Federal Aviation Administration

Fact Sheet – General Aviation Safety

For Immediate Release

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Contact: Alison Duquette or Les Dorr
Phone: 202-267-3883

The United States has the largest and most diverse general aviation (GA) community in the world with more than 300,000 aircraft including amateur-built aircraft, rotorcraft, balloons, and highly sophisticated turbojets. Reducing GA fatalities is a top priority of the Federal Aviation Administration (FAA) and the FAA's goal is to reduce the GA fatal accident rate by 10 percent over a 10-year period (2009-2018). "Loss of Control" continues to be the leading cause accounting for about 70 percent of all fatal GA accidents. Approximately 80 percent of fatal accidents are directly related to human factors.

Similar to commercial aviation, the FAA is focused on reducing general aviation accidents by using a primarily non-regulatory,proactive, and data-driven strategy to get results.

Reducing Risk

The FAA and industry are working together to use data to identify risk, pinpoint trends through root cause analysis, and develop safety strategies. The FAA is using a small airplane risk analysis tool to continuously monitor the safety of GA aircraft. The group is moving toward using de-identified GA operations data in the Aviation Safety Information Analysis and Sharing (ASIAS) program to help identify risks before they become accidents. Data from these programs can also be used for GA Joint Steering Committee (GAJSC) initiatives and Center for Excellence for GA Research (CGAR) studies. The agency also reviews airworthiness directives to identify causal factors and trends.

Formed in the mid-1990s, the GAJSC has a renewed effort to combat GA fatal accidents. The GAJSC is a government and industry group that uses the same approach as the Commercial Aviation Safety Team (CAST). It uses a data-driven, consensus-based approach to analyze safety data to develop specific interventions that will mitigate the root causes of accidents. The group recently proposed 26 safety interventions to address "Loss of Control" during approach and landing.

Other achievements include several Web-based resource guides, including the *General Aviation Pilot's Guide to Preflight Weather Planning, Weather Self-Briefings,* and *Weather Decision Making*, which provides advice to pilots on how to make safe weather flying decisions.

The GAJSC combines the expertise of many key decision makers across different parts of the FAA, various government agencies, and several GA associations. The other federal agencies are National Aeronautics and Space Administration, National Transportation Safety Board (as an observer), and the National Weather Service. Industry participants include Aircraft Owners and Pilots Association, Experimental Aircraft Association, General Aviation Manufacturers Association, National Business Aviation Association, National Air Transportation Association, and others.

Aircraft Design

The FAA is working with industry and other civil aviation authorities to develop a performance-based approach to airworthiness standards for Part 23 airplanes. These airplanes range from small piston-powered airplanes to complex high-performance executive jets. The goal is to set an international standard that advances the introduction of new technology and reduces fatal accidents and certification costs by 50 percent.

Recommendations are being developed by a 55-member rulemaking committee that includes representatives from the FAA, European Aviation Safety Agency, National Civil Aviation Agency of Brazil, Civil Aviation Administration of China, Transport Canada, Civil Aviation Authority of New Zealand, several airplane and avionics manufacturers, and industry groups. The committee expects to finalize recommendations in 2013.

The FAA is also working with manufacturers to build stall resistance into aircraft through the use of improved aerodynamics, limited pitch control capability, and sensed angle of attack to better inform the pilot. This work has contributed to the production of autopilots that provide automatic limiting to help prevent Loss of Control.

New Technology

The FAA is working with manufacturers to define equipage requirements and support NextGen by streamlining the certification and installation of NextGen technologies. The introduction of Automatic Dependent Surveillance-Broadcast (ADS-B) enhances GA pilots' awareness of other traffic and

improves safety in areas that radar cannot reach, such as Alaska and the Gulf of Mexico. The FAA is clarifying the role of data-link weather in GA operations and the use of portable equipment. Other efforts focus on icing “forecast and avoid” and “detect and escape.”

New technologies such as inflatable restraints, ballistic parachutes, weather in the cockpit, angle of attack indicators, and terrain avoidance equipment could significantly reduce GA fatalities. Inflatable restraints and angle of attack indicators have the greatest likelihood of significantly improving safety.

The FAA has streamlined the approval of angle of attack indicators for GA aircraft and is working to promote the retrofit of the existing fleet. Angle of attack indicators provide the pilot with a visual aid to prevent Loss of Control of the aircraft in the critical phases of flight. Previously, cost and complexity of indicators limited their use to the military and commercial aircraft. The FAA is also streamlining the certification and installation of inflatable restraints (air bags) with the goal of making all GA aircraft eligible for installation.

Engagement & Outreach

Airman Testing Standards and Training. To keep pace with advances in technology and educational training methods, the FAA chartered the Airman Testing Standards and Training Aviation Rulemaking Committee (ARC) in September 2011 to engage stakeholders to prioritize and recommend updated content that improves the quality of general aviation airman knowledge, computer testing supplements, guides, practical test standards, and training handbooks. The ARC also considered how to develop test questions that incorporate expert input and review while balancing the need to safeguard test integrity. The ARC’s report is available at www.faa.gov/aircraft/draft_docs (http://www.faa.gov/aircraft/draft_docs) . The FAA will consider the recommendations as it moves forward to more clearly define the knowledge, skills, and risk management practices that the general aviation community needs to operate more safely. The next step is to form the recommended stakeholder group to develop integrated airman certification standards documents, guidance, and test materials for the private pilot and instructor certificates and instrument ratings.

