

To: Type Clubs

Background

The General Aviation Joint Steering Committee (GAJSC) was launched in 1997 as part of the industry-government Safer Skies initiative to improve aviation safety. It was reestablished in January 2011 after several years of being dormant. The GAJSC formed the Safety Analysis Team (SAT) to conduct a review of general aviation (GA) accidents and determine the priorities for joint FAA/Industry analysis and risks leading to fatal GA accidents. The program works to improve general aviation safety through data-driven risk reduction efforts that focus on education, training, and enabling new equipment in general aviation aircraft.

A review of the fatal GA accidents from 2001 to 2010 determined that 40.2 percent were identified as “Loss of Control.” The Loss of Control Work Group conducted a detailed analysis of a statistical sample of the 1,259 fatal accidents from this time period to develop and prioritize safety interventions strategies in an effort to reduce the potential for loss of control fatal accidents. From this study the Loss of Control Work Group developed 28 safety enhancements to help address the loss of control issue during the approach and landing phase of flight.

Flight operations data indicates one area where airmen experience loss of control is while executing a missed approach or go-around. The FAA Safety Team (FAASTeam) and the Experimental Aircraft Association (EAA) contacted the Type Club Coalition, as well as the flight departments at Embry Riddle Aeronautical University and University of North Dakota to obtain information pertaining to their common/best practices during missed approaches and go-arounds. A summary of this information is being provided to you which may be helpful in developing training programs or revising operating procedures.

We encourage you to review and share this information with members of your type club, as appropriate. Sharing this information can have a positive effect on safety by raising awareness of best practices for missed approaches and go-arounds and reducing risk associated with these procedures. We welcome any feedback you or your members wish to provide.

If you have any questions or comments, please contact: Kevin L. Clover, FAA AFS-850 – FAASTeam, 5001 Airport Plaza Dr. Ste 100, Long Beach, CA 90815, (562) 888-2020 or kevin.l.clover@faa.gov.

Industry Best Practices

1. There are subtle differences between a bailed landing/go-around and a missed approach, notably, the initial airspeed target and the flap position at the beginning of the procedure. Regularly practice and utilize the checklist procedure for each operation as required.
2. Be prepared for a bailed landing or missed approach at any time during every landing attempt.
3. For instrument approaches, commit to memory what defines the Missed Approach Point (MAP), the initial missed approach heading, and the altitude to reach before making any turns in the missed approach, before passing the Final Approach Fix (FAF) inbound. Note these items on a kneeboard or other quick-reference location for verification if needed, without having to find the data on the approach chart while flying the approach.
4. Use all heading and altitude reminders available in the aircraft on all instrument approaches.
5. Follow airplane manufacturer's guidance and checklists when available.
6. Use preplanned power settings, pitch attitudes and airspeeds when performing a bailed landing or missed approach.
7. When possible, fly the instrument approaches at the missed approach/initial climb indicated airspeed. This means there will be little or no change in trim setting with application of power at the beginning of a missed approach in most airplane types. With a constant trim setting, most airplanes will tend to pitch to the proper attitude and airspeed with the application of missed approach power, making it easier to maintain control during this high-workload transition.
8. Consistent with manufacturer's guidance, retract flaps to an intermediate/approach position if flaps are at full extension when beginning the bailed landing or missed approach procedure.
9. In a retractable gear airplane, retract the landing gear after achieving a positive rate of climb, unless manufacturer's guidance directs delaying gear retraction.
10. Know beforehand the expected trim change necessary after flaps and/or gear retraction.
11. Be proficient and current in the operation of navigational systems, especially the SUSPEND or similar modes of GPS units, before flying an instrument approach using those systems.
12. Act deliberately and positively, without undue delay, but do not be rushed or abrupt when transitioning from descent to climb in a bailed landing or missed approach.
13. As in all other situations, aviate, navigate, and communicate, in that order.

Conclusion

In any procedure, pilots must fly the airplane first. This is especially important in a balked landing/missed approach, where maneuvering at low altitude, rapidly changing aircraft configuration, and communication with ATC can distract pilots from basic coordination and airmanship. It is essential to keep the aircraft flying at an appropriate climb rate, in proper coordination, and on heading.

Pilots should pay special attention to flap retraction stages during the go-around. Large flap deflection during go-around can introduce excess drag that may hamper the aircraft's ability to establish an optimal climb rate; however, overly rapid retraction at low altitude and low airspeed can destroy lift and lead to an aerodynamic stall. Pilots should know the manufacturer's recommended flap retraction speeds for each detent, and pilots of experimental aircraft should develop similar procedures if applicable.

Finally, these procedures need to be practiced to maintain pilot proficiency. Pilots should be encouraged to practice go-arounds as part of their normal "pattern work" routine. Instrument-rated pilots should also practice missed approaches regularly. Go-arounds and missed approaches often occur under stressful or abnormal circumstances, as was the case in several accidents studied by the Working Group. Therefore, pilots should be able to effectively execute the maneuvers from memory so as not to exacerbate an already demanding situation.