whole-airframe parachute, that's when you need to use it...while you have enough altitude for it to deploy and are within its deployment airspeed range.

Clearly, this is not the kind of thing you can begin thinking about after the engine begins to smoke and you're going down. You'll only be ready if you think long about this on the ground when you're not under stress.

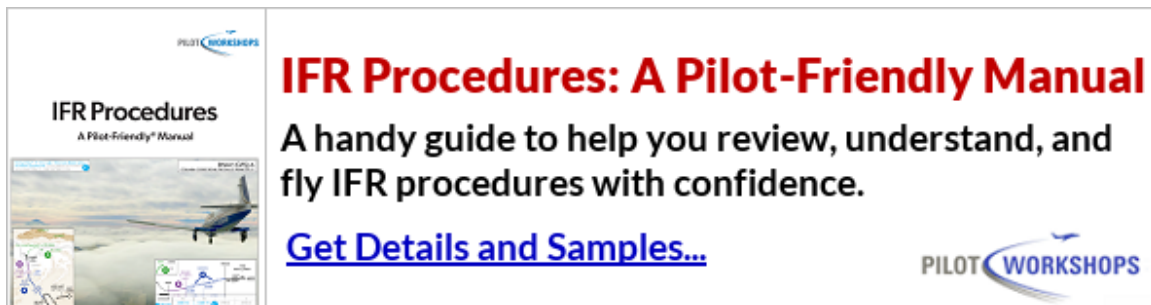
Review scenarios in your head. Talk to other pilots. Discuss this level of aircraft command with your students, and your instructors. Make it at least as likely you'd aim for the beach and not the airport if you had an engine failure where the Sling pilot reported the failure. Make it more likely you'd use a ballistic parachute if you had one instead of trying to stretch a glide over hostile terrain.

We don't rise to the level of our expectations, we fall to the level of our training.”

- Greek lyrical poet [an early term for historian] Archilochus, c. 680-645 BC

Thank you, Joe. That gives us all something to think about. Send us a photo when you have your Sling TSi flying.

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



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Debrief:

Readers write about recent *FLYING LESSONS*:
Frequent Debriefer Tony Johnstone writes about [last week's Debrief](#):

Regarding the “spin stripe”, that was/is pretty common in Eastern Bloc aircraft. The Zlin 526F that I owned for a couple of years back in the early ‘90s had one, as does every Yak I have seen.

Simple and effective way of **ensuring ailerons are indeed neutral in spin recovery**.

Particularly in stick-controlled aircraft, “aileron neutral” may not be immediately obvious. I have seen more than one student unconsciously try to help spin recovery with outspin aileron, which may preclude recovery as *it is actually pro-spin in the opposite direction*. **It doesn't take much.**

Letting go of the stick is the best strategy if a spin is not recovering as expected (unless you have a spin stripe on the panel!).



The stripe surely helps remind pilots to center the stick to keep the ailerons neutral in a stall (and spin). Thank you, Tony.

See <https://thomaspturner.com/flying-lessons-weekly/flying-lessons-for-february-8-2024/>

Reader and airline pilot Jeff Dill answers a question from several weeks back. In light airplanes it's often said landing with the landing gear up is preferable for safety to landing with one gear up and the others down. I agree in the case of light aircraft. The question, though, was what is the guidance in the transport category aircraft world?

I missed it if some other airline guy answered your question about policy when or more landing gear cannot be extended. This verbiage appeared in the MD80 manual and was similar for other fleets.

*“After all methods for extending the gear (normal, alternate, 'g' loading, consultation with Tech Services, etc.) have been exhausted, **it is recommended the landing be made with as many gear extended as possible**, including situations where down and locked indications cannot be obtained.*

Landing with all available gear is preferable to a 'belly' landing because it permits, to some extent, the use of aerodynamic controls, nose wheel steering and / or differential braking for the directional control needed to help stay on the runway. Also, 'belly' landings, pose a greater risk of substantial damage and fire.

In selecting a suitable airport, consider the adequacy of available runways (length, width, obstructions, hazards, etc.), wind, weather, level of emergency equipment at the airport and availability of repair facilities. Foaming of the runway is not recommended.

Prior to landing, the airplane's weight should be reduced as much as possible in order to reduce touchdown speed.”

Thank you very much, Jeff.

Wrapping up this week's report, reader Mike Dolin addresses the [February 8 LESSONS](#) about retracting landing gear for a go-around:

I think this is a good subject for discussion – retracting the landing gear or leaving it down during a go around.

In my own airplane, my last go-around came as a complete surprise. Thinking it was a very normal landing the tower told me to go around. Who am I to argue? The reason was unclear to me. So with landing gear down I flew the circuit with an extended downwind as the tower called my base leg in busy traffic.

Here are my feelings on the subject;

The landing gear has been effectively and safely extended. I see the green light and the mechanical back up indication. I'm totally done with the landing gear and can concentrate on traffic, position in the airport traffic pattern and perhaps some other devices in the airplane. The last thing I need is for the gear system to go wrong when trying to lower the wheels again.

I know that in most GA airplanes there are plenty of things that could go wrong, electrically and mechanically. Why chance it by raising the wheels just to go around the traffic pattern again? There is plenty of power to fly the traffic pattern with the wheels down, and mixing with slower traffic is easier with the extra drag.

As the owner of one having had two gear failures in the 50 years owning this plane, I realize it could happen again. In rental aircraft I've experienced two failures: an alternator in one and a hydraulic leak in another. (I'm always suspect of rental airplanes.)

With respect to all opinions, if they disagree with mine so be it. Arguments on both sides if this issue seem quite logical. **We can listen to each other and decide if we want to change.**

You indeed can argue it either way. My main point was that we should **train the way we fly and fly the way we train.** When practicing go-arounds, when the objective is to establish muscle memory and reinforce safe habits. Putting yourself in a position in the pattern where you do not extend and confirm the landing gear robs you of the practice you're seeking, and reinforces bad habits that are often contributors to gear up landings. That said, I can see where you are attuned to the possibility of landing gear system failure...but do you have that same fear every time you take off and pull the wheels up?

Your final sentence, "we can listen to each other and decide if we want to change," is exactly on point for **Mastery of Flight**. There is almost never *one* correct way to fly an airplane. In all the flight training I provide I try to include this in my Debrief on the techniques I've presented:

Use what you like, modify what you want, and throw away the rest. When you choose a technique, whatever that may be, choose it because you've evaluated other ways of doing things and selected the one that works best for you.

The *one* correct procedure is to **confirm the gear is down on final approach.** Everything else is technique. **Consistency with this one procedure will protect you** if you missed anything earlier regardless of the technique you use. Thank you, Mike.

See <https://thomaspturner.com/wp-content/uploads/2024/02/2024.0208-FLYING-LESSONS-1.pdf>

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