Safety Standdowns. In 2011, the FAA launched a five-year focus on education and outreach. The FAA Safety Team (www.faasafety.gov (http://www.faasafety.gov)) or “FAASTeam” is devoted to decreasing aircraft accidents by promoting a cultural change in the aviation community through education and training. The FAASTeam focuses on teamwork, instruction in the use of safety management systems and risk management tools. In 2011, the FAASTeam held 98 safety standdown events across the country to reach general aviation pilots and mechanics. More than 120 FAA staff plus approximately 3,000 volunteer safety representatives participated. The FAASTeam continues outreach in 2012 through online courses, local seminars, and awards programs. The topics were:

- Positive Flight Attitude – Professionalism should characterize every action a pilot takes. Approach every flight as if your life depends on it, because it does.
  Going Beyond Preflight – A proper preflight is crucial. It’s more than using a checklist; a good preflight should test how well you know your aircraft and its systems.
- En Route Cruise – Avoid complacency, stay ahead of the aircraft, plan for the unplanned, and always—always—maintain situational awareness.
- Maneuvering Flight – Attention to airspeed is critical. Loss of control in maneuvering flight often results from inattention to airspeed.

Online Resources. The FAASTeam’s web site www.faasafety.gov (http://www.faasafety.gov) is a good resource for pilots to help improve their skills and knowledge. The site hosts the FAA WINGS pilot proficiency program. It also contains online pilot training materials and includes courses to help a pilot avoid the pitfalls of VFR flight into Instrument Meteorological Conditions (IMC). Pilots, flight instructors, and mechanics are encouraged to register online.

Amateur-Built Airplanes. Amateur-built and other experimental aircraft, the fastest growing segment of general aviation, were involved in 22 percent of U.S. fatal general aviation accidents over the past five years and account for a bit more than five percent of total general aviation fleet hours. “Loss of Control” remains the leading cause of fatal accidents involving amateur-built aircraft. The FAA published Airmen Transition to Experimental or Unfamiliar Airplanes (Advisory Circular 90-109) based on recommendations from the Amateur-Built Flight Standardization Board. The AC provides guidance and training experience recommendations to owners, pilots and flight instructors who fly experimental airplanes.

Certificated Flight Instructors.The FAA has been working with the flight instructor community to improve GA safety through improved flight instructor training, most notably recurrent training. In December 2010, the FAA met with industry sponsors of Flight Instructor Refresher Clinics (FIRC) and published guidance materials.

Aviation Universities and Experts. Working through the Aviation Accreditation Board International (AABI) and the University Aviation Association (UAA), the FAA is partnering with the aviation academic community to leverage their expertise and develop best practices for improving flight training. As a first step, the FAA and AABI co-chaired an FAA/Academia Symposium in conjunction with AABI’s July 2011 Industry-Educator Forum. Results were presented at the September 2011 UAA Fall Education Conference and at the February 2012 AABI Winter Meeting. These meetings provided a springboard for identifying specific non-regulatory measures that can be used to improve flight training and reduce accidents.

Helicopter Safety. The International Helicopter Safety Team (IHST) leads a government and industry cooperative effort to reduce the international civil helicopter accident rate by 80 percent by 2016. Participants include the FAA, AgustaWestland, the American Helicopter Society International, Bell Helicopter, Bristow Group, CHC helicopter, Eurocopter, the Flight Safety Foundation, the Helicopter Association of Canada, the Helicopter Association International, Shell Aircraft, and Sikorsky Aircraft Corporation.

IHST members also establish international partnerships in countries with significant helicopter operations and work to encourage the overseas industries to carry out accident analysis and develop safety interventions. Worldwide partners include government and industry participants from the United States, Canada, Brazil, Japan, Australia, India, Russia, and multiple countries in Europe and in the Middle East/North Africa region.

Background

The General Aviation Accident Rate. While the number of fatal general aviation accidents over the last decade has gone down, so have the flight hours due to economic factors.

Over the past three years, fatal accidents from Controlled Flight Into Terrain (CFIT) have been reduced by more than 50 percent compared to the previous three years. Those involving “Loss of Control” in flight and during approach and landing are down 20 to 25 percent. Meanwhile, fatal accidents in weather have decreased by nearly 40 percent in the past three years, and those that occur at night are down by about 25 percent.

However, the general aviation fatal accident rate has remained static. In FY 2011, there were 457 fatalities in 271 fatal GA accidents. In 2010, there were 457 fatalities in 270 fatal GA accidents. The accident rate for 2011 was 1.13 fatal accidents per 100,000 hours flown and was 1.10 fatal accidents per 100,000 hours flown in 2010.

The Top 10 Leading Causes of Fatal General Aviation Accidents 2001-2011

1. Loss of Control Inflight
2. Controlled Flight Into Terrain
3. System Component Failure – Powerplant
4. Low Altitude Operations
5. Unknown or Undetermined
6. Other
7. Fuel Related
8. System Component Failure – Non-Powerplant
9. Midair Collisions
10. Windshear or Thunderstorm

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