

FLYING LESSONS for August 6, 2009

suggested by this week's aircraft mishap reports

FLYING LESSONS uses the past week's mishap reports as the jumping-off point to consider what *might* have contributed to accidents, so you can make better decisions if you face similar circumstances. In almost all cases design characteristics of a specific make and model airplane have little direct bearing on the possible causes of aircraft accidents, so apply these *FLYING LESSONS* to any airplane you fly. Verify all technical information before applying it to your aircraft or operation, with manufacturers' data and recommendations taking precedence.

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Thanks to everyone who came to my Forum presentations at Oshkosh, or just stopped by to say hello.

This week's lessons:

There are several possible causes for a loss of manifold pressure in turbocharged engines. Some are relatively benign—induction leaks, failed wastegate controllers, sticky wastegates—but some are potentially deadly, such as catastrophic oil loss or exhaust leaks that release blowtorch-like plumes toward fuel lines. Trouble is, you can't usually rule out any of the possible causes from the pilot's seat.

Your only choice when faced with an unexplained loss of manifold pressure in a turbocharged or turbonormalized airplane is to shut it down and land as soon as possible. In single-engine airplanes you might throttle back but retain some power while you spiral down to a nearby landing strip. But single or twin, there is no "continuing as if it was a normally aspirated engine" when turbo boost goes away.

There is no regulatory provision for nonmilitary pilots to delegate pilot-in-command responsibility to somebody outside your cockpit. ATC may provide direction, or you may be part of a mass flight or formation, but in the FAA's eyes (and the realm of safety) this does not. Even if you fly with a certificated flight dispatcher, you are still ultimately responsible for decisions leading to the safe conclusion of a flight. Make your own go/no-go and continue/divert decisions—ask for a runway change if the crosswind's too strong, or break off the approach if you're not comfortable with conditions even if others are landing out of the procedure. Don't get lulled into playing "follow the leader" into a situation beyond your capabilities.

It's frequently said that it doesn't matter whether the airplane is over flat land, cold water, areas of extensive low IFR or mountains, because "the engine doesn't know". The other side of the risk management equation, however, is the consequences of that unlikely engine failure if the pilot is over inhospitable terrain or weather. It's your pilot-in-command decision, of course—but consciously consider the *consequences* of failure before making that choice.

It's human nature to rationalize a seemingly minor issue, especially when flying to a major event. Problems with airplanes almost never solve themselves, however, and sometimes portend more dramatic events later on. The late aviation safety advisor Norm Colvin wrote: "Listen to your airplane—it will tell you when something's wrong."

Take practiced and deliberate actions in your operation of aircraft. Flying is a highly complex task, and many airplanes have complicated or intricate systems...with "gotchas" for the pilot who acts impulsively. Don't let rash action cause you to extend or retract flaps inadvertently, push a comm or nav button incorrectly, or turn on a boost pump when you mean to retract the landing gear. The consequences of impulsivity run from nil to catastrophic. Only in emergencies

do you need to act before you think—react appropriately to changes in flight to avoid creating your own emergencies.

Don't depend on parking brakes to hold the airplane in place for long periods. Changes in ambient temperature may cause brake fluid to contract enough to release parking brake pressure, or expand sufficient to blow out brake seals. Either instance will release the parking brake. Instead, set the brake on shutdown only long enough to chock the airplane or tie it down, then re-enter the cockpit and release the brake to prevent damage. When preparing for flight, ensure the parking brake is set before untying the airplane or removing chocks. Don't leave an airplane unattended when it is neither tied nor chocked.

Questions? Comments? Email me at mastery.flight.training@cox.net

HERE TO HELP

The U.S. Federal Aviation Administration recently published Advisory Circular FAA-H-8083-2, the [Risk Management Handbook](#). The *Handbook's* preface states:

This handbook is a tool designed to help recognize and manage risk. It provides a higher level of training to the pilot in command (PIC) who wishes to aspire to a greater understanding of the aviation environment and become a better pilot. This handbook is for pilots of all aircraft from Weight-Shift Control (WSC) to a Piper Cub, a Twin Beechcraft, or a Boeing 747. A pilot's continued interest in building skills is paramount for safe flight and can assist in rising above the challenges which face pilots of all backgrounds.

