

FLYING LESSONS for October 30, 2008

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:

It's extremely unusual for airplanes to land gear up out of an instrument approach. Most IFR pilots learn to use specific power settings and aircraft configurations (flap and landing gear settings) for approaches. In most light aircraft this includes extending the landing gear at the Final Approach Fix (FAF) inbound.

If the pilot flies "by the numbers" he or she should immediately detect forgotten landing gear...the airplane simply will not fly the normal approach profile with the gear up. For a given pitch attitude the airspeed will be high and the rate of descent too small to track a glidepath. If glideslope or WAAS glidepath is maintained the speed will be too great.

Crosschecking power, attitude, airspeed and vertical speed is the best confirmation of landing gear position when flying an instrument approach or a visual final using a glideslope indicator (VASI, PAPI, etc.).

Prior to WAAS the appropriate Decision Height/Decision Altitude/MDA for any straight-in approach with all equipment working was **always** the top set of minimums information on approach charts. With WAAS, however, the appropriate minimums for a given airplane may be the second or third block from the top on most RNAV approach charts, depending on the level of that aircraft's GPS certification. A pilot may use years of experience reading approach charts to mis-read the minimums for an RNAV (GPS) approach. Carefully check and re-check your minimums any time you're briefing for a GPS-based approach procedure.

A common approach mishap scenario occurs when a pilot initiates a missed approach at the MAP, then catches a glimpse of the runway environment and attempts to "salvage" the approach by pulling the power to land. This frequently leads to a gear-up landing; a runway overrun is another common outcome of trying to land when seeing the runway after beginning the missed.

Once you have begun the missed approach commit yourself to completing the missed, even if you later see the runway lights or the runway itself. Once safely in a holding pattern or at Minimum Vectoring Altitude you can decide if conditions are such that you try the approach again.

Achieving calculated aircraft performance requires the pilot adhere to the conditions stated in the landing performance chart or elsewhere in the POH. These charts often are designed to show the **best** possible landing performance, i.e., the conditions described what is essentially a short-field landing, with a high rate of descent on final, power pulled all the way to idle in the flare, and maximum braking begun as soon as the airplane touches down. Any other technique, including what most pilots consider to be "normal" descent, a little power carried into

the flare, and minimal braking on rollout, would result in a longer ground roll and a greater runway distance requirement.

Airspeed control is critical both to arriving in the desired touchdown zone (generally 1000 feet from the threshold or in the first third of the runway, whichever is less) and arriving while at the proper speed to land with minimal “float” and at low enough speed to come to a stop on the available runway.

Even just a “little” fast will significantly increase landing distance, while any touchdown beyond the touchdown zone makes a runway overrun much more likely. If you’re not on your speed target and set up to land in the touchdown zone by the time you’re within about 400 feet of the ground, go around and try again until you get it right, or divert to a longer runway or one with more favorable winds.

Questions? Comments? Send me a note at mastery.flight.training@cox.net.

Fly safe, and have fun!



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