

FLYING LESSONS for November 25, 2009

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:

It's like the FAA learned a new word to describe an old problem. The word "veered" has appeared frequently in recent FAA preliminary reports, along with "departed the runway" and that oldie but goodie, "ground loop".

In just the last two weeks no less than 17 reports of lost directional control have appeared on the FAA's website. Some are on takeoff, some are on landing; some are in tailwheel airplanes, some in tricycle types. Where weather is reported some are in windy conditions, but others are in calm air. Even King Airs, Partinavia twins and Canadair Regional Jets made the "veered" list.

Date	Aircraft Type	Mishap
11/9/2009	C150	Went off the runway after landing
11/10/2009	7KCAB	Went off the runway into the grass on landing
11/12/2009	7GCBC	Ground looped on takeoff
11/13/2009	7GCBC	Ground looped on landing
11/14/2009	KA200	Veered off the runway on landing
11/14/2009	7GC	Veered off the runway on landing
11/15/2009	GC-1	Veered off the runway on landing
11/16/2009	T-18	Veered off the runway on landing
11/17/2009	C172	Veered off the runway on takeoff
11/18/2009	P2004 Bravo	On takeoff, veered off into the grass
11/18/2009	Cassutt	On takeoff, went off the runway
11/19/2009	C185	On landing, ground looped
11/20/2009	CL-600	Ran off the runway into the grass
11/20/2009	Be35	On landing, veered off the runway
11/21/2009	C172	On landing, went off the runway
11/21/2009	SR22	On landing, veered off the runway
11/23/2009	PA18	Ground looped on the runway

Have we forgotten how to maintain directional control on the runway? Mishap reports and reports from readers in the insurance industry give us that distinct impression.

Runway directional control is a product of controlling the airplane through:

- Wind, especially crosswind and/or gusty, variable conditions

- Engine effects, more correctly propeller turning tendencies
- Airplane characteristics, especially landing gear configuration and control authority at low speeds

More importantly, directional control is a function of the pilot's ability to handle the conditions he or she puts the airplane in, at the pilot's current level of capability based on recent experience.

What caused this accident?

On landing the airplane departed Runway 36 and its nosewheel collapsed, damaging the propeller and the airplane's right wing. The wind was from 310° at 15 gusting to 26 knots....

First thoughts turn to lost directional control because of the strong and gusty crosswind. That was indeed a contributing factor, but I submit the accident was caused by **the pilot's decision to attempt the landing at all**.

We don't seem to do a good job of evaluating wind conditions when we near the destination airport. Instructors (and I'm guilty too) don't make wind evaluation as much of an approach briefing item as we do visibility and ceiling when briefing for an IFR approach.

Worse, where instrument approach procedures give us a safe means of getting to a point where we decide whether or not to land based on current conditions, we won't know whether we can control an adverse wind until we actually touch down. Hence we must be even more cautious about the wind than we are about IMC factors, because there is no "decision height" once we commit to landing, and attempting to go around once runway directional control is lost is extremely hazardous. We are *not* committed to land at any particular destination; evaluate the wind, your airplane and your currency before deciding whether or not to land on a given runway.

Touch-and-goes in retractable gear airplanes correlate to a large number of gear collapse mishaps. As I wrote in my *AVweb* article "Rethinking Touch and Goes":

There's a lot to do in the short time on the ground in a T&G, and in retractable gear (RG) airplanes there's the added risk of moving the landing gear switch when you intend to retract the flaps or perform some other function. I personally do not routinely teach T&Gs in RG airplanes, except as a "landing abort" emergency maneuver. Shouldn't RG airplanes' landing gear squat switches protect you from unlocking the landing gear? That's the design, yes. But at least in some cases the answer is no. See my observations on [squat switches and gear collapse mishaps](#).

For more discussion read "[Rethinking Touch and Goes](#)".

See:

www.avweb.com/news/leadingedge/leading_edge_12_rethinking_the_touch_and_go_196642-1.html
www.thomaspturner.net/Squat%20Switches%20and%20Gear%20Collapse%20Mishaps.pdf

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

Coming soon! **FLYING LESSONS** comes to North Texas

Saturday, December 12th, Denton, TX: *FLYING LESSONS* is hosted by Aircraft Precision Maintenance, Inc. The day-long program includes:

- Running out of fuel: Lessons from three case studies
- Keep it on the runway: The lost art of directional control
- A pilot's guide to aviation insurance
- Those who won't: Avoiding gear up and gear-collapse mishaps
- What *really* happens in IMC

Check [here](#) for complete details. Contact Aircraft Precision Maintenance at 940-765-7975 or Wesley@apmtx.com to enroll.

See www.thomaspturner.net/Denton%20Dec%202009.pdf

Watch for additional [FLYING LESSONS events](#) in 2010. Contact mastery.flight.training@cox.net if you'd like to arrange a presentation at your conference, FBO, safety meeting or flying club.

New from the FAA

Pilot Deviation Safety Tip

Notice Number: NOTC2038 **AIRBORNE PILOT DEVIATIONS** What is an airborne pilot deviation? The actions of a pilot that result in the violation of a Federal Aviation Regulation while in flight. Such deviations could result in a loss of separation between your airplane and another or with the next mountain peak!

Why do pilot deviations happen? Pilots don't start off the day by saying, "Today I'm going to go out and commit a pilot deviation." We don't say, "I'm going to fly through some airspace that I'm not supposed to." No, pilot deviations occur because of poor technique, inattention, or failure to plan properly.

The FAA Safety Team wants airmen to be aware of this problem, and encourages pilots to increase their awareness and skills so that aviation safety is enhanced.

Types of IFR Deviations (Listed in order)

- Altitude violations - Failure to maintain the assigned altitude
- Course clearance violations
- Airspeed violations
- Missing a compulsory reporting point

What can be done about it?

- First, have a method to remember and record directions and/or clearances from ATC, and second, execute the action. For example,
 - Write it down,
 - Input it into an altitude alerter or avionics system, or
 - Index the heading bug
- Use current directories, charts, approach plates, and data bases
- If ever in question, call ATC and confirm

Types of VFR Deviations (Listed in order)

- Airspace violations - Flying into airspace such as class B, C, D, prohibited, restricted or TFR's without communication and/or clearance
- Flying VFR into IMC conditions
- Low level flight
- Required aircraft equipment is not installed or operating

What can be done about it?

- Improve flight planning - Know the route and requirements
- Have only current directories, charts and data bases onboard
- Obtain better/complete weather briefings
- Obtain the NOTAM's and TFR's for your route of flight

Plan ahead and be precise in your preparation for flight and in your actions while operating the aircraft. Don't become complacent or make assumptions. Always be alert and aware and continually processing the situation. Ask yourself, "Do I really have everything correct?"

Do you have a question or comment? Email me at mastery.flight.training@cox.net.

Fly safe, and have fun!

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



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