Before the Committee on Transportation and Infrastructure
Subcommittee on Aviation
United States House of Representatives

For Release on Delivery
Expected at
9:00 a.m. EDT
Wednesday
April 25, 2012
CC-2012-018

The State of Aviation Safety and FAA's Oversight of the National Airspace System

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Mr. Chairman and Members of the Subcommittee:

Thank you for the invitation to testify on the state of aviation safety and the Federal Aviation Administration's (FAA) oversight of the National Airspace System (NAS). Let me state at the outset that FAA operates the world's safest air transportation system. However, the Agency is encountering significant challenges, such as introducing voluntary safety reporting by air traffic controllers and implementing key provisions of the Airline Safety and FAA Extension Act of 2010.[1] As these initiatives are implemented, FAA must remain vigilant in its oversight to ensure the intended safety improvements are realized. Over the past several years, we have issued multiple reports with numerous recommendations and testified before this Subcommittee on key aspects of aviation that require enhanced oversight. These include increases in operational errors, inspector oversight of air carriers and repair stations, and pilot training and fatigue.

My testimony today is based on our completed and ongoing audit work regarding FAA's efforts in these areas. I will focus on FAA's (1) need for comprehensive data collection and analysis of operational errors and runway incursions, (2) need to strengthen and better use its risk-based oversight approach, and (3) progress and challenges with implementing mandated safety requirements.

IN SUMMARY

FAA is taking important steps to improve safety, such as implementing voluntary safety reporting for controllers, but the Agency has not yet realized the full benefit of these efforts. While enhanced reporting has yielded important data on safety issues like operational errors and runway incursions, FAA will need to ensure that the data are accurate, comprehensive, and effectively analyzed to better identify baselines and safety trends. FAA must also strengthen and better use its risk-based approach for oversight to ensure, for example, that its limited inspector workforce is appropriately deployed where it is most needed and that the highest risk repair stations are targeted for surveillance. Finally, while FAA has made progress implementing important mandated safety provisions such as longer rest periods for airline pilots, the Agency has not implemented other requirements such as improved pilot training standards and a new pilot records database. For FAA to realize the intended safety benefits of the changes it is implementing, the Agency must address the challenges it faces in gathering reliable safety data and using the data to enhance overall safety.

[1] Airline Safety and Federal Aviation Administration Extension Act of 2010, Pub. L. No 111-216, August 1, 2010.

FAA LACKS INTEGRATED DATA COLLECTION AND ANALYSIS NEEDED TO ENHANCE THE SAFETY OF AIR TRAFFIC OPERATIONS

Over the past several years, FAA has rolled out several initiatives to enhance the safety of air traffic control operations in the NAS. A top priority for the Agency is to accurately count and identify trends that contribute to separation losses,[2] especially operational errors—events where controllers do not maintain safe separation between aircraft. However, FAA does not report all operational errors recorded by automated detection systems or reported through voluntary reporting systems. Therefore, FAA cannot determine whether upward trends in reported operational errors are due to more errors being committed, improved reporting, or both. Additionally, while FAA has made progress in improving runway safety and mitigating the most serious runway incursions over the last decade,[3] this trend began reversing early this fiscal year. Total runway incursions also remained relatively constant over the last few years, even though there were fewer air traffic operations. To ensure that FAA better tracks safety incidents and mitigates the risks they pose, strong senior-level oversight and accountability will be needed.

Reported Operational Errors Have Increased Significantly, but Data Collection and Utilization Issues Hinder FAA's Ability To Identify and Address Safety Risks

While FAA data indicate that operational errors increased by more than 50 percent (1,234 to 1,887) between fiscal year 2009 and fiscal year 2010, it is unclear whether this reported increase is due to more operational errors being committed, improved reporting, or both. FAA officials assert that the increase is likely due to improved reporting practices. Specifically, FAA believes that the introduction of voluntary, non-punitive safety reporting programs—such as the Air Traffic Safety Action Program (ATSAP)—has encouraged controllers to voluntarily report operational errors. However, our ongoing work has found no evidence to support FAA's assertion that ATSAP is the primary contributor to the rise in operational errors. Not all potential operational errors reported in ATSAP are included in FAA's reported numbers, due to provisions designed to protect controller confidentiality. For example, in fiscal year 2011, 62 percent (5,279 of 8,473) of ATSAP reports of potential safety events reported[4] were unknown.[5] Instead, our work shows that the

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[2] Separation losses occur when aircraft fly closer than separation standards permit.

