

FLYING LESSONS for August 13, 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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This week's lessons:

There is a correlation between instructional flights in retractable-gear airplanes and gear up landings. Perhaps it's merely a matter of exposure—training flights usually involve a greater number of takeoffs and landings than non-instructional flying. Maybe it's distraction with off-normal activity—by definition flight instruction will introduce tasks and distractions not encountered in normal operation. Most likely, however, it's complacency.

After the third or fourth time around the pattern the pilot receiving instruction (PRI) might remember extending the landing gear...but it was on the *last* trip around, not this time. Or the PRI might fall victim to what I call "[instructor-induced stupidity](#)", a false sense of security when the PRI becomes lax thinking the instructor will keep the flight out of trouble. CFIs, too, are subject to [instructor complacency](#) after numerous takeoffs and landings.

See www.avweb.com/news/leadingedge/leading_edge_instructional_hazards_195386-1.html.

To avoid instructional gear-up landings I recommend pilots and instructors:

- Fly each circuit the same way each time. If you're used to getting final descent performance as a result of extending the landing gear, your airplane simply won't go down if for some reason you forget to put the wheels down.
- Positively confirm landing gear extension, including the *sound, feel, and performance impact* of extended landing gear, in addition to observing and calling out "three green lights" or whatever is appropriate to the airplane you're flying after you (or the PRI) has put down the wheels.
- Crosscheck attitude, power, indicated airspeed and rate of descent on final approach. If you don't have the wheels down at least one of these performance factors won't be right. Catch it in time and you can extend the landing gear. If you're within a few hundred feet of the ground, go around and fly a proper circuit the next time.
- Make all landings to a full stop, with time to debrief and reconfigure during the taxi back for the next takeoff. This divides each circuit into a distinct event, making memory of actions done on one circuit less likely to blur into those done on another.
- Instructors, be extremely vigilant in this high-error-rate activity. If you find your mind wandering from the task get back "in the game" immediately or discontinue the mission.
- Limit the number of circuits during any phase of an instructional flight. I like to go around the pattern no more than three times before breaking off for some air work or other maneuvers. If I want to conduct more landing practice on the same flight, I start the session with two or three circuits, fly away from the airport to do something else for a while, and then end the session with two or three more trips around the pattern.
- Whether PRI, CFI or pilot observer, assume personal responsibility for ensure the airplane is properly configured for landing. Speak up right away if you feel the "pilot flying" has forgotten to extend and verify position of the landing gear.

See also:

www.ipilot.com/learn/article.aspx?ArticleID=74

<https://secure5.webfirst.com/ABS/Store/#ThoseWhoWont>

When landing on a “short” runway (by whatever your standard), the tendency might be to aim for the runway threshold instead of a touchdown zone further along the runway. A wind gust hit at the wrong moment that decreases groundspeed (a headwind component increase) or momentarily decreases indicated airspeed (a shear to an increase in tailwind component), will make the glide angle steepen and could cause a planned “on-the-numbers” landing to come up short.

Be especially cautious of attempting short-field landings or touchdown “on the numbers” in windy conditions; give yourself a cushion for changes in glide path that will occur as winds change close to the surface.

As wind gusts, it tends to turn toward its own left. For example, a steady wind from 270° would tend to be more from 240° or even more off-heading during the gusts. If Rwy 21 makes the most sense for the prevailing wind in our example, because it would “only” have a 50° crosswind, then in the gusts the crosswind may easily become nearly 90° to the runway.

We think about thunderstorms and ice as go/no-go items, but pilots tend to consider wind as a challenge to be overcome, not a factor that delays or cancels a flight. Wind, however, is the greatest contributor to loss of control on takeoff or landing, according to the AOPA Air Safety Foundation’s [Nall Report](#). Seriously consider your currency in crosswind operations, the capability of your airplane, and the direction, strength and consistency of wind conditions to make this critical go/no-go decision.

See www.aopa.org/asf/publications/08nall.pdf.

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

Readers write about *FLYING LESSONS*

Thanks again for what you do.

—Mark Rosenker, former acting chairman, National Transportation Safety Board

Truly, worthwhile reading.

—David A. Darrow, NW Mountain Region, Federal Aviation Administration

August Question of the Week #2

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

Do you participate in the FAA Safety Team (FAASteam) WINGS program? Why or why not?

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

July winners

As promised, two winners were selected from those who responded to July Questions of the Week. Dr. Francisco Roza of New Jersey chose a copy of *Those Who Won't: Avoiding Gear Up and Gear Collapse Mishaps*. Tim and Laura Owens of Ohio fly a Cessna 177RG for pleasure and attended the Mastery Flight Training seminar at Sporty's Pilot Shop last May. They chose a copy of the landing gear DVD as well.

Congratulations all! See <https://secure5.webfirst.com/ABS/Store/#ThoseWhoWont>



Last week we asked whether the economy has affected the amount of flight training you receive. The consensus among readers who responded: No, you've not cut back on training, although business and especially personal flying overall has taken a hit.

Thanks, all, for your response...and I hope the economy soon gets better for us all.

Visualizing lack of visibility

AOPA's Air Safety Foundation has released an animated video depicting the chilling flight of a Piper Cherokee into progressively worsening conditions, leading to a class "attempted visual flight in IMC" crash in the vicinity of thunderstorms. View the narrated video at www.aopa.org/asf/epilot_acc/chi06fa275.html?WT.mc_id=090807epilot&WT.mc_sect=sap. Don't let this happen to you!

Questions? Comments? Send your insights to 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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