FLYING LESSONS for April 21, 2011

suggested by this week's aircraft mishap reports

FLYING LESSONS uses the past week's mishap reports 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. You are pilot in command, and are ultimately responsible for the decisions you make.

If you wish to receive the free, much-expanded *FLYING LESSONS* report each week, email "subscribe" to mastery.flight.training@cox.net.

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This week's lessons:

A student and instructor had just completed a night training flight and were tying down the low-wing, fixed gear rental airplane. Securing the aircraft, one of the pilots noticed a long orange stripe on the bottom of one wing—paint, and *not* a color associated with that aircraft. There was no evident damage, but the foreign paint was a troubling mystery.

Later investigation revealed the paint color identically matched a short, upright obstruction alongside the ramp, but farther down the line and away from the path the night-flight crew had used to exit and return to the tie-down area. The squawk was at least one flight removed from this student and CFI.

What was especially troubling, however, was that the student had preflighted the airplane (in the dark, but using a flashlight), under the supervision of the instructor…but neither noticed the now-obvious "occult" paint before taking off. There was no damage to the airplane's wing, but there could easily have been, damage they might not have noticed before attempting to take off.

I'm as guilt as the next guy when it comes to sometimes wanting to rush a preflight. No, I was neither student nor instructor in this case (or the flight before). But there have been several times when I have had to stop myself, take a deep breath, and slow down to make a *real* inspection of an airplane before launch.

This is when discipline in using a preflight inspection checklist is golden, inspecting part of the airplane and then confirming with the checklist you've not missed anything. Any time you get distracted or rushed, go back to the end of the last section you confirmed by referencing the checklist, and resume your inspection from there.

We inspect airplanes at the worst possible time, when we're ready to fly. Our thoughts can easily drift to the flight itself, to explaining about airplanes to a new passenger, or to discussing the upcoming sessions with a student.

But necessity dictates we preflight, well, *pre*-flight. Why is that? Why are we conducting an inspection at all? Because despite the overall safety of general aviation, regardless of our comfort with flying and/or with the specific airplane, the hard truth is that airplanes are terribly unforgiving of mechanical imperfection. The chance of an engine failure or partially blocked control travel or an errant bird's nest or a structural issue is very slight, but the *consequences* of any of these can be heartlessly severe. My first flight instructor taught me to take the time to thoroughly inspect an airplane because "the airplane is trying to kill you, it's up to you to catch it in time."

It's dangerously easy to rationalize away a squawk found when you're wanting to go fly, too. Would the night-crew have canceled their flight until a mechanic was available to inspect the wing in the light of day if they had seen the paint stripe during preflight? Fight the temptation to

accept a broken airplane because an emotional or scheduling "need" to fly. Unless you're on a combat mission or, as that same colorful instructor told me, "someone is shooting at you," no one *needs* to fly on any given day (or night).

You can avoid some of the pressure of a preflight inspection by conducting an equally thorough post-flight walk-around right after landing and securing the airplane. You won't be rushed to get into the air; any squawks found can be addressed in the time between now and when the airplane is next scheduled to fly. A post-flight inspection is a good time to wipe off bugs and grime while it still comes off easily, instead of making it harder with time.

It's your responsibility, too, to identify any discrepancies after a flight so the next pilot knows beforehand what works and what doesn't, and whether the airplane is airworthy.

But just as the temptation to rush into the air threatens our preflight inspection, so does our zeal to complete our trip to destination, return to more earthly pursuits after a flight, or move on to the next paying student prompt us to rush through a post-flight airplane check, or much more likely, skip it altogether.

Constantly ask yourself, "What am I missing?" as you conduct your preflight inspection.

Instructors (me included), this is our challenge to live by example. Include a post-flight airplane walk-around inspection in all your lessons, flight reviews and instrument proficiency checks. Insist your students evaluate the airplane's condition after a flight at least as much as you require a preflight inspection, and that they diligently report any squawks for their mechanic and/or if someone else may be flying the airplane. Make it as normal for them as a good preflight…don't sign their logbook until they're done. And live up to the example—always assume a student is watching you, and never let them see you violating your own rule.

Comments? Questions? Tell us what you think at mastery.flight.training@cox.net.

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This week we begin review of some scenarios that contributed to the #7 killer in general aviation, attempted visual flight into Instrument Meteorological Conditions (VFR into IMC. Last week I posed some questions to get you thinking about how pilots can get themselves in so deep that they fly into obstacles or lose control of the airplane.

Consider these discussion points as you look at and comment on some of these VFR into IMC scenarios:

1. Is the pilot usually VFR only, or is he/she instrument rated?
2. What type of airplane is the pilot flying (single engine fixed gear, single engine retractable, multiengine, or turbine airplane?)
3. What is the length of the trip being flown?
4. Are there passengers on board the aircraft?