[3] FAA defines a runway incursion as any incident involving an unauthorized aircraft, vehicle, or person on a runway. Runway incursions are classified into three categories: (1) operational errors (when the actions of a controller cause an incident); (2) pilot deviations (when the actions of a pilot cause an incident); and (3) vehicle/pedestrian deviations (when the actions of a vehicle operator or pedestrian cause an incident). Serious runway incursions are those in which a collision was barely avoided.

[4] These types of events include potential losses of separation and runway incursions.

[5] In most cases under ATSAP, controllers are not required or obligated to notify facility management when they have caused an operational error to occur.

increase in reported operational errors is due to a number of factors. For example, nearly one-quarter of the reported increase is directly attributable to the revocation of a separation waiver at the Southern California Terminal Radar Approach Control.[6] Additionally, the recent implementation of the Traffic Analysis and Review Program (TARP)[7]-an automated system for identifying separation losses—may account for a portion of the reported increase. The new system represents substantial progress in addressing reporting weaknesses in the terminal environment where previously all separation losses were self reported. If used effectively and consistently, TARP could be a significant tool for identifying trends in operational errors.

There are other concerns surrounding the reported increase in operational errors. Specifically, FAA reports that, between fiscal years 2009 and 2010, operational errors at air route traffic control centers[8] increased by approximately 39 percent, from 353 errors to 489 errors. This increase is concerning because these types of facilities have had an automated system[9] in place for years to detect and investigate each reported error, which would suggest that at least a portion of the increase is likely due to actual errors occurring rather than improved reporting.

FAA must make better use of the existing data on operational errors to investigate incidents, identify trends, and mitigate their risks. For example, while TARP has been installed at all terminal facilities nationwide, FAA requires most terminal radar facilities to investigate only 2 hours of TARP data each month at selected terminal facilities−about 0.3 percent of total terminal monthly hours.[10] Until FAA fully leverages TARP and ATSAP data to investigate operational errors, FAA will not have a complete and accurate account of the number of operational errors in the system. Correcting these deficiencies needs to be a priority since it will take several years for FAA to establish a reliable baseline of operational errors.

FAA will also need to continue its focus on addressing the root causes of those operational errors that pose the greatest risk to safety. The most serious errors[11] rose from 37 in fiscal year 2009 to 55 in fiscal year 2011, a 49-percent increase. In fiscal year 2011, FAA implemented a new strategy[12] to mitigate separation losses that

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[6] The waiver allowed aircraft landing simultaneously to be closer than normally allowed. Air Traffic Safety Oversight Service revoked the waiver because it considered it unsafe, and subsequently, reclassified aircraft landings that occurred under the waiver as operational errors.

[7] TARP is an automated system that detects losses of separation that occur in terminal airspace.

[8] An air traffic control facility that provides air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight.

[9] The Operational Error Detection Program (OEDP) at air route traffic control centers automatically generates an alert when a potential loss of separation is detected.

[10] FAA plans to begin full-time review of TARP data incrementally at terminal facilities nationwide with a goal of full use of TARP by September 1, 2012.

[11] Before fiscal year 2011, FAA tracked operational errors in terms of an A, B, C severity rating with A being the highest or "severe" risk and C the lowest. The rating was based on the proximity of the aircraft to one another.

[12] As part of this strategy, FAA implemented the System Risk Event Rate tool, which is designed to track and evaluate systemwide risk when aircraft fly closer than separation standards permit.

includes plans to reduce the top five highest risk categories of separation losses.[13] The plans include new separation procedures and improved training for controllers. However, the plans are in early stages of implementation, and their effectiveness remains unknown.

FAA Has Made Progress in Implementing ATSAP, but Significant Improvements Are Needed for the Program To Achieve Expected Benefits

FAA implemented ATSAP reporting at all air traffic control facilities in October 2010 and continues to make much needed improvements to the program. As of December 31, 2011, more than 41,000 reports have been collected through ATSAP, but FAA's methods for analyzing the data do not accurately identify root causes and safety trends. For example, causal factors are reported quarterly under ATSAP using terms such as "actions or plans poorly executed" or "training in progress during event," which are too broad to identify root causes and develop specific actions to mitigate them.

Additionally, FAA has not finalized the process to effectively communicate ATSAP data to facility managers so that safety improvements can be made at the facility level. FAA has also not effectively communicated and implemented changes to performance management under ATSAP, including assignment of skill enhancement training to controllers. Improvements in these areas would enhance the Agency's ability to identify and address risks through the use of ATSAP.

