FLYING LESSONS for April 22, 2010

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.

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

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This week's lessons:

Just when you think you have it licked is when a crosswind it most likely to get you on landing. As the airplane decelerates its control surfaces become less and less effective at countering the crosswind because there's less air flowing across the rudder, ailerons and elevator; stabilizers provide less stability. Meanwhile the turning forces from a propeller's torque and spin must still be opposed, even at idle power.

A tailwheel airplane will exhibit even more tendency to "go left" as the tail comes down. Although I owned a tailwheel Cessna and have about 400 hours of "conventional gear" time, I've never fully understood the concept of flying wheel landings in gusty winds to provide more "control force" on landing. Even a wheel landing must become a three-pointer eventually, and you'll need the control effectiveness to counter the crosswind as you transition from flight to taxi (I'm sure some readers will teach me something in this week's mail).

What works to compensate for drift at the beginning of your landing roll may not be enough toward the end—so don't accept a wind too strong in which to comfortably taxi.

And this is why it's the *end* of a crosswind landing that is most critical.

Where's the greatest danger in a crosswind takeoff? Not the very beginning of the takeoff roll; even though control effectiveness is least at the beginning, speed is low enough initially the wheels are firmly in contact with the runway, resisting some of the turning motion.

It's when the airplane nears liftoff speed that the crosswind takeoff becomes most hazardous. There's no as much weight on the wheels, but controls are still nearly as ineffective as they are at the *end* of a crosswind landing because the airspeed is about the same.

When considering a crosswind takeoff or landing, then, truthfully consider your ability and that of the airplane to handle the winds at the slowest near-flying part of your trip down the runway. If "you can't handle the truth" then find another runway or, if you're taking off and there's only one runway, delay until conditions improve. Almost everyone who ground-loops or otherwise loses control in a crosswind thinks they can handle it until the moment they become just along for the ride.

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

Debrief: Readers write about recent *FLYING LESSONS*

Reader George Wilhelmsen writes about fuel management:

> Fuel is a critical parameter in airplanes. Unfortunately, you can't always depend on the source. At my airport, the city let the skydive concession take over the fuel sales at the airport. This was akin to letting carnival workers pump AvGas in many pilot's opinions [apologies to my skydiving readers—tt]. Around a year after they took over, I started to see debris in my fuel sumps. I spotted a scoured section in my fuel bladder, and assumed that the bladder had reached the end of life. I "sumped and dumped" until I got clean fuel, and moved on.
>
> Several weeks later we were having an airport meeting with the mayor about complaints about the skydiver behavior. There were the usual infractions (going backwards at pattern altitude at around 200 knots in a King Air, bouncing off hangars, and dropping into the middle of the runway) that had stirred up the pilots. To make a long story short, someone else mentioned the "black crap" in the fuel. Several pilots including me piped up, and it suddenly became a fuel truck issue. When the fuel trucks were inspected, the following was found:
>
> - The steel tank had internal corrosion.
> - The fuel filter canisters were installed upside down, and had no way to drain the water out. (The drain tap was on the top of the filter, not the bottom, due to the orientation)
> - The 100LL filter was imploded from debris, and was passing debris.
> - The 80 octane filter had separated from the filter base, and was bypassing debris.
>
> Had we not got together to gripe about the skydivers, we might not have figured out the common link.
>
> Be careful when you spot fuel problems. Cross-checking with other pilots can help you figure out if it is an issue with your plane, or the fuel supply. While I was never able to prove it, the scouring action of the rust particles probably contributed to the later failure of my fuel bladders. The spot was under the fuel nozzle location where the fuel impinged on the tank while pumping.

Thanks, George.

WAAS is los?

AVweb warns of loss of WAAS approach guidance at 16 Alaskan airports, and possible intermittent WAAS outages across North America after one of the two satellites providing WAAS signals began to "drift out of orbit." The FAA further advised that "a single-point failure situation exists until redundancy [is] restored," which will not happen until late this year. Read *AVweb* for the full report.

See www.avweb.com/eletter/archives/bizav/1616-full.html#202426.