5. Does the pilot lose control of the airplane, or does he/she end up as a Controlled Flight into Terrain statistic by flying, under control, into an obstacle?
6. What day of the week and time of day (morning, afternoon, evening, night) correlates to most VFR into IMC accidents?
7. What other factors do you feel are pertinent?

Three sample scenarios:

1) The pressurized, twin-engine airplane departed under daytime visual meteorological conditions on a cross-country flight from an airport on the east side of a mountain range to a destination on the west side of the mountains. The airplane, which had been receiving flight following, collided with upsloping terrain in a mountain pass while in controlled flight after encountering instrument meteorological conditions. The controller had terminated radar services, anticipation loss of radar coverage in the mountain pass, and notified the pilot to contact the next sector once through the pass while staying northwest of an interstate highway due to opposing traffic on the south side of the highway. The pilot later contacted the controller asking if he still needed to remain on a northwesterly heading. The controller replied that he never assigned a northwesterly heading. No further radio communications were received from the accident airplane. Radar data revealed that while proceeding on a northeasterly course, the airplane climbed to an altitude of 6,400 feet MSL. A few minutes later, radar showed the airplane turning easterly and initiating a climb to an altitude of 6,900 feet. The airplane then started descending in a right turn from 6,900 feet to 5,800 feet MSL prior to loss of radar contact about 0.65 miles southeast of the accident site. A weather observation station located at the departure airport reported a scattered cloud layer at 10,000 feet AGL. A weather observation system located about 29 miles southwest of the accident site reported a broken cloud layer at 4,000 feet AGL. A pilot flying westbound at 8,500 feet through the same pass around the time of the accident reported overcast cloud coverage in the area of the accident site that extended west of the mountains. That pilot stated that the ceiling was around 4,000 feet MSL and the tops of the clouds were 7,000 feet MSL or higher throughout the area.

2) The non-instrument-rated pilot of the fixed-gear, six-seat airplane departed in the early morning hours, before daylight, on a cross-country flight. There was no record of the pilot receiving a preflight weather briefing from either a Flight Service Station or a computer service. About 30 minutes into the flight, the airplane changed its heading twice with accompanying rapid changes in altitude. Shortly thereafter the airplane began a rapid descent and collided with steep mountainous terrain. According to radar analysis, the first-half of the flight took place under visual meteorological conditions; however, during the remainder of the flight the airplane most likely entered both a wave cloud and a layer of broken-overcast clouds that bordered the flight path. Strong northwesterly winds normal to mountain ridges existed in the general area at the time of the accident. These winds would have caused the airplane to experience moderate to severe turbulence, and strong downdrafts due to either mechanical turbulence or mountain waves in the location where the final rapid descent occurred.

3) The pilot of a high-performance, fixed-gear airplane received a weather briefing prior to departing on a cross-country flight. The weather briefer informed the pilot that VFR flight was not recommended along his intended route due to low ceilings, limited visibilities, and precipitation. While following an interstate highway at low altitude, the airplane collided with high-tension power lines that crossed the interstate, and came to rest in trees approximately 130 yards northwest of the lines. Fog, low clouds, snow, and rain were present in the area of the accident site both before and after the accident. The surviving passenger reported that no engine or airframe malfunctions were encountered during the flight.

What situations or pressures might have lulled these pilots into tragedy? Send your ideas on avoiding Top 10 Cause #7 to mastery.flight.training@cox.net.

Professional Guidance for Flight Instructors

Securav.com and the Permanent Editorial Board of the Aviator's Model Code of Conduct (AMCC) announce release of the Flight Instructors Model Code of Conduct (FIMCC). Developed by a team of aviation professionals and drawing upon decades of research and experience, the Code recommends operating practices designed to improve the quality of flight instruction and the safety of flight training operations.

The FIMCC "is an outstanding document that belongs in every instructor's flight kit," said Barry

Schiff, retired airline captain and regular columnist for *AOPA Pilot* magazine. His colleague Rod Machado added, “If a flight instructor follows even a few of these principles, he or she will be a much better person for it. Those that use the model code of conduct to help align their moral compass will make significant contributions to our industry.” And the AOPA Air Safety Institute’s Director of Safety and Chief Flight Instructor, JJ Greenway, commented “Very nicely done! I think if you can get this widely distributed into the aviation education community and get CFIs to heed the advice, it would go a long way toward improving the overall flight instruction experience, particularly for primary students who are just starting out and gaining their first impression of general aviation.”

Read the Code, and consider adopting it for your instructional organization or as a free-lance flight instructor.

See www.secureav.com/FIMCC-Listings-Page.html
Full disclosure: I am a member of the volunteer Permanent Editorial Board of the Aviators Model Code of Conduct organization. See www.secureav.com/PEB.pdf.

Share safer skies. Forward *FLYING LESSONS* to a friend.

Fly safe, and have fun!

Thomas P. Turner, M.S. Aviation Safety, MCFI
2010 National FAA Safety Team Representative of the Year
2008 FAA Central Region CFI of the Year