FAA's oversight of ATSAP also lacks effective program management controls. For example, FAA has no process to review the effectiveness of decisions made by the program's Event Review Committees (ERC). The ERCs consist of a member from the Air Traffic Organization, a controller union representative, and a member of FAA's Air Traffic Safety Oversight Service. We found that ERCs have not strictly adhered to ATSAP reporting acceptance criteria and that reports were accepted into ATSAP that dealt with air traffic controller conduct, rather than specific performance issues. For example, a report was submitted and accepted into ATSAP concerning a controller watching a personal video player while on duty. These types of conduct issues are inappropriate for inclusion in a confidential safety program such as ATSAP and require management attention.

Additionally, FAA's process for handling reports that involve controller conduct issues lacks management oversight. ERCs can refer the reports that include conduct issues to FAA's Professional Standards Program (PSP)[14] for peer counseling.

[13] The five highest risk categories are (1) arrival aircraft executes an unexpected go around resulting in a conflict with departing traffic, (2) arriving aircraft at the same altitude on parallel runways, (3) aircraft at an altitude other than expected, (4) aircraft in unexpected position resulting in a loss of separation, and (5) aircraft vectored at speed and/or angle of intercept leading to loss of separation.

[14] The Professional Standards Program is defined in Article 52 of FAA's 2009 Collective Bargaining Agreement with NATCA. It is designed to allow bargaining unit employees to address conduct and/or performance issues of their peers before such issues rise to a level requiring corrective action by the Agency.

However, the PSP does not require documenting corrective actions for accountability, transparency, and resolution. More importantly, final decisions regarding matters referred to the PSP are made, in many cases, by bargaining unit employees at the facility level rather than FAA management. Failure to address these issues may lead to the incorrect perception that ATSAP is an amnesty program where reports are automatically accepted, regardless of whether they qualify under the program's guidelines.

FAA Must Remain Focused In Its Efforts To Reduce the Most Serious Runway Incursions

Over the past decade, FAA has made significant progress in mitigating the most serious runway incursions (i.e., incidents in which a collision was barely avoided). Specifically, these incidents have declined from 53 reported in fiscal year 2001 to 7 reported in fiscal year 2011. This drop is likely attributable to both procedural and technological improvements, many as a result of actions taken by FAA's Office of Runway Safety. However, since the beginning of fiscal year 2012 this trend is reversing, with FAA reporting 12 severe runway incursions. Executive level oversight and accountability are needed to ensure that the progress made in past years to reduce runway incursions is sustained.

Additionally, total runway incursions have remained relatively constant over the past 4 years, even though air traffic operations declined by 12 percent over the same period. For example, in fiscal year 2010 there were 966 total reported runway incursions while in fiscal year 2011 there were 954. However, FAA's fiscal year 2011 total runway incursion numbers do not include 157 potential runway incursions that occurred in August 2011 at Charlotte-Douglas International Airport. FAA's Air Traffic Organization Safety Office subsequently reclassified those incidents as "non-events" due to their interpretation of the definition of an incursion and their judgment that safety was not compromised.[15] Had the reclassification not occurred, total runway incursions in fiscal year 2011 would have increased by 15 percent over reported incidents in fiscal year 2010.

IMPROVEMENTS IN RISK-BASED OVERSIGHT ARE CRITICAL TO ENSURE THE SAFETY OF THE AVIATION INDUSTRY

Shifting to a risk-based oversight approach of the aviation industry continues to be a challenge. Because FAA is unlikely to ever have enough safety inspectors to oversee every aspect of aviation, FAA needs to target its inspector workforce to address the greatest risks. For this same reason, FAA needs to continue to advance risk-based

[15] The errors involved the continued clearance of 157 take-offs and landings on a runway that was in close proximity to a disabled commercial airplane that had previously aborted a takeoff and was cleared off the runway onto an adjacent taxiway for maintenance. A portion of the disabled airplane intruded upon the protected area of the active runway environment. The definition of a runway incursion is any occurrence at an airport involving "the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing or take-off of aircraft."

systems for repair stations and manufacturers. FAA deployed a new oversight system for repair stations in 2007, but it still lacks the data and consistent implementation needed to be a true risk-based system. FAA is also increasingly delegating certain functions, such as approving new aircraft designs, to private companies (e.g., aircraft manufacturers) but has not fully addressed weaknesses in its delegation program. Further, it has experienced difficulties in implementing a risk-based tool used to identify which aircraft certification projects represent the highest risk.

