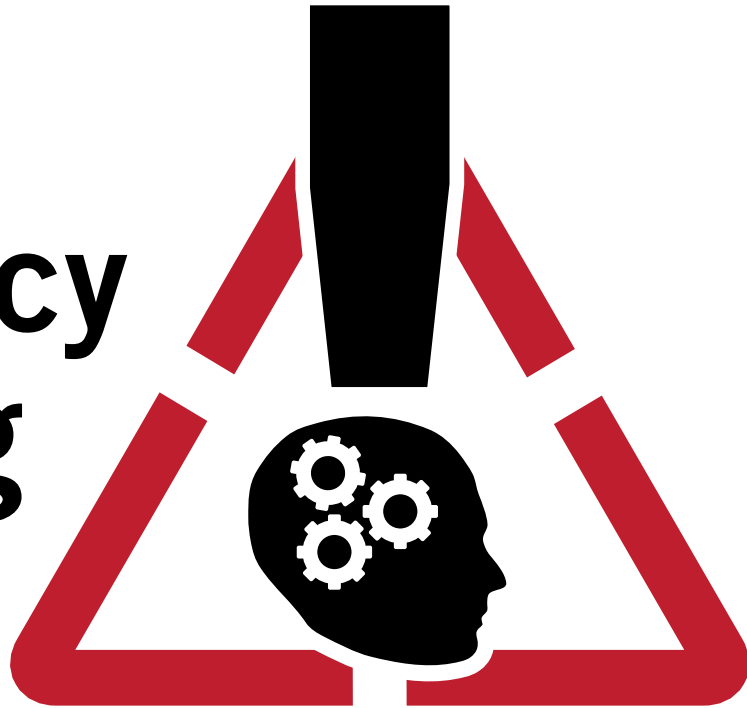


Emergency Thinking

Have a plan before you need it



Greg Koontz, MCFI-A

I've been a professional pilot since I was 18 when I started my career by instructing at a satellite airport near Birmingham, Alabama. That was back in 1972 when 100 octane was about 50 cents, a late model Cessna 150 trainer could be had for about four grand, and lots of people showed up at the airport on Saturdays. I could fly students all day and not get to them all.

In those days there weren't flight academies on every corner offering sidewalk-to-jet training packages. Most of us muddled through general aviation instructing, towing banners, giving rides, flying beat up Apaches on charters, and doing anything else that logged another hour. You flew in stormy weather without radar, airplanes were streaked with oil, and passengers were anyone willing to pay. It was a breeding ground for gremlins.

Like most pilots I've had my share of in-flight emergencies. Most are simple stories of putting gear handles down with no whirring sound to follow or a basic in-flight engine shutdown. Once in a great while something would come along that made my heart skip a few beats and challenged my serenity.

My first such incident happened at age 19 in the summer of 1973. Richard Cornelius, a fellow instructor then twice my age, was a part-timer who worked in real life at the power company (referred to by him as his "dam" job). One of his fellow workers owned a nice 7KCAB Citabria and needed some rental income to justify the payments. Richard struck a deal and had the pretty little Citabria brought to our airport for a trial weekend of rental. Wow, the door had opened to my first chance to fly a real aerobatic airplane! I simply couldn't wait to try this out.

You see, my thirst for aerobatics had so far been teased by what I could do with my J-3 Cub. That means loops, barrel rolls, and spins were about it. Now I was looking at the weekend as a chance to fly a Citabria for as many

hours as I could get in. This thing could actually roll, and it had an inverted system. From my first flight I was obsessed with learning how to fly that thing upside down. The first try was a disaster while I learned the required nose-up attitude for the Citabria, but it wasn't long before I could hold level inverted, and that meant taking up all my buddies to show it off. One such flight was with Steve Strickland, a young guy with a cautious approach to flying. On our inverted flight we got this strange cough out of the 150 hp Lycoming. Steve quickly decided he had enjoyed about all of this he could stand, and we quickly returned to the airport.

