



NTSB 2015 MOST WANTED TRANSPORTATION SAFETY IMPROVEMENTS

PREVENT LOSS OF CONTROL IN FLIGHT IN GENERAL AVIATION

What is the issue?

While airline accidents have become relatively rare in the U.S., pilots and passengers involved in general aviation (GA) operations still die at alarming rates every year due to loss of aircraft control by the pilot.

Losing control hundreds or thousands of feet above the ground presents unique and at times, fatal challenges; between 2001 and 2011, over 40 percent of fixed wing GA fatal accidents occurred because pilots lost control of their airplanes.

GA pilot proficiency requirements are much less rigorous than those of airline pilots. GA pilots are much more likely to have longer intervals between training sessions and longer intervals between flights.

GA pilots typically need to complete a flight review, consisting of 1 hour of ground training and 1 hour of flight training, every 24 months. They almost exclusively maintain and improve skills on their own, and their conduct of safe flight depends more on individual abilities and judgment, potentially leaving them unprepared for situations that can lead to loss of control.

Statistically, approach to landing, maneuvering, and climb are the deadliest phases of flight for loss of control accidents.

For example, on August 9, 2013, in East Haven, Connecticut, while attempting a circling approach in and out of clouds during gusty wind conditions, a Rockwell International 690B entered an inadvertent aerodynamic stall/spin and crashed into a house, resulting in the deaths of two children in the house. In another example, on December 12, 2013, near Collbran, Colorado, while maneuvering at low altitude looking for lost cattle, a Piper PA 24-250 entered an inadvertent aerodynamic stall/spin and impacted terrain, resulting in three fatalities onboard the airplane. And, on December 29, 2012, near Lakeside, California, while the non-instrument-rated pilot was climbing an experimental amateur-built Lancair IV-P through cloud layers, the airplane entered an inadvertent aerodynamic stall/spin and completed seven 360-degree revolutions before impacting the ground, resulting in three fatalities onboard the airplane.



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What can be done?

Pilots should avoid conditions that can lead to an aerodynamic stall, especially situations approaching wing critical angle of attack (AOA) and/or decreasing airspeed. This is particularly true at low altitudes, where pointing the nose of the airplane down – an effective recovery technique at higher altitudes – can be a limited option for recovery.

Pilots should seek training to ensure that they fully understand stall phenomena, including AOA concepts, and how elements such as weight, center of gravity, turbulence, maneuvering loads, and other factors affect an airplane's stall characteristics.

Pilots should:

- be prepared to recognize the warning signs of an impending stall, and be able to apply appropriate recovery techniques before stall onset.
- be honest with themselves about their knowledge level of stalls, and their ability to recognize and handle them.
- utilize aeronautical decision making (ADM) techniques and flight risk assessment tools during both preflight planning and in-flight operations.
- manage distractions so that they do not interfere with situational awareness.
- understand, properly train, and maintain currency in the equipment and airplanes they operate. They should take advantage of available commercial trainer, type club and transition training opportunities.

Airplane owners should consider installing an AOA indicator, which, coupled with pilot understanding and training on how to best use it, can enhance situational awareness during critical or high-workload phases of flight.

FAA, aviation advocacy groups, type clubs, and manufacturers, including kit manufacturers, should create and maintain educational initiatives that include general principals, best practices, and operational specifics as they relate to loss of control.

All stakeholders should recognize the importance of their roles in the reduction of loss of control accidents. However, individual pilots remain the critical pieces to that reduction, with both the ultimate responsibility and the ultimate opportunity to reduce these needless accidents through ongoing education, flight currency, self-assessment, and vigilant situational awareness in the cockpit.

Critical changes
needed to reduce
transportation
accidents
and save lives



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NTSB on

The NTSB's Most Wanted List highlights safety issues identified from the NTSB's accident investigations to increase awareness about the issues and recommended safety solutions.

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation - railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the Federal Government and other organizations to provide assistance to victims and their family members impacted by major transportation disasters.

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