Effectively Allocating the Safety Inspector Workforce To Address the Greatest Risks

To effectively oversee a dynamic aviation industry, it is critical that FAA place its approximately 4,300 safety inspectors where they are most needed. A 2006 National Research Council (NRC) study,[16] conducted at the direction of Congress, found that FAA's methodology for allocating aviation safety inspector resources was ineffective. The NRC determined this was partially because FAA's method did not predict the consequences of staffing shortfalls (i.e., what inspections are not being accomplished due to staffing), failed to account for some important factors (e.g., designee oversight) affecting inspector workload, and relied on expert judgment rather than validated data to reach its conclusions. The NRC recommended that FAA develop a new approach, and, in response, FAA introduced a new staffing model in October 2009.

We are currently evaluating the model as part of an ongoing audit of inspector staffing requested by Congress.[17] We have determined that while FAA used the model to support an increase in the number of inspectors for its fiscal year 2012 budget request, it did not fully rely on the number projected by the model because FAA officials are not confident in the accuracy of the model's staffing projections.[18] FAA is working to further refine the model so that it more effectively identifies the number of inspectors needed and where they should be placed to address the greatest safety risks. We expect to issue our report later this year.

Improving Risk-Based Oversight for Repair Stations

FAA's oversight of aircraft repair stations has been a longstanding concern. According to FAA, there are nearly 4,800 FAA-certificated repair stations worldwide that perform maintenance for U.S. registered aircraft. Since 2003, we have recommended that FAA strengthen its oversight of air carriers' contracted maintenance providers by developing a comprehensive, standardized approach to repair station oversight and targeting inspector resources based on risk assessments. In response, FAA implemented a new risk-based system in 2007 to target surveillance efforts to facilities with the greatest risk. However, our ongoing review indicates that

[16] "Staffing Standards for Aviation Safety Inspectors," September 20, 2006.
[17] Congress directed our office to review inspector and analyst staffing issues in Section 205 of the Airline Safety and FAA Extension Act of 2010, Public Law 111-216 enacted August 1, 2010.
[18] For fiscal year 2013, FAA did not request additional inspectors.

the system is not applied consistently; some inspectors do not use the risk assessment process at all, while others use it to varying degrees. Additionally, the system lacks historical data, hindering inspectors' ability to conduct comprehensive trend analyses and prioritize their inspections to repair stations with the greatest risk.

FAA's surveillance at foreign and domestic repair stations also lacks the rigor needed to identify deficiencies and verify they have been addressed. Problems we identified during our 2003 review are still occurring. For example, we found systemic problems persist at repair stations in areas such as inadequacies in mechanic training, outdated tool calibration checks, and inaccurate work order documentation. FAA guidance requires inspectors to review these specific areas during repair station inspections, but at the repair stations we visited, they had overlooked these types of deficiencies. Given air carriers' continued reliance on repair stations, it is imperative that FAA improve its risk-based system to provide more rigorous oversight of this industry. We plan to issue our report this summer.

Weaknesses in the Organization Designation Authorization Program and Risk-Based Resource Targeting System Remain

FAA's oversight of aircraft manufacturers has also not been fully effective—due in part to weaknesses in FAA's Organization Designation Authorization (ODA) program. Under the ODA program, implemented in 2009, FAA has significantly reduced its role in approving individuals who perform work on FAA's behalf by further delegating this approval to private companies (e.g., aircraft manufacturers). Under previous forms of organizational delegation, FAA approved each appointment of personnel working for these companies. Now, once the Agency approves the company's selection process, ODA company representatives select these personnel without FAA concurrence. While FAA maintains some involvement with the selection process during an ODA holder's first 2 years, it is unclear how FAA will be involved beyond that timeframe.

Also, FAA has not provided clear, written guidance on how to oversee personnel appointments. As a result, FAA certification offices are left to define FAA's role in tracking personnel and to determine how manufacturers select those personnel. For example, only three of the five FAA certification offices we visited consulted an FAA database to pre-screen prospective ODA employees' performance histories, and FAA engineers in the field expressed confusion about whether this check would continue beyond an ODA's first 2 years. We identified instances of FAA engineers experiencing pushback from ODA companies when trying to take corrective action against ODA personnel. With less FAA involvement in the selection process, there is also potential risk that an ODA company could appoint unit members with inadequate qualifications or a history of poor performance to approve certification projects. Under ODA, FAA engineers will also have expanded enforcement responsibilities, but the Agency has not ensured that they are adequately trained to perform these

duties. As a result, FAA engineers may not detect and enforce all regulatory noncompliances.