Of course, with my enthusiasm on high, I was quick to disregard the engine cough as just "one of those things" engines sometimes do. I had to take one more flight. I was about to accumulate my 1,000th flight hour that weekend, and I, in my usual flair for the dramatic, wanted to cross the 1,000 hour mark inverted.

So, up I went. By that late Sunday afternoon some clouds had rolled in, and a little over 1,000 feet AGL was about all I could get. I had this inverted stuff down pretty good, so as the ol' Hobbs clock was showing the last half of the number before getting me to my goal, I rolled over and settled into a decent level inverted flight path. It would be a matter of seconds before my glorious inverted ride through hour 1,000. A quick glance inside confirmed the sight of the whole next Hobbs clock number, and my mission seemed a complete success. As if to accentuate my achievement, the engine began to slowly bog down and lose power. I immediately rolled right side up, but during the roll the propeller stopped like it had hit concrete. This was not quite how I had planned to start my next 1,000 flight hours.

I was totally flabbergasted. I sat in that seat and stared at the propeller sitting there in the vertical position. A

long moment passed while somewhere deep inside I was trying to come to grips with the idea that I no longer had power at my disposal. I involuntarily moved the throttle forward to the full power position. In my stupor I reached over and pushed the starter button. It was like I really believed that a 12 volt starter could do what a 150 hp engine could not! Still, I trimmed for full cruise speed. I was quickly using up altitude as I continued trying to make sense of the situation. I looked outside for a landing spot. The group of fields I had selected to do my flying over had magically shrunk to postage stamp size. I did a hard 180 degree turn (still at 120 indicated airspeed) only to find myself lined up with a long rectangular stretch of flat cow pasture that had a magical sign at the threshold that read, "Land here, stupid." So I did.

There was no denying it. I had done absolutely nothing to make this picture perfect forced landing happen. I got out of the Citabria, and to complete my belief that the whole thing was surely a divine intervention, I looked behind me at the track of my landing rollout. The field was absolutely full of cows! I don't remember seeing a single cow as I landed. In fact, I don't really remember the landing at all.

Later I would learn that the poor little Citabria had turned the main engine bearing, which in turn closed its source of oil flow and caused the engine to seize. This wasn't caused by lack of proper oil levels or any particular abuse by the pilot. That was lucky for me, because I was a 19-year-old CFI with about half the income of a burger-flipper (I know because that was my previous job) who couldn't fork out enough money to pay for the spark plugs alone.

So, what had happened to my vast flight instructor knowledge of forced landing procedures? What happens to a seemingly competent pilot when an in-flight emergency hits him or her square in the nose? I think it's the difference between knowing how to handle an emergency

situation and actually being prepared for it to occur in the first place. Let's take an "aftermath" look at this fiasco.

(1) The pilot was young, enthusiastic, and driven by his desire to accomplish his ill-fated goals, absent of sound judgment. (2) Evidence of an engine problem was brushed off in favor of the desire to fly. (3) When the weather didn't cooperate, a "got-to-get-this-done" logic was substituted for knowledge of the regulations. (4) A decision was made to fly over possible forced-landing spots, but they were chosen carelessly with no intention of ever really using them. (5) Because the engine failure was never anticipated it came as a complete shock. (6) Said pilot never fell back to his training for help (no procedures, no checklist).

In the world of professional flying, be it military, airlines, corporate, or whatever, we approach emergencies with the idea of preparation. The professional learns the procedures. Not every little move, that's what a checklist is for. What we memorize is the first critical moves needed in a tight situation like an engine failure at takeoff or a fire. Then we go to the simulator and practice it until we have the moves down pat. On the line we include the most critical situations in a pre-landing or pre-takeoff briefing where we discuss the current situation and what

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Logging his 1,000th hour while inverted, Greg rolled upright in time to make an emergency landing.



