

Highlights of [GAO-13-442T](#), a testimony before the Committee on Commerce, Science, and Transportation, U.S. Senate

## Why GAO Did This Study

Even with nearly 80,000 flights each day within the national airspace system, there has not been a fatal commercial aviation accident in more than 4 years. The U.S. airspace system is arguably one of the safest in the world, with key aviation stakeholders—the FAA, airlines, airports, aircraft manufacturers, and the National Transportation Safety Board (NTSB)—working together to ensure these results.

As the federal agency responsible for regulating the safety of civil aviation in the United States, FAA is responsible for, among other things: setting aircraft certification standards, collecting fleet and flight activity data, conducting safety oversight of pilot training and general aviation operations, and safely integrating aircraft into the national airspace. As the aviation industry evolves, FAA must remain diligent in its efforts to ensure the continued safety of aviation. In 2010, Congress passed the Airline Safety and Federal Aviation Administration Extension Act, which, in part, called for FAA to better manage safety risks.

This testimony focuses on (1) FAA's aircraft certification process and (2) FAA's use of data to enhance safety and improve aviation oversight. The testimony is based on GAO's previous work and updated with industry reports and information provided by FAA officials.

GAO has previously recommended that FAA address several data quality weaknesses. FAA concurred with most of these recommendations and has taken steps toward addressing some.

View [GAO-13-442T](#). For more information, contact Gerald L. Dillingham, Ph.D. at (202) 512-2834 or [dillinghamg@gao.gov](mailto:dillinghamg@gao.gov).

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## AVIATION SAFETY

### FAA Efforts Have Improved Safety, but Challenges Remain in Key Areas

## What GAO Found

The Federal Aviation Administration (FAA) is responsible for approving the design and airworthiness of new aircraft and equipment before they are introduced into service. FAA approves changes to aircraft and equipment based on evaluation of industry submissions against standards set forth in federal aviation regulations and related guidance documents. In September 2011, we reported that, overall, FAA did a good job following its certification processes in assessing the composite fuselage and wings of Boeing's 787 against its airworthiness standards. However, the approval process—referred to as certification—presents challenges for FAA in terms of resources and maintaining up-to-date knowledge of industry practices, two issues that may hinder FAA's efforts to conduct certifications in an efficient and timely manner. FAA is currently assessing its certification process and identifying opportunities to streamline it.

FAA plans to continue analyzing data reactively to understand the causes of accidents and incidents, and to augment this approach through implementation of a safety management system (SMS). SMS is a proactive approach that includes continually monitoring all aspects of aviation operations and collecting and analyzing appropriate data to identify emerging safety problems before they result in death, injury, or significant property damage. FAA has put in place various quality controls for its data; however, GAO has identified a number of areas where FAA does not have comprehensive risk-based data or methods of reporting that capture all incidents. The following are among the key areas GAO identified as needing improved data collection and analysis.

- **Runway and ramp safety.** Additional information about surface incidents could help improve safety in the airport terminal area, as data collection is currently limited to certain types of incidents, notably runway incursions, which involve the incorrect presence of an aircraft, vehicle, or person on a runway and certain airborne incidents, and does not include runway overruns, which occur when an aircraft veers off a runway or incidents in ramp areas, which can involve aircraft and airport vehicles.
- **Airborne operational errors.** FAA's metric for airborne losses of separation—a type of operational error—is too narrow to account for all potential risk.
- **General aviation.** FAA estimates of annual flight hours for the general aviation sector, which includes all forms of aviation except commercial and military, may not be reliable.
- **Pilot training.** FAA does not have a comprehensive system in place to measure its performance in meeting its annual pilot school inspection requirements.

FAA has taken steps to address safety oversight issues and data challenges in many of these areas. For example, FAA is planning to develop a program to collect and analyze data on runway overruns, but it will be several years before FAA has obtained enough information about these incidents to assess risks. Sustained attention to these data collection and analysis issues will be necessary to ensure that FAA can more comprehensively and accurately assess and manage risk.