Another new system FAA engineers recently began using is the Risk-Based Resource Targeting (RBRT) system, which is designed to identify which aircraft certification projects would be higher risk. However, RBRT has not effectively measured risk and consequently cannot direct FAA engineers' oversight efforts to high-risk projects because it relies on subjective input from engineers, does not contain detailed data, and has experienced repeated technical difficulties. Engineers reported numerous problems with the system, including a tendency to identify projects as low risk regardless of inputs that suggested higher risk factors, such as a lack of company experience with the design. In response to our June 2011 report,[19] FAA is developing processes to better address and track the performance of ODA personnel, training its engineers to make ODA oversight more effective, and incrementally improving the RBRT system.

FAA MADE PROGRESS IN IMPLEMENTING MANDATED SAFETY INITIATIVES, BUT SIGNIFICANT CHALLENGES REMAIN

FAA has met or is on schedule to meet many of the Airline Safety Act's (the Act) provisions, such as improving pilot rest requirements and establishing better processes for managing safety risks. However, FAA has not met timelines for raising pilot training standards, implementing mentoring programs, providing enhanced leadership skills to captains, and increasing minimum pilot qualifications. FAA also faces challenges in establishing a pilot records database—an important component for enhancing the screening process for pilot applicants. In addition to addressing these issues, FAA needs to provide additional guidance and assistance to industry—especially smaller carriers—in developing and managing new safety programs.

FAA Met Requirements To Address Pilot Fatigue and Advanced Some Air Carrier Safety Initiatives

FAA developed a concerted strategy to meet the Act's timelines and implement new safety programs, including issuing a final rule on crew rest and fatigue, increasing air carrier use of voluntary safety programs, and advancing Safety Management Systems (SMS). In January 2012, FAA updated its flight and duty time regulations for Part 121[20] air carrier pilots to better ensure pilots are rested when they fly. This is a significant achievement for the Agency given that these updates were the first modifications to the regulations since 1985 and that the proposed rule received over 8,000 comments from the aviation industry, mostly opposing the planned requirements.

[19] OIG Report Number AV-2011-136. "FAA Needs To Strengthen Its Risk Assessment and Oversight Approach for Organization Designation Authorization and Risk-Based Resource Targeting Programs," June 29, 2011. OIG reports and testimonies are available on our Web site: www.oig.dot.gov.

[20] 14 CFR Part 121, Operating Requirements: Domestic, Flag, and Supplemental Operations.

Unlike the old rules—which included different rest requirements for domestic, international, and unscheduled flights—the new regulations establish one set of rules that are based on scientific factors, such as the time of day pilots begin their first flight, the number of scheduled flight segments, and the number of time zones crossed. Pilots are also now required to affirmatively state that they are fit to fly and are prohibited from flying during a scheduled duty period when they report fatigue. Other key changes in the new flight and duty time regulations include a 10-hour minimum rest period prior to duty, a 2-hour increase over the previous rule, and 30 consecutive hours free from duty per week—an increase of 25 percent over the previous regulation requirements.

FAA's changes to the flight and duty time regulations represented a substantial safety achievement. However, the regulations do not require air carriers to identify pilots who commute or address issues related to pilot commuting—factors that may significantly contribute to fatigue as many pilots in the industry reside hundreds or even thousands of miles from their duty locations. While FAA considered mandating that pilots arrive in time to receive a pre-flight rest period in the proposed rule, it stated that the requirement would be difficult to enforce and would not guarantee responsible commuting.

In March 2011, FAA completed a congressionally required review of Part 121 air carriers' use of voluntary safety programs[21] and later devised a plan to help smaller air carriers implement these safety programs. Data gathered through voluntary safety programs can be used to identify the trends and patterns that represent risks. The Act targets air carrier participation in three such programs that FAA oversees:

- *Aviation Safety Action Plan (ASAP)*, which encourages air carrier and repair station employees to voluntarily report safety information that may be critical to identifying potential precursors to accidents without fear of enforcement or disciplinary action.

- *Flight Operations Quality Assurance (FOQA)*, which collects and analyzes digital flight data generated during scheduled flights to provide greater insight into performance and operations.