Greg Koontz



Courtesy FAA

LEFT: Practicing stalls helps maintain emergency thinking. ABOVE: The FAA's Airplane Flying Handbook is a free resource to assist with emergency planning.

we plan to do if trouble happens. That is, we are always getting ready for that worst-case scenario. When the left engine comes apart just as we're lifting the nose gear off the pavement, a prepared pilot will begin a procedure that is right at the top of his thoughts instead of staring at the stopped prop with his chin in his lap.

The sport and typical general aviation flier goes to the airport to enjoy a day of a favorite activity. You just don't commonly hear the captain of a Skyhawk or a Decathlon doing a pre-takeoff briefing on emergency procedures.

Your passengers and many students just don't want to hear this. Many have trouble dealing with the idea of sitting at the end of the runway on every takeoff talking about the worst that can happen. I have students tell me they never practice stalls, they never let an instructor pull the power on them to practice a forced landing, and they definitely don't sit around daydreaming about how they are going to handle a fire. But the truth is, that is exactly what we must do. I think a good pilot does a lot of daydreaming. We should be imagining ourselves handling a cabin fire, an engine failure, a gear collapse, a control malfunction, and an emergency egress. It is far better to think these things through while you're free of panic and have plenty of time. There is no time to make notes when the trees are getting bigger during a real emergency.

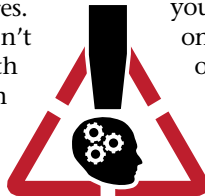
Cruising cross-country on a nice day is not exactly taxing work. I always spend some of that time running a few "what if" scenarios. What would I do if I smell the stench of an electrical fire? How could I restore some power to talk to tower after a complete electrical shutdown without restarting the fire? Should I pull the door release (or canopy latch) before I undo my seat belts in a structural failure? Could I find that fuel cut-off knob that I never use if I detect a massive engine fire? In what order would I do things after an engine failure? Would I remember to

establish best glide speed, find a landing site, turn toward that site, check fuel/mags/pump, and make an emergency call? It's like golf: you've got to do it regularly if you're going to be good at it.

Some emergency preparation warrants actual physical practice. Most of us are aware of the benefits of spin training and practicing unusual attitudes. But, as an example, how about that bailout? Is it getting the same attention?

I'm telling you now that you have to physically walk yourself through the procedure regularly. Have someone hold the canopy/door while you pull the pin or pull the knob and actually see what it takes to accomplish an emergency opening. Pop your belt buckles, move your body, and do what you would do if you were bailing out. Before you ever fly aerobatics with a student or passenger make sure you walk them through the entire procedure. They need to know the moves as well as the plan. Words alone will not do, and the risk of scaring them is outweighed by the passenger's understanding that you are ready to handle an emergency. Here's your assignment: Make a list of risks. Consider things that could happen (fire, engine failure, prop separation, etc.). Daydream your way through what you need to do about these things and check the pilot's operating handbook (POH) if your aircraft has one. If you

Physically practice each procedure to perfection and always safety brief your passenger and yourself before each applicable phase of the flight. Once you have a plan, stick to it.



Kate DeBaun

Keeping an eye on the weather prevents emergencies from happening.

do not have a POH, go to the FAA library and download a copy of the Airplane Flying Handbook (www.FAA.gov/library/manuals/aircraft/airplane_handbook) and refer to Chapter 16. Memorize the required "immediate actions" and make a checklist of the entire procedure. Physically practice each procedure to perfection and always safety brief your passenger and yourself before each applicable phase of the flight. Once you have a plan, stick to it.

I'm big on the idea of mentors, so if you have someone you respect and trust, use that person to help refine your

emergency plans. This sport has a wealth of knowledge sitting around at IAC meetings. Always take advantage of it. And never forget; be prepared (and look out for those cows!).

Greg Koontz is a full-time aerobatic professional and runs his aerobatic school at Sky Country Lodge in Alabama. He is sponsored in air shows by American Champion Aircraft, is an aerobatic competency evaluator (ACE), and sits on the International Council of Air Shows ACE Committee. Address any questions to greg@gkairshows.com.

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