I've not yet had the opportunity to read the *Risk Management Handbook*, but the subject is vital to the purpose of *FLYING LESSONS* so I will indeed do so, and report back in a future issue. I encourage all readers to take a look at parts or all of this Advisory Circular and let me know your impressions of its treatment of the subject and, more importantly, if you think it will make a difference in the way pilots conduct and teach safe flying.

See www.faa.gov/library/manuals/aviation/media/FAA-H-8083-2.pdf.

QUESTION OF THE WEEK

August Question of the Week #1

Win your choice of a Mastery Flight Training hat or the instructional DVD *Those Who Won't: Avoiding Gear Up and Gear Collapse Mishaps*. Just answer this Question of the Week to be included in the random drawing for August:

Have you cut back on the amount of flight instruction you receive annually because of the economy? If so, what have you cut out?

Copy and paste the questions with your responses to MFTsurvey@cox.net...then come back to read the rest of *FLYING LESSONS*.

Last week we asked how you get weather updates while en route, and how reliable you have found the information to be. Here's what some of you said:

[I use] XM Weather & Flight Watch on 122.0. XM weather is good when it is working, but you have to confirm the time of the observation [and compare it to current time]. Flight Watch is more cumbersome to use, but very accurate.

I pick up the METARs for airports along my route on my GMX200 as well as keep NEXRAD animated on it with lightning and cell movement when warranted. If all else fails, I radio HiWAS or other FSS frequency. How reliable is the information? Generally quite good. Once in a while I've found that a METAR is sadly out of date or that NEXRAD is more than five minutes old, but not as a rule.

We use a Garmin 496 with an Aviation Satellite Weather Subscription (about \$50 per month). We get very current composite NEXRAD radar images overlaid on the moving map display and current METARs. All very current and covering our entire route of flight. We can also see the time-lapse radar images, which is very useful. We're very pleased with this arrangement and find that we have better weather in our cockpit than does ATC on the ground! Highly recommended! We would not fly without it, especially in the summer thunderstorm season and during the fall IFR season.

I use XM NEXRAD weather with the Garmin 496. I use the nearest function - weather - and read the METAR at stations along the way and those under the green, yellow and red precipitation areas. This provides me with the best "out" under my flight conditions. I can check the weather and TAF at my destination easily at any low workload time during the cruise portion of the flight for planning purposes. This has been generally very reliable. On occasion I have a NEXRAD picture but no METARS. This usually self corrects after a few minutes. I really get a lot of good, practical and useful information from FLYING LESSONS. Thank you.

Let me thank you for the weekly e-mails, they are very good reading and thought provoking. The best way to get wx updates is to look out the window. The nagging question is what is it going to be over the horizon. Used to be, you talked to the friendly local FSS who had local knowledge of the wx patterns in their area. Then the Flight Service Stations were consolidated and Flight Watch became a good way to get updates. Sometimes you could just listen in on 122.0 and hear what you wanted. Now XM WX is the best thing since we lost the people with the local knowledge. We can see what is happening way over the horizon, which is helpful in the Bonanza or in a Jet with airborne radar. In addition XM WX also shows TFRs , and the outlines of airmets and sigmets. Keep up the good work.

While flying G-1000 equipped airplanes, it is easy to get weather updates. Any airport is available to read ASOS, AWOS and ATIS. TAFs are available as is Nexrad radar, winds aloft, lightning strikes, cloud tops, etc. It is extremely reliable and easy to retrieve. It is all displayed on the MFD and doesn't require a frequency change from ATC to call Flight Watch.

I first used the GARMIN 496 looking at the NEXRAD graphics. I then put the pointer on the airports along the way that have automatic weather. I also look at the nearest page to check the nearest airports for VFR/IFR symbols and use their radio frequencies. I then check with in route weather watch (122.0). Most of the above are somewhat accurate; they all have limitations and, as we all know, the weather can change very rapidly!

I use a Garmin 396. How reliable is the information? Very reliable. However you are at the mercy of your satellite connection which can flake out from either end.

Thanks, all, for your observations...and for giving us something to think about.

Questions? Comments? Send your insights to mastery.flight.training@cox.net

Fly safe, and have fun!

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2008 FAA Central Region CFI of the Year



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