- *Advanced Qualification Program (AQP)*, which provides a voluntary alternative to traditional training standards by incorporating data-driven quality control processes to refine pilot training based on the individual's proficiency and identified training needs.

As of March 2011, FAA reported that 68 percent of Part 121 air carriers participated in at least one voluntary safety program and just under half of those carriers used

[21] Voluntary Safety Programs, Response to P.L. 111-216, Sec. 213, January 28, 2011.

more than one. Our ongoing analysis of current FAA data as of January 2012 shows a continued rise in voluntary safety program use—70 percent of Part 121 air carriers have at least one program, up from 59 percent 2 years ago. Further, for the same time period, 47 percent of Part 121 air carriers have multiple programs, compared to 36 percent 2 years ago.

Increasing use of voluntary safety programs is important for Part 121 air carriers of all sizes, as the data generated by these programs is a large driver of SMS, a systemic and comprehensive process for managing safety risks. Specifically, SMS provides operators with business processes and management tools to examine data from everyday operations, isolate trends that may be precursors to incidents and accidents, and develop and carry out appropriate risk mitigation strategies in those areas.[22] FAA has nearly completed its efforts to issue a final rule on SMS for air carriers. The Agency released a proposed rule in October 2010 and, according to the Act, has until August 2012 to issue a final rule.

FAA has also taken steps to assist air carriers in developing SMS before the completion of the final rule. FAA developed an SMS pilot program in 2007 to develop implementation strategies and oversight responsibilities. SMS pilot projects allow FAA and air carrier input in developing guidance and provide carriers an opportunity to share best practices and lessons learned. Currently, 83 percent of all Part 121 air carriers (73 of 88) are participating in the pilot program.

The new system, when fully implemented across all carriers, has the potential to significantly advance safety. However, there is industry concern that the SMS rule will not be scalable for air carriers of varying size and operational complexity, posing a larger burden on smaller air carriers for its implementation. Currently, 14 of the 15 carriers that are not yet participating in FAA's SMS pilot program are smaller carriers (with less than 20 aircraft). Additionally, air carriers are concerned about public disclosure of SMS-collected data. Most of these concerns focus on whether the data can be used in legal proceedings. FAA's proposed rule does not address these concerns.

FAA Must Meet Act Provisions on Pilot Training and Ensure Air Carriers Meet Safety Standards

Despite the important progress FAA has made in implementing the Act's requirements, the Agency has encountered delays in issuing key rules impacting pilots—specifically, those addressing new air carrier training standards, mentoring and leadership programs, and screening and qualification enhancements. The Agency also faces challenges in establishing a new centralized, electronic pilot records

[22] As directed in the Airline Safety and FAA Extension Act of 2010, we are currently evaluating FAA's efforts to implement the Aviation Safety Information Analysis and Sharing (ASIAS) system, an important tool that collects and analyzes data from multiple databases to proactively identify and address risks that may lead to accidents.

database to provide air carriers with better background information on pilots they intend to hire. Finally, concerns remain about code sharing and the extent to which mainline carriers are monitoring the operations of their code share partners.

Crew Training. FAA is more than 6 months overdue on issuing a final rule revising pilot training requirements—the delay is due in part to significant industry opposition to the rule. This rule is an important safety initiative that will require pilot training programs to incorporate flight simulators and enhance pilots' abilities to work together during emergencies. In January 2009, FAA issued the Notice of Proposed Rulemaking (NPRM). However, FAA received extensive industry comments, primarily related to stakeholders' concern that the rule imposes overly prescriptive training hours rather than bases pilot training on skills most needed to safely perform flight operations. As a result, FAA issued a second proposed rule in May 2011. The revised proposal requires more thorough ground and flight training for pilots on how to recognize and recover from stalls, as well as remedial training for pilots who perform poorly in training.

With advancements in pilot training on the horizon, it is important that FAA enhance its oversight practices. For example, under the new rule, carriers will be required to provide remedial training for pilots with performance deficiencies. However, it will be difficult for FAA to gauge the effectiveness of this training unless it corrects weaknesses we identified in our December 2011 report.[23] We found that FAA was not tracking poorly performing pilots due to inadequate guidance for its inspectors on how to gather data on pilot performance. Currently, FAA guidance requires inspectors to compare pilot proficiency checks that they have performed against those conducted by the carriers' check airmen.[24] However, we questioned the viability of this requirement since nearly all pilot proficiency checks are conducted by check airmen, not FAA inspectors. As a result, FAA inspectors may not have sufficient data to make a meaningful comparison.