Know the regs

If you ever thought you aren't personally responsible for knowing and complying with Federal Air Regulations (and the same almost certainly holds true under non-U.S. systems), read this recent FAA press release—especially the last sentence:

> The Federal Aviation Administration has proposed a $330,000 civil penalty against North-Aire Aviation, LLC, of Prescott Valley, Arizona, for failing to comply with its FAA pilot school regulations and falsifying records. The FAA alleges North-Aire Aviation's training courses were not valid under the FAA's pilot school regulations and that instructor and student records did not comply with Federal Aviation Regulations. The school also used unapproved training course outlines.
>
> Between April 18, 2008 and August 29, 2008, North-Aire Aviation graduated and issued certificates to at least 18 individuals, certifying those graduates had completed all stages, tests and course requirements satisfactorily.
>
> North-Aire issued graduation certificates and recommended students for pilot certificates and ratings even though the students failed to complete the training specified in the school's course of training, failed to pass the required final test and failed to complete all the curriculum requirements of the course.
>
> North-Aire also failed to correct the discrepancies after they were pointed out, and did not comply with an approved FAA training course or retain all required student records in accordance with FAA regulations. A

company official also knowingly falsified a record indicating an instructor had received a required proficiency check.

"Pilots must receive comprehensive training and taking short cuts isn't acceptable," said FAA Administrator Randy Babbitt. "Schools dedicated to teaching pilots the skills they need to fly safely are required to follow all FAA regulations."

The certificates of all North-Aire students who were improperly trained from April 18, 2008-August 29, 2008 have been suspended [emphasis added]. North-Aire has 30 days from the time it receives the FAA's civil penalty letter to respond to the allegations.

And now for some *good* instruction

Reader Woodie Diamond just bought a vintage Beech Travel Air twin (he had been flying an early Cessna 310), and wrote me about his experience flying home with his instructor after attending his first Sun-n-Fun fly-in:

> No offense, but flight instructors SUCK! Even if they are your best friend. 30 minutes out from [Kissimmee, Florida], all set up in cruise at 6000 feet in IMC, suddenly my trusty S-Tec 50 [autopilot] loses power. While I am desperately trying to keep the airplane level and on course and figure out why the autopilot lost power (circuit breaker all the way over under the right side of the panel), suddenly the airplane yaws left. Crap! I look and the power on the left engine has dropped all the way to the zero thrust level. I reach over to grab the throttles and find [flight instructor] Rock's hand on the left engine throttle. I look over and he's just giving me this *#@$-eating grin. Before I have a chance to tell him what I think about him at that point, he smirks "Fly the airplane." He made me fly that damn thing manually for 10 minutes before he gave me the left engine back. I did such a crappy job that he wouldn't give me the autopilot back until our fuel stop in South Carolina.

I replied:

> Sounds like Rock is sucking to an appropriate level. If you're not lucky you'll thank him some day. For now, thank him for me, for doing his job. FYI, autopilots are not good for dealing with the transition of engine failure—they will try to do the wrong thing when the engine quits, like try to hold altitude or attitude when you need to change it rapidly. But once you have the prop feathered and the airplane at least roughly trimmed for single-engine flight, they do a good job of flying from there. That's why the first step on the engine failure checklist is to mash the red button (autopilot disconnect).

Enjoy the rest of your Travel Air transition, Woodie.

From the ASRS

The April 2010 Aviation Safety Reporting System *Callback* focuses on non-towered airport operations. *Callback* features first-person accounts of safety deviations that—perhaps solely by luck—did not result in a reportable mishap. Read *Callback* to learn from the "near" experiences of others.

See http://asrs.arc.nasa.gov/docs/cb/cb_364.pdf.

Question of the Week

The last couple of weeks we've been asking out mentoring less experienced pilots. Let's continue the thread:

> **What's the most important thing you've learned in flight from a pilot who was not acting in the capacity of a flight instructor at the time?**

Send your response to mftsurvey@cox.net.

Last week's question was:

Is there a task or a topic on which you'd like to be mentored by a more experienced pilot?

Here's what you wrote:

- What I would most like is practical instruction in upset recovery. Next would come better ways to estimate icing potential in IMC, perhaps followed by some basic aerobatic instruction.
- I would benefit from being mentored in two areas: aircraft ownership, and expansion of personal minimums.
- There are many areas in my flying that seem to need help from a more experienced pilot. When I debrief a past flight I can think of the experience and say I will get help with this or that; then go flying and need help with something else. The answer for me is to fly with a more experienced pilot (or CFII) more often; by more often I think at least every two or three months. This being said, I am now on a every three months with another pilot and at least every six months with a CFII.

Looks like there's opportunity for some experienced flight instructors and other mentors! Thanks, readers.

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