Pilot Mentoring. FAA is also more than 8 months overdue in meeting a mandated timeline to issue a proposed rule requiring that air carriers establish pilot mentoring, leadership, and professional development committees to improve pilot performance. This is due in part, to a lengthy delay in developing an appropriate balance between the costs and benefits of these programs. FAA intends to issue a proposed rule that it believes will generate benefits by reinforcing safe flying practices.

Pilot performance issues are longstanding safety concerns—pilot performance was cited in 7 of the 10 major accidents that occurred over the last decade, indicating that the quality of training, professionalism, and mentoring is important to safety. In

[23] OIG Report Number AV-2012-027, "New Approaches Are Needed To Strengthen FAA Oversight of Air Carrier Training Programs and Pilot Performance," December 20, 2011.
[24] Pilots employed by air carriers who evaluate a pilot's proficiency during training and examinations.

February 2011, we also reported[25] that poor pilot performance—such as poor decision-making, inadequate aircraft control, improper flying techniques, and a disregard for operating procedures—is a high causal factor in airline accidents, a finding consistent with the National Transportation Safety Board's (NTSB) comprehensive review of the major accidents.

Pilot Qualifications. FAA is also behind in issuing a final rule to substantially raise airline pilot qualifications by August 2012. FAA issued a proposed rule in February 2012 and expects to issue the final rule by August 2013—1 year after the August 2012 mandate. FAA's rule would require first officers to hold an Airline Transport Pilot (ATP) certificate,[26] requiring 1,500 hours of pilot flight time—up from the current requirement of 250 hours for a commercial pilot's license. Given the significant increase in pilot flight hours that the Act mandates for the final rule, FAA has encountered industry opposition. The proposed rule would also require first officers to have an aircraft type rating, which involves additional training and testing specific to the airplanes they fly.

Effectively implementing the new rule will require FAA to ensure carriers are ready to transition to these new pilot qualification requirements. However, at two regional air carriers we visited as part of our ongoing review, more than 75 percent of current first officers did not have an ATP. Yet, neither carrier had developed a plan to ensure these pilots would be able to meet the enhanced requirements by the deadline, nor had the local FAA inspectors followed up with these carriers to assess their ability to comply with enhanced requirements. Additionally, FAA has not taken steps to determine the potential impact the new ATP requirement would have on current pilots, and the Agency's ability to handle an influx of ATP certification testing will be important for safety oversight.

Pilot Records Database. FAA met the Act's milestone to begin development of a centralized electronic pilot record database that will include records previously maintained by air carriers. The Act did not prescribe any additional future milestones for the database's implementation, but the Agency has recognized that rulemaking will be necessary to fully develop the intricacies of this electronic system and is in the preliminary stages of writing this proposal. However, to create a robust, complete, and secure data repository that carriers can use when hiring pilots, FAA must overcome three key challenges:

- First, FAA must address what level of detail should be captured from air carrier pilot training records, such as whether recurrent flight training will be included.

[25] OIG Controlled Correspondence CC-2009-074, "Letter to Senators Rockefeller, Hutchison, and DeMint Regarding Commercial Aviation Accidents, Pilot Experience and Pilot Compensation," February 9, 2011.

[26] Airline Transport Pilot (ATP) Certificate is the highest level of pilot certification. Pilots certified as ATP are authorized to act as pilot-in-command of an aircraft in commercial airline service. Additional eligibility requirements are contained in 14 CFR 61.153.

The Act stipulates that comments and evaluations made by check airmen be included in the database; however, industry is highly protective of these data and opposes including them in the database. FAA must also address how to include historical air carrier pilot training records into its new system. Gathering the historical records while keeping them standardized across sources will be difficult because information in the records varies based on differences in air carrier training programs, and the record retention period varies from 5 years to indefinitely depending on the carrier.

- Second, FAA does not expect to issue a final rule and launch the database for at least another 2 years, so FAA will have to determine how to transition from current recordkeeping practices mandated by the Pilot Records Improvement Act (PRIA)[27] to the new database without disrupting the flow of information. Until air carrier records are fully integrated into the new database, carriers may need to continue requesting data from both FAA and previous employers.

- Finally, a pilot records advisory committee identified multiple challenges for FAA in accessing records from the National Driver Register (NDR)[28] and incorporating them into the database. For example, FAA must decide how to ensure data reliability of pilot records and resolve conflicting data retention policies for the database versus the NDR.

Code Sharing. The 2009 Colgan accident raised important questions about code sharing, including how closely the mainline carriers monitor the operations of their regional counterparts. These concerns were evident in FAA's 2009 Call to Action plan for airline safety, which encouraged mainline and regional carriers to collaborate on code share safety programs and mentoring. However, FAA has yet to issue guidance to operators involved in these arrangements to encourage safety collaboration. FAA also needs to assess the potential safety impacts of code share agreements—where one air carrier sells and issues tickets for flights operated by another carrier. While code share agreements can reduce major carrier costs and enhance customer service, FAA faces challenges in overseeing these agreements. A key concern is that since FAA considers domestic code share agreements to be purely economic arrangements, the Agency does not voluntarily review domestic code share agreements and therefore is not aware of whether the performance incentives or penalties contained within these agreements could result in unintended safety vulnerabilities.

[27] Pub. L. No. 104-264, Section 502 (codified at 49 U.S.C. § 44703(h)-(j)).

[28] NDR is a central information system that allows states to electronically exchange information on licensed drivers through a computerized network.

CONCLUSION

FAA has overcome a number of challenges and taken important steps to meet its primary mission of ensuring aviation safety. However, to address root causes of safety problems and fully measure their impact, FAA needs to fine-tune its approach to how it collects, verifies, and uses safety data. The number of operational errors committed each year will also require scrutiny and continual oversight by FAA's top level management, other key stakeholders, and Congress. FAA will also need to make improvements to its risk-based oversight approach to ensure the safety of the aviation industry, including the allocation of safety inspectors, oversight of contractors performing aircraft maintenance, and improved oversight of repair stations. Finally, as FAA moves forward with implementing provisions of the Airline Safety Act, it must continue to promote carriers' use voluntary reporting systems effectively and ensure they have the data needed to make sound hiring decisions. We will continue to work with FAA and the Department to ensure the safety of the National Airspace System.

This concludes my statement. I would be happy to address any questions from the Chairman or Members of the Subcommittee at this time.

EXHIBIT. STATUS OF KEY AIRLINE SAFETY ACT REQUIREMENTS

Section	Initiative	Milestone	Deadline	Milestone Status
202	NTSB Recommendations Report	Report	Annual	Met, On-Target
203	FAA Pilot Records Database	Database Development	10/30/2010	Met
		Report	2/1/2012	Missed & Overdue
204	Air Carrier Safety & Pilot Training ARC	ARC Report	7/31/2011	Met
		ARC Report	7/31/2012	On-Target
205	FAA Inspector Staffing	Start OIG Review	5/1/2011	Met
206	Mentoring, Development, and Leadership	NPRM	8/1/2011	Missed & Overdue
		Final Rule	8/1/2013	To Be Determined
207	Crew Pairing and CRM	Study	8/1/2011	Completed Late – 8/26/2011
208	NTSB Training Recommendations	ARC Formation	11/29/2010	Met
		NPRM	8/1/2011	Met
		ARC report	11/30/2011	Completed Late –3/7/2012
		Final Rule	8/1/2013	To Be Determined
209	FAA Rulemaking on Training	ARC Formation	9/30/2010	Completed Late – 11/16/2010
		ARC Report	8/1/2011	Completed Late – 9/23/2011
		Final Rule	10/1/2011	Missed & Overdue
210	Code Share Ticket Disclosure	Amend 49 U.S.C. § 41712	N/A	Met
211	FAA Safety Inspections	Perform one per year	Annual	Met
212	Fatigue & Commuting	NPRM	2/1/2011	Met
		Final Rule	8/1/2011	Completed Late – 1/4/2012
		Risk Management Plans	11/1/2010	Met
		Start Study	9/30/2010	Met
		Preliminary Findings	1/30/2011	Met
		Report	6/30/2011	Met
213	Voluntary Safety Programs	Report	1/28/2011	Completed Late – 3/16/2011
214	ASAP & FOQA Implementation	Plans Issued	1/28/2011	Completed Late – 4/14/2011
		Plans Implemented	8/1/2011	FOQA Portion Overdue
215	Safety Management Systems	NPRM	11/1/2010	Met
		Final Rule	8/1/2012	On-Target
216	Screening & Qualifications	NPRM	1/28/2011	Completed Late - 2/29/2012
		Final Rule	8/1/2012	To Be Determined
		ATP	8/1/2013	To Be Determined
217	ATP Certification	Final Rule	8/1/2013	On-Target

Source: OIG analysis of FAA